United States
Department of
Agriculture

Natural
Resources
Conservation
Service

In cooperation with
Minnesota Agricultural
Experiment Station

Soil Survey of Wright County, Minnesota

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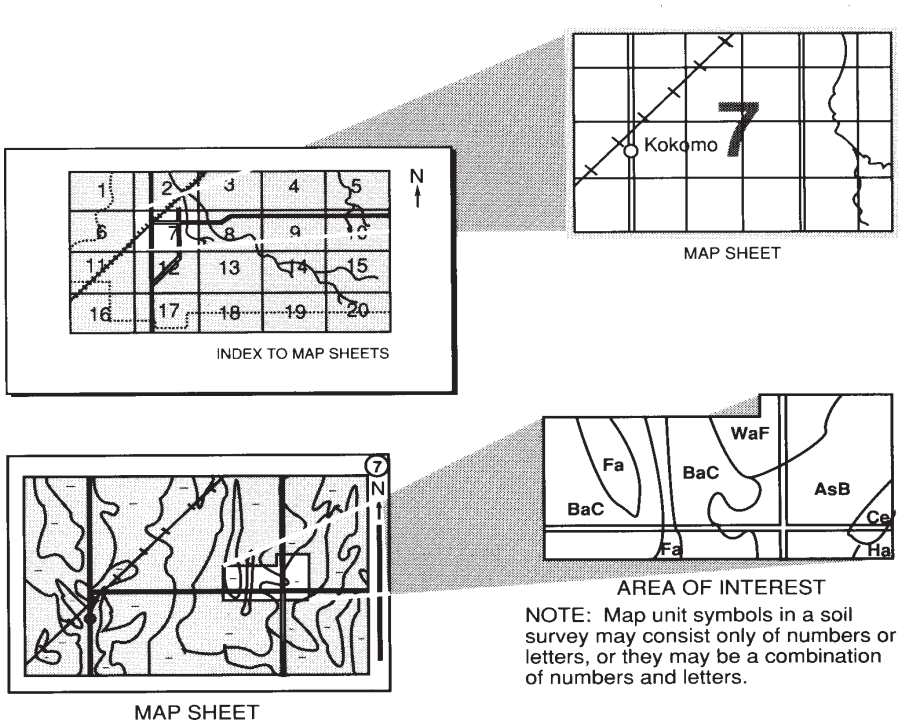
How To Use This Soil Survey

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

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

Locate your area of interest on the map sheet. Note the map unit symbols that are in that area. Turn to the **Contents**, which lists the map units by symbol and name and shows the page where each map unit is described. The map unit symbols and names also appear as bookmarks, which link directly to the appropriate page in the publication.

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



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

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 November 1997. Soil names and descriptions were approved in April 1998. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1997. This survey was made cooperatively by the Natural Resources Conservation Service, the Minnesota Agricultural Experiment Station, and Wright County. The survey is part of the technical assistance furnished to the Wright County Soil and Water Conservation District.

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

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Cover: Agricultural and suburban land uses dominate the Wright County landscape near the confluence of the Mississippi River and the Crow River. The rapidly developing city of Otsego is in the background. In the foreground is a Conservation Reserve Program tree planting.

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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Where To Get Updated Information

The soil properties and interpretations included in this survey were current as of July 2003. The most current information is available through the NRCS Soil Data Mart Website at http://soildatamart.nrcs.usda.gov/

Additional information is available from the Natural Resources Conservation Service (NRCS) Field Office Technical Guide at Buffalo, Minnesota, or online at www.nrcs.usda.gov/technical/efotg. The data in the Field Office Technical Guide are updated periodically.

Additional information about soils and about NRCS is available through the Minnesota NRCS Web page at www.mn.nrcs.usda.gov.

For further information, please contact:

USDA, Natural Resources Conservation Service
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306C Brighton Avenue
Buffalo, MN 55313-1725
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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.

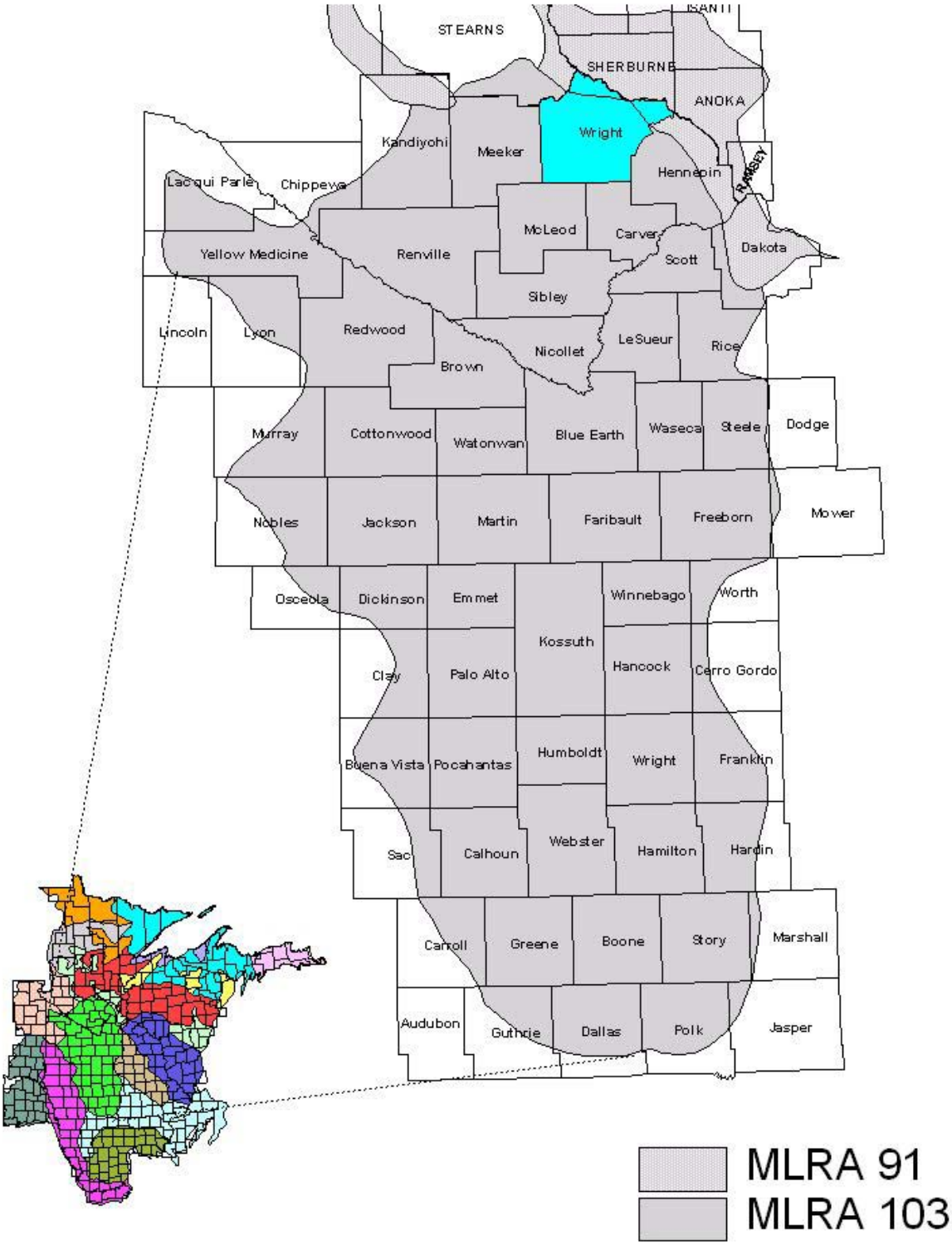
This soil survey is designed for many different users. Farmers, foresters, and agronomists can use it to evaluate the potential of the soil and the management needed for maximum food and fiber production. Planners, community officials, engineers, developers, builders, and home buyers can use the survey 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 soil maps. Each soil in the survey area is described, and information on specific uses is given. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

William Hunt
State Conservationist
Natural Resources Conservation Service



Location of Wright County and MLRAs 91 and 103 in Region 10

Soil Survey of
Wright County, Minnesota

By Thomas C. Jackson, Natural Resources Conservation Service

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Correlation by Allan G. Giencke, Region 10 Soil Data Quality Specialist; database management by Kim D. Steffen, Soil Survey Coordinator

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

How This Survey Was Made

This survey was made to provide updated information about the soils and miscellaneous areas in the survey area, which is in Region 10 and includes Major Land Resource Areas 91 and 103. Region 10 is an administrative division of the Natural Resources Conservation Service. Major Land Resource Areas (MLRAs) are geographically associated land resource units that share a common land use, elevation and topography, climate, water, soils, and vegetation (USDA, 1981). Wright County is a subset of MLRAs 91 and 103. Map unit design and the soil descriptions are based on the occurrence of each soil throughout the MLRA. In some cases a soil component may be referred to that does not occur in the Wright County subset but that is representative of the MLRA.

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

The soils and miscellaneous areas in the survey area are in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landscape 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 mapping, 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 studied. They 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 zone in which the soil moisture status is wet within certain depths in most years, but they cannot predict that this zone 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.

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

Formation and Classification of the Soils

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 is produced by the action of soil-forming processes on material deposited or accumulated by geologic forces. The characteristics of the soil at any given place are determined by (1) the physical and mineralogical composition of the parent material; (2) the climate under which the soil material has accumulated and existed since its accumulation; (3) the plant and animal life on and in the soil; (4) relief, or lay of the land, and the drainage that results from it; and (5) the length of time the forces of development have acted on the soil material. The relative effect of each of these factors is reflected in the soil profile.

Humans have also influenced the development of soils. They have removed the natural vegetation and have used methods of farming that have accelerated erosion and have changed the relief or the effects of relief. Human activities have also modified the natural differences between soils by adding materials to improve the fertility of some soils or by lowering the fertility of some soils by removing crops without replacing plant nutrients.

Climate and vegetation are the active factors of soil genesis. They act on the parent material that has accumulated through the weathering of rocks and slowly change it into a natural body that has genetically related horizons. The effects of climate and vegetation are conditioned by relief. The kind of parent material also affects the kind of profile that forms; in extreme cases, the parent material is entirely responsible for determining the soil profile. Finally, time is needed for the changing of the parent material into a soil profile. Some time is always required for the differentiation of horizons, and a long time is generally required for the development of distinct horizons.

The individual factors of soil formation are described separately in the paragraphs that follow. It is the interaction of all of these factors, however, that determines the nature of the soil profile. Few generalizations can be made regarding the effect of any one factor unless conditions are specified for the others. Many of the processes of soil formation are unknown.

Climate

Climate, as a genetic factor, affects the physical, chemical, and biological relationships in the soil profile, chiefly through the influence of precipitation and temperature. Water from rainfall and melting snow dissolves minerals, supports biological activity, and transports mineral and organic residues through the soil profile. The amount of water that percolates through the soil at a given point depends upon the amount and intensity of rainfall, the relative humidity, the length of the frost-free period, soil permeability, and position on the landscape. Temperature influences the kinds and growth of organisms and the speed of physical and chemical reactions in the soils.

Wright County has a cool, subhumid, continental climate that varies widely in temperature from summer to winter. The soils generally are frozen to a depth of 3 to more than 5 feet for 4 to 5 months of the year. The depth to which frost penetrates depends mostly on the amount of snow received late in fall or early in winter. The snow cover helps to prevent water erosion and slows down denitrification processes. During winter the soil-forming forces are largely dormant, though some alternate freezing and thawing may occur.

The climate is essentially uniform throughout the county, but differences in vegetation, soil materials, and relief can cause variations in the microclimate. Soils in the prairie regions are exposed to a greater variation in temperature than those in the forest regions. In the gently rolling or undulating uplands, the effect of climate is shown in the depth of weathering. Weathering is more rapid in soils that remain moist than in those that dry out or in those that remain saturated most of the year. Fine textured soils warm up more slowly in spring than coarse textured soils because they contain more moisture. Soils on south- and west-facing slopes receive more sunlight and tend to be drier and warmer than soils on north- and east-facing slopes. The interaction of all these factors affects the development of soils.

Living Organisms

Plants and animals are active in the soil-forming processes. They help to decompose plant residues and also affect the chemistry of the soil, and they hasten soil development. The kinds of plants and animals that live on and in the soils also help to convert plant nutrients to a form that is more readily available to higher plants.

Most of Wright County is in the Minnesota Big Woods area. At the time the county was settled, much of it was covered by deciduous forest. A few areas where tall prairie grasses flourished were in the forest tract. On outwash plains near Monticello and Clearwater, where the soils were too droughty for favorable growth of trees, were large prairie areas.

The two types of vegetation, forest and prairie, have strongly influenced the formation of soils in this county. Some of the county has been covered part of the time by prairie and part of the time by forest. The prairie vegetation encroached on the forests, or forest vegetation spread into the prairie as the climate changed or, possibly, as the result of fire.

In areas where the soils formed under similar conditions of relief, drainage, parent material, and time, the surface layer of soils that formed under prairie vegetation is thicker and darker than that of soils that formed under forest vegetation. Also, in forest soils, the movement of clay and organic material into the subsoil is greater and the subsoil commonly is less permeable. Large areas of forest soils, such as Lester soils, are in most parts of the county. Soils that formed under prairie vegetation, such as Dorset soils, are chiefly on outwash plains and stream terraces.

The surface layer of the soils that formed under both prairie and forest vegetation is intermediate in thickness between that of the soils that formed under either prairie or forest vegetation as a result of the influence of grass. The subsurface layer of these prairie/forest soils, however, generally is similar to the gray, eluvial horizon typical of forest soils. This horizon varies in distinctness, and in some areas of sandy soils it does not occur at all. The subsoil of the mixed prairie/forest soils shows a marked increase in clay and a large accumulation of organic matter. Soils that formed under mixed prairie and forest vegetation occur throughout the county but are chiefly in the southwestern part. Cokato soils are examples.

Topography

Relief is an important factor in the formation of soils because of its effect upon drainage, aeration, and erosion. The soils in Wright County are on landscapes ranging from nearly level plains to hilly moraines that include many depressions. The location of Angus, Le Sueur, Cordova, and Glencoe soils generally is predictable because each of these soils typically occupies a particular position on the landscape. The well drained Angus soils are on undulating side slopes; the moderately well drained Le Sueur soils are on slightly convex slopes and flats; the poorly drained Cordova soils are in flats and drainageways; and the very poorly drained Glencoe soils are in depressions. The degree of soil development, therefore, varies greatly among these soils. Maximum development takes place in well drained, gently sloping soils. Little or no development takes place in depressions or in nearly level areas where there is a permanent high water table. Profile development is also slow on steep slopes, where runoff is rapid and the rate of water infiltration is slow. In such areas, geologic erosion removes the soil material almost as quickly as it is formed. The aspect of slopes also is important. Soil material on steep, north-facing slopes, for example, is darker and thicker than soil material on similar south-facing slopes because the soils on north-facing slopes are less subject to heat and to drying winds.

Parent Material

Wright County is in a glaciated region characterized by young plains, moraines, lakes, and lacustrine beds. Glacial till, glacial outwash, and glaciolacustrine material, therefore, make up much of the parent material of the soils. Many of the soils, however, formed in organic material or in recent alluvium or colluvium. The differences in these parent materials account for many of the differences among the soils in the county. In the paragraphs that follow, the different kinds of parent material are described.

Glacial till.—Wright County was covered by continental ice sheets many times during the last 2 million years. The ice ages were separated by warmer periods. The most recent ice age, the Wisconsin, terminated about 10,000 years ago. Material deposited by the older ice sheets is buried deep under younger deposits from the Wisconsin glacier and has no influence on the soils in the county, except insofar as it was recycled and blended with the younger glacial sediment.

During the last glaciation, two main kinds of till were deposited by two lobes of the glacier. The Superior Lobe advanced from the northeast through the Lake Superior basin, and the Des Moines Lobe advanced from the northwest and passed through the Red River Valley and the Minnesota lowland before entering the survey area from the southwest.

Till from the Des Moines Lobe is loamy, yellowish brown, and calcareous. It contains fragments of gray shale from eastern North Dakota and limestone from the Winnipeg area. The till contains calcium carbonate and effervesces strongly if hydrochloric acid is applied. Most soils that formed in this till are leached to a depth of less than 4 feet. Even though the till was derived mostly from limestone and calcareous shale, it includes enough granitic material and material from sandstone to result in soils that have abundant minerals and are dominantly loam or clay loam. Examples are Angus, Lester, and Le Sueur soils.

Till from the Superior Lobe is loamy, reddish brown or brown, and acid. It contains less clay and more sand than the Des Moines till. It contains red pebbles of sandstone and rhyolite and black pebbles of basalt from the Lake Superior area, but it has few pebbles of limestone and no gray shale. It is sandy loam or loam.

Till of the Superior Lobe was deposited first. It is exposed at the surface in the St. Croix moraine in northwestern Wright County, or Silver Creek Township, in an area of mostly steep hills and depressions. It underlies the more recently deposited till of the Des Moines Lobe in other parts of the county. Till of the Des Moines Lobe covers most of the county; in places, the gray and red till are blended together.

Meltwater sediments that were deposited on, under, and against the glacier are called ice-contact stratified drift. Ice-contact deposits typically include some till and form hilly, hummocky topography with many depressions. The St. Croix moraine is composed partly of till and partly of ice-contact stratified drift. Most of the outwash in the county was deposited by meltwater from the Des Moines Lobe.

Glacial outwash.—Deposits of glacial outwash were originally carried by glaciers, but the material was swept out, sorted, and deposited beyond the front of the glacier by streams of meltwater. In Wright County, most of the outwash was deposited by meltwater from the Des Moines Lobe. Most areas are nearly level to undulating, but some rolling to hilly areas of “pitted outwash” are in the northwestern part of the county. The pitted appearance is the result of depressions that were blocked with ice, which kept them from filling with outwash from the glacier. When the ice melted, a depression, or pit, was left. Most of the outwash material is stratified and well sorted, but in many areas near the moraines, it is poorly sorted.

The largest areas of glacial outwash in the county extend from Otsego to Clearwater. The stratified sand, gravel, and finer materials making up the outwash were carried into depressions and old channels of the Mississippi River by floodwater from the melting ice sheet at the end of the glacial period. The outwash was deposited in the same manner that floods each spring now add sediments to the bottom land, except that the floods from the glacier lasted all summer. Smaller areas of glacial outwash border the branches of the Crow River and Silver Creek.

Because the kinds of materials in the glacial outwash vary greatly, many different soils formed in this parent material. Soils that formed in outwash range from fine sand to silty clay in the upper part. The depth to sand and gravel varies, but it is generally 4 feet or less. In small areas in some drainageways, the soil material includes deep deposits of slackwater clay. In many places shaley material is embedded in the coarse textured outwash deposited along the Crow River. Large stones are mixed in the outwash in some places. The depth to free lime carbonates ranges from 3 to more than 6 feet. Dorset, Hubbard, and Two Inlets soils formed in glacial outwash.

Glaciolacustrine material.—Glaciolacustrine material is material of glacial origin that has been reworked and laid down in glacial lakes. The material ranges from sand to clay, and in many places it is interbedded or laminated.

The largest areas of glaciolacustrine material in the survey area are along the shores of Cedar, Clearwater, John, and Union Lakes in the northwestern part of the county. The areas are about a quarter of a mile wide and are on the southeastern side of the lakes. Shorewood soils formed in lacustrine sediments.

Organic material.—Soils consisting of organic material are in the many depressions, drainageways, and old lake bottoms throughout the county. The water table is high in these areas, and thus the areas are always wet. Decomposition in these areas is slowed, and organic material accumulates more rapidly than it decomposes. The soils consist mainly of the remains of aquatic reeds, grasses, and sedges in peaty deposits. Houghton, Klossner, Markey, and Seelyeville soils formed in organic deposits.

If the organic remains that make up the soil material are sufficiently fresh and intact that the plant forms can be identified, the organic material is called peat. If the material is sufficiently decomposed that plant forms cannot be recognized, the material is called muck. Plant remains in various stages of decomposition are the parent material of these soils.

Alluvium.—The soils on old stream terraces and on bottom land along present streams that normally are flooded are made up chiefly of alluvium. The largest areas of soils that formed in alluvium are on bottom land along the Mississippi and Crow Rivers. The sediments vary greatly in texture and generally are stratified. They also vary greatly in color, reaction, and

drainage characteristics. The areas are flooded at various times, and fresh sediments are added. The deposits, therefore, have not been in place long enough for the formation of a soil profile. Elkriver, Fordum, and Suckercreek soils formed in alluvium.

Colluvium.—Soils at the base of slopes and in channels and pitted depressions consist chiefly of colluvium. The material was deposited through creep and local wash. In the glacial uplands, the colluvium washed downslope onto glacial till. Terril soils formed in colluvium on uplands.

On outwash plains, the colluvium is in channels and pitted depressions underlain by glacial sand and gravel. Southhaven soils formed in colluvium on outwash plains and terraces.

Time

Soils may be well developed, poorly developed, or somewhere in between, depending on the length of time that the soil-forming factors have been active. For example, Angus, Lester, and similar soils in undulating to rolling areas have well developed layers, or horizons. The nearly level Dorset and Almora soils also have well developed horizons because the soil material remains in place and internal drainage is good. Glencoe soils, on the other hand, have less pronounced horizons because they are in depressions where soil moisture is retained. The constantly wet condition inhibits the soil-forming processes. Soils on very steep slopes have weak or indistinct horizons. The soil material in these areas does not remain in place long enough for a distinct profile to form.

Soils that formed in alluvial material, such as Suckercreek and Elkriver soils, show the effect of a relatively short period of time for development. Because frequent floods continually deposit fresh material in areas of these soils, the passage of time has only slightly affected soil development. Similarly, soils that formed in colluvium, such as Terril soils, are altered continuously by new additions of material. Soils that formed in organic material also lack well developed horizons because they are in areas so wet that the decomposition of the plant remains that make up the material is restricted.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (Soil Survey Staff, 1998 and 1999). Beginning with the broadest, these categories are the order, suborder, great group, subgroup, family, and series. Classification is based on soil properties observed in the field or inferred from those observations or from laboratory measurements. Table 1 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

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

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

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

SUBGROUP. Each great group has a typic subgroup. Other subgroups are intergrades or extragrades. The typic 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-loamy, mixed, superactive, calcareous, 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.

The soils of the Canisteo series are fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls.

The Official Soil Series Descriptions (OSDs) give information about the series mapped in Wright County. These descriptions are available at http://soils.usda.gov.

Table 1.--Classification of the Soils

Soil name	Family or higher taxonomic class
Almora	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, frigid Alfic Argiudolls
Angus	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Arvilla	Sandy, mixed, frigid Calcic Hapludolls
Barry	Fine-loamy, mixed, superactive, mesic Typic Argiaquolls
Belleville	Sandy over loamy, mixed, superactive, mesic Typic Endoaquolls
Biscay	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, mesic Typic Endoaquolls
Blue Earth	Fine-silty, mixed, superactive, calcareous, mesic Mollic Fluvaquents
Bowstring	Euic, frigid Fluvaquentic Haplosaprists
Braham	Loamy, mixed, superactive, frigid Oxyaquic Hapludalfs
Bygland	Fine, smectitic, frigid Oxyaquic Vertic Argiudolls
Canisteo	Fine-loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls
Cantlin	Mixed, frigid Typic Udipsamments
Cokato	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Cordova	Fine-loamy, mixed, superactive, mesic Typic Argiaquolls
Crowfork	Mixed, mesic Psammentic Argiudolls
Dassel	Coarse-loamy, mixed, superactive, mesic Typic Endoaquolls
Dickinson	Coarse-loamy, mixed, superactive, mesic Typic Hapludolls
Dickman	Sandy, mixed, mesic Typic Hapludolls
Dorset	Coarse-loamy, mixed, superactive, frigid Calcic Argiudolls
Duelm	Sandy, mixed, frigid Oxyaquic Hapludolls
Eckvoll	Loamy, mixed, superactive, frigid Aquic Arenic Hapludalfs
Elkriver	Coarse-loamy, mixed, superactive, frigid Cumulic Hapludolls
Essexville	Sandy over loamy, mixed, superactive, calcareous, mesic Typic Endoaquolls
Estherville	Sandy, mixed, mesic Typic Hapludolls
Forada	Coarse-loamy, mixed, superactive, frigid Typic Endoaquolls
Fordum	Coarse-loamy, mixed, superactive, nonacid, frigid Mollic Fluvaquents
Forestcity	Fine-loamy, mixed, superactive, mesic Typic Argiaquolls
Glencoe	Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls
Gotham	Mixed, mesic Psammentic Hapludalfs
Granby	Sandy, mixed, mesic Typic Endoaquolls
Hamel	Fine-loamy, mixed, superactive, mesic Typic Argiaquolls
Hanlon	Coarse-loamy, mixed, superactive, mesic Cumulic Hapludolls
Hawick	Sandy, mixed, mesic Entic Hapludolls
Houghton	Euic, mesic Typic Haplosaprists
Hubbard	Sandy, mixed, frigid Entic Hapludolls
Isan	Sandy, mixed, frigid Typic Endoaquolls
Kilkenny	Fine, smectitic, mesic Oxyaquic Vertic Hapludalfs
Kingsley	Coarse-loamy, mixed, superactive, mesic Mollic Hapludalfs
Klossner	Loamy, mixed, euic, mesic Terric Haplosaprists
Koronis	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Le Sueur	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Lerdal	Fine, smectitic, mesic Aeric Vertic Epiaqualfs
Lester	Fine-loamy, mixed, superactive, mesic Mollic Hapludalfs
Lida	Coarse-loamy, mixed, superactive, frigid Mollic Hapludalfs
Lindaas	Fine, smectitic, frigid Typic Argiaquolls
Linder	Coarse-loamy, mixed, superactive, mesic Aquic Hapludolls
Litchfield	Sandy, mixed, mesic Aquic Hapludolls
Lizzie	Fine-silty, mixed, superactive Alfic Argiudolls
Lundlake	Fine-loamy, mixed, superactive, mesic Cumulic Endoaquolls
Malardi	Coarse-loamy, mixed, superactive, mesic Typic Argiudolls
Marcellon	Fine-loamy, mixed, superactive, mesic Aquic Argiudolls
Markey	Sandy or sandy-skeletal, mixed, euic, frigid Terric Haplosaprists

Table 1.--Classification of the Soils--Continued

Soil name	Family or higher taxonomic class
Mayer	Fine-loamy over sandy or sandy-skeletal, mixed, superactive, calcareous, mesic Typic Endoaquolls
Mazaska	Fine, smectitic, mesic Vertic Argiaquolls
Medo	Loamy, mixed, euic, mesic Terric Haplosaprists
Mosford	Sandy, mixed, frigid Typic Hapludolls
Muskego	Coprogenous, euic, mesic Limnic Haplosaprists
Nebish	Fine-loamy, mixed, superactive, frigid Typic Hapludalfs
Nessel	Fine-loamy, mixed, superactive, mesic Oxyaquic Hapludalfs
Okoboji	Fine, smectitic, mesic Cumulic Vertic Endoaquolls
Oylen	Coarse-loamy, mixed, superactive, frigid Oxyaquic Argiudolls
Rasset	Coarse-loamy, mixed, superactive, mesic Typic Argiudolls
Reedslake	Fine-loamy, mixed, superactive, mesic Typic Argiudolls
Rolfe	Fine, smectitic, mesic Typic Argialbolls
Rushlake	Mixed, frigid Aquic Udipsamments
Sandberg	Sandy, mixed, frigid Calcic Hapludolls
Seelyeville	Euic, frigid Typic Haplosaprists
Shields	Fine, smectitic, mesic Vertic Epiaqualfs
Shorewood	Fine, smectitic, mesic Aquertic Argiudolls
Southhaven	Fine-loamy, mixed, superactive, frigid Cumulic Hapludolls
Sparta	Sandy, mixed, mesic Entic Hapludolls
Stonelake	Sandy-skeletal, mixed, frigid Typic Udorthents
Storden	Fine-loamy, mixed, superactive, mesic Typic Eutrudepts
Suckercreek	Coarse-loamy, mixed, superactive, calcareous, mesic Fluvaquentic Endoaquolls
Sunburg	Coarse-loamy, mixed, superactive, mesic Typic Eutrudepts
Terril	Fine-loamy, mixed, superactive, mesic Cumulic Hapludolls
Two Inlets	Mixed, frigid Psammentic Hapludalfs
Udipsamments	Udipsamments
Udorthents	Udorthents
Verndale	Coarse-loamy, mixed, superactive, frigid Typic Argiudolls
Waldorf	Fine, smectitic, mesic Vertic Epiaquolls
Winterfield	Mixed, frigid Aquic Udipsamments
Zimmerman	Mixed, frigid Lamellic Udipsamments

Soil Map Unit Descriptions

In this section, arranged in numerical order, are the soil map unit descriptions for the soil series mapped in Wright County.

Characteristics of the soil and the material in which it formed are identified for each soil series. A brief description of the soil profile is provided in the map unit descriptions. For more information about a soil series, the official series description can be viewed or downloaded from the Web. The detailed descriptions follow standards in the "Soil Survey Manual" (Soil Survey Division Staff, 1993). Many of the technical terms used in the descriptions are defined in "Keys to Soil Taxonomy" (Soil Survey Staff, 1998).

The map units on the soil maps in this survey represent the soils or miscellaneous areas in the survey area. These soils or miscellaneous areas are listed as individual components in the map unit descriptions. 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 provided in the tables (see Contents).

A map unit delineation on the soil maps represents an area on the landscape. It is identified by differences in the properties and taxonomic classification of components and by the percentage of each component in the map unit.

Components that are dissimilar, or contrasting, are identified in the map unit description. Dissimilar components are those that have properties and behavioral characteristics divergent enough from those of the major components to affect use or to require different management. 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.

Components that are similar to the major components (noncontrasting) are not identified in the map unit description. Similar components are those that have properties and behavioral characteristics similar enough to those of the major components that they do not affect use or require different management.

The presence of multiple 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 segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol is used for each map unit on the soil maps. This symbol precedes the map unit name in the map unit descriptions. Each description includes general information about the unit. The map unit descriptions include representative values in feet and the months in which wet soil moisture status is highest and lowest in the soil profile and ponding is shallowest and deepest on the soil surface. The descriptions also include the classes of flooding and the months in which flooding is least and most likely to occur. Tables 20, 21, and 22 provide a complete display of this data for every month of the year. The available water capacity given in each map unit description is calculated for all horizons in the soil profile. The organic matter content displayed in each map unit description is calculated for all horizons in the soil profile, except those that represent the surface duff layer on forested soils. Table 18 provides a complete display of available water capacity and organic matter content by horizon.

The principal hazards and limitations to be considered in planning for specific uses are described in other sections of this survey.

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, Hubbard loamy sand, 0 to 2 percent slopes, is a phase of the Hubbard series.

A map unit is named for the component or components that make up a dominant percentage of the map unit. Many map units consist of one dominant component. These map units are consociations. Zimmerman fine sand, 0 to 3 percent slopes, is an example.

Some map units are made up of two or more dominant components. These map units are complexes or undifferentiated groups.

A *complex* consists of two or more components in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. Attempting to delineate the individual components of a complex would result in excessive clutter that could make the map illegible. The pattern and proportion of the components in a complex are somewhat similar in all areas. Stonelake-Nebish complex, 6 to 12 percent slopes, is an example.

An *undifferentiated group* is made up of two or more components that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the components in a mapped area are not uniform. An area can be made up of only one of the dominant components, or it can be made up of all of them. Klossner and Lundlake soils, ponded, 0 to 1 percent slopes, is an undifferentiated group in this survey area.

This survey includes miscellaneous areas. Such areas have little or no soil material and support little or no vegetation. The Pits component of the Pits, gravel-Udorthents complex is an example.

The abbreviation “MAP” in a map unit name stands for “mean annual precipitation.” The numbers that follow the abbreviation refer to a range in inches.

Table 2 gives the acreage and proportionate extent of each map unit. Other tables (see Contents) 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.

7A—Hubbard loamy sand, 0 to 2 percent slopes

Component Description

Hubbard and similar soils

Extent: 95 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,AB—0 to 20 inches; loamy sand
Bw—20 to 32 inches; loamy sand
BC,C—32 to 80 inches; sand

Additional Components

Mosford soils

Extent: 5 percent of the unit

7B—Hubbard loamy sand, 2 to 6 percent slopes

Component Description

Hubbard and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits, shoulders, and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.9 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 18 inches; loamy sand
Bw—18 to 23 inches; loamy sand
BC,C—23 to 80 inches; sand

Additional Components

Mosford soils

Extent: 10 percent of the unit

7C—Hubbard loamy sand, 6 to 12 percent slopes

Component Description

Hubbard and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits, backslopes, and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.6 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
Ap,AB—0 to 12 inches; loamy sand
Bw—12 to 33 inches; coarse sand
C—33 to 80 inches; coarse sand

Additional Components

Mosford soils

Extent: 10 percent of the unit

Sandberg soils

Extent: 10 percent of the unit

8B—Sparta loamy sand, 1 to 6 percent slopes

Component Description

Sparta and similar soils

Extent: 95 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits, shoulders, and backslopes
Slope range: 1 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.7 inches
Content of organic matter in the upper 10 inches: 1.5 percent
Typical profile:
Ap,A—0 to 16 inches; loamy sand
Bw—16 to 29 inches; loamy sand
C—29 to 60 inches; sand

Additional Components

Dickman soils

Extent: 3 percent of the unit

Crowfork soils

Extent: 2 percent of the unit

35—Blue Earth mucky silty clay loam, depressional, 0 to 1 percent slopes

Component Description

Blue Earth, depressional, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Coprogenous earth over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)

Available water capacity to a depth of 60 inches: 12.6 inches
Content of organic matter in the upper 10 inches: 17.5 percent
Typical profile:
Ap—0 to 10 inches; mucky silty clay loam
Cg—10 to 68 inches; mucky silty clay loam
2Cg—68 to 80 inches; loam

Additional Components

Muskego soils

Extent: 10 percent of the unit

Drained areas of mineral soils

Extent: 10 percent of the unit

74B—Dickinson fine sandy loam, 1 to 6 percent slopes

Component Description

Dickinson and similar soils

Extent: 95 percent of the unit
Geomorphic setting: Hills on stream terraces; hills on outwash plains
Position on the landform: Summits and backslopes
Slope range: 1 to 6 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 1.5 percent
Typical profile:
Ap,A1,A2—0 to 18 inches; fine sandy loam
Bw1,Bw2—18 to 30 inches; fine sandy loam
BC—30 to 36 inches; loamy sand
C—36 to 60 inches; sand

Additional Components

Dickman soils

Extent: 5 percent of the unit

86—Canisteo clay loam, moderately fine substratum, 0 to 2 percent slopes

Component Description

Canisteo and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and rims of depressions
Slope range: 0 to 2 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.7 inches
Content of organic matter in the upper 10 inches: 5.5 percent
Typical profile:
Ap,A—0 to 18 inches; clay loam
Bkg—18 to 39 inches; loam
Cg—39 to 80 inches; loam

Additional Components

Cordova soils

Extent: 15 percent of the unit

Glencoe, depressional, soils

Extent: 5 percent of the unit

106C2—Lester loam, 6 to 12 percent slopes, eroded

Component Description

Lester, eroded, and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.6 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 38 inches; clay loam
Bk—38 to 60 inches; loam
C—60 to 80 inches; loam

Additional Components

Angus soils

Extent: 15 percent of the unit

Terril soils

Extent: 8 percent of the unit

Storden soils

Extent: 5 percent of the unit

Hamel soils

Extent: 2 percent of the unit

106D2—Lester loam, 12 to 18 percent slopes, eroded

Component Description

Lester, eroded, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders
Slope range: 12 to 18 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.6 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 38 inches; clay loam
Bk—38 to 60 inches; loam
C—60 to 80 inches; loam

Additional Components

Storden soils

Extent: 8 percent of the unit

Terril soils

Extent: 5 percent of the unit

Angus soils

Extent: 5 percent of the unit

Hamel soils

Extent: 2 percent of the unit

106E—Lester loam, 18 to 25 percent slopes

Component Description

Lester and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 18 to 25 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.4 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
A—0 to 5 inches; loam
BE,Bt—5 to 34 inches; clay loam
Bk—34 to 60 inches; loam
C—60 to 80 inches; loam

Additional Components

Terril soils

Extent: 12 percent of the unit

Storden soils

Extent: 5 percent of the unit

Hamel soils

Extent: 3 percent of the unit

109—Cordova clay loam, 0 to 2 percent slopes

Component Description

Cordova and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.7 inches
Content of organic matter in the upper 10 inches: 5.5 percent
Typical profile:
Ap,A—0 to 18 inches; clay loam
Btg—18 to 38 inches; clay loam
Cg—38 to 80 inches; loam

Additional Components

Glencoe, depressional, soils

Extent: 8 percent of the unit

Le Sueur soils

Extent: 2 percent of the unit

114—Glencoe clay loam, depressional, 0 to 1 percent slopes

Component Description

Glencoe, depressional, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 11.2 inches
Content of organic matter in the upper 10 inches: 7.5 percent
Typical profile:
Ap—0 to 10 inches; clay loam
A,ABg—10 to 35 inches; clay loam
Bg—35 to 48 inches; loam
Cg—48 to 60 inches; loam

Additional Components

Canisteo soils

Extent: 10 percent of the unit

138—Lerdal silty clay loam, 1 to 3 percent slopes

Component Description

Lerdal and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and slight rises
Slope range: 1 to 3 percent
Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciofluvial sediments and reworked till over till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April, May)
Wet soil moisture status is lowest (depth, months): 4.9 feet (February, August)
Ponding: None

Available water capacity to a depth of 60 inches: 10.1 inches
Content of organic matter in the upper 10 inches: 2.4 percent
Typical profile:
Ap—0 to 7 inches; silty clay loam
E—7 to 9 inches; silty clay loam
Bt,Btg,Bw—9 to 47 inches; silty clay loam
Bk—47 to 60 inches; clay loam

Additional Components

Mazaska soils

Extent: 10 percent of the unit

Cordova soils

Extent: 5 percent of the unit

Le Sueur soils

Extent: 5 percent of the unit

158A—Zimmerman fine sand, 0 to 3 percent slopes

Component Description

Zimmerman and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains
Position on the landform: Flats and slight rises
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.8 percent
Typical profile:
Ap—0 to 7 inches; fine sand
E,Bw,E&Bt—7 to 80 inches; fine sand

Additional Components

Cantlin soils

Extent: 5 percent of the unit

Sartell soils

Extent: 5 percent of the unit

158B—Zimmerman fine sand, 3 to 6 percent slopes

Component Description

Zimmerman and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on outwash plains
Position on the landform: Backslopes, shoulders, and summits
Slope range: 3 to 6 percent
Texture of the surface layer: Fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.8 percent
Typical profile:
Ap—0 to 7 inches; fine sand
E,Bw,E&Bt—7 to 80 inches; fine sand

Additional Components

Kost soils

Extent: 5 percent of the unit

Sartell soils

Extent: 5 percent of the unit

158C—Zimmerman fine sand, 6 to 12 percent slopes

Component Description

Zimmerman and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on outwash plains
Position on the landform: Backslopes, summits, and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Fine sand

Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.8 percent
Typical profile:
Ap—0 to 7 inches; fine sand
E,Bw,E&Bt—7 to 80 inches; fine sand

Additional Components

Kost soils

Extent: 5 percent of the unit

Sartell soils

Extent: 5 percent of the unit

158E—Zimmerman fine sand, 12 to 25 percent slopes

Component Description

Zimmerman and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on outwash plains
Position on the landform: Backslopes and shoulders
Slope range: 12 to 25 percent
Texture of the surface layer: Fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 0.5 percent
Typical profile:
A—0 to 3 inches; fine sand
E,Bw,E&Bt—3 to 80 inches; fine sand

Additional Components

Cantlin soils

Extent: 5 percent of the unit

Lino soils

Extent: 5 percent of the unit

Sartell soils

Extent: 5 percent of the unit

169C—Braham loamy fine sand, 6 to 12 percent slopes

Component Description

Braham and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash over till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.1 inches
Content of organic matter in the upper 10 inches: 1.7 percent
Typical profile:
Ap—0 to 8 inches; loamy fine sand
E—8 to 28 inches; loamy sand
2Bt—28 to 48 inches; clay loam
2Bk—48 to 80 inches; loam

Additional Components

Nebish soils

Extent: 5 percent of the unit

Eckvoll, MAP >25, soils

Extent: 3 percent of the unit

Wet mineral soils

Extent: 2 percent of the unit

181—Litchfield loamy fine sand, 0 to 2 percent slopes

Component Description

Litchfield and similar soils

Extent: 95 percent of the unit

Geomorphic setting: Outwash plains
Position on the landform: Flats and slight rises
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 1.3 feet (April)
Wet soil moisture status is lowest (depth, months): 3 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.2 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
Ap,A,AB—0 to 20 inches; loamy fine sand
Bw—20 to 33 inches; fine sand
BC—33 to 40 inches; very fine sandy loam
C—40 to 80 inches; loamy fine sand

Additional Components

Biscay soils

Extent: 5 percent of the unit

229—Waldorf silty clay loam, 0 to 2 percent slopes

Component Description

Waldorf and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Lake plains and moraines
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine sediments
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.8 inches
Content of organic matter in the upper 10 inches: 7 percent
Typical profile:
Ap,A,AB—0 to 20 inches; silty clay loam
Bg—20 to 53 inches; silty clay
Cg—53 to 80 inches; silty clay loam

Additional Components

Lura, depressional, soils

Extent: 5 percent of the unit

Shorewood soils

Extent: 5 percent of the unit

231C—Lester fine sandy loam, 6 to 12 percent slopes

Component Description

Lester and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 6 to 12 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.9 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 9 inches; fine sandy loam
BE,Bt—9 to 53 inches; clay loam
C—53 to 80 inches; loam

Additional Components

Terril soils

Extent: 12 percent of the unit

Angus soils

Extent: 5 percent of the unit

Hamel soils

Extent: 3 percent of the unit

231D—Lester fine sandy loam, 12 to 18 percent slopes

Component Description

Lester and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 12 to 18 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10 inches
Content of organic matter in the upper 10 inches: 1.5 percent
Typical profile:
Ap—0 to 6 inches; fine sandy loam
Bt—6 to 34 inches; clay loam
C—34 to 80 inches; loam

Additional Components

Terril soils

Extent: 12 percent of the unit

Angus soils

Extent: 5 percent of the unit

Hamel soils

Extent: 3 percent of the unit

235—Nessel loam, 1 to 3 percent slopes

Component Description

Nessel and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and slight rises
Slope range: 1 to 3 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.4 inches
Content of organic matter in the upper 10 inches: 1.3 percent
Typical profile:
Ap—0 to 6 inches; loam
Bt—6 to 38 inches; clay loam
C—38 to 80 inches; loam

Additional Components

Cordova soils

Extent: 10 percent of the unit

Angus soils

Extent: 5 percent of the unit

239—Le Sueur clay loam, 1 to 3 percent slopes

Component Description

Le Sueur and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and slight rises
Slope range: 1 to 3 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): 5.9 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
Ap,AB—0 to 17 inches; clay loam

Bt—17 to 37 inches; clay loam
Bk—37 to 46 inches; loam
C—46 to 80 inches; loam

Additional Components

Cordova soils

Extent: 15 percent of the unit

Angus soils

Extent: 5 percent of the unit

247—Linder loam, 0 to 2 percent slopes

Component Description

Linder and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 1.3 feet (April)
Wet soil moisture status is lowest (depth, months): 3 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 5.6 inches
Content of organic matter in the upper 10 inches: 3.5 percent
Typical profile:
Ap,A—0 to 13 inches; loam
Bw—13 to 24 inches; sandy loam
2C—24 to 60 inches; stratified gravelly coarse sand to coarse sand to loamy coarse sand

Additional Components

Biscay soils

Extent: 5 percent of the unit

Biscay, depressional, soils

Extent: 5 percent of the unit

255—Mayer loam, 0 to 2 percent slopes

Component Description

Mayer and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Rims of depressions
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.3 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A1,A2—0 to 18 inches; loam
Bg—18 to 33 inches; sandy clay loam
2C—33 to 80 inches; gravelly coarse sand

Additional Components

Biscay, depressional, soils

Extent: 10 percent of the unit

Biscay soils

Extent: 3 percent of the unit

Linder soils

Extent: 2 percent of the unit

256—Mazaska silty clay loam, 0 to 2 percent slopes

Component Description

Mazaska and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and swales
Slope range: 0 to 2 percent

Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciofluvial sediments and reworked till over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.6 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 9.5 inches
Content of organic matter in the upper 10 inches: 5.5 percent
Typical profile:
Ap,A—0 to 15 inches; silty clay loam
Btg—15 to 42 inches; clay
Bkg—42 to 80 inches; loam

Additional Components

Lerdal soils

Extent: 5 percent of the unit

Shields soils

Extent: 5 percent of the unit

258B—Sandberg loamy sand, 2 to 6 percent slopes

Component Description

Sandberg and similar soils

Extent: 95 percent of the unit
Geomorphic setting: Hills on stream terraces
Position on the landform: Summits, shoulders, and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.4 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap,A—0 to 12 inches; loamy sand
Bw—12 to 19 inches; gravelly loamy coarse sand
Bk,C—19 to 80 inches; gravelly coarse sand

Additional Components

Arvilla, MAP >25, soils

Extent: 5 percent of the unit

258C—Sandberg loamy sand, 6 to 12 percent slopes

Component Description

Sandberg and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on stream terraces
Position on the landform: Backslopes and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.4 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap,A—0 to 12 inches; loamy sand
Bw—12 to 19 inches; gravelly loamy coarse sand
Bk,C—19 to 80 inches; gravelly coarse sand

Additional Components

Corliss soils

Extent: 5 percent of the unit

Southhaven soils

Extent: 5 percent of the unit

258E—Sandberg loamy sand, 12 to 35 percent slopes

Component Description

Sandberg and similar soils

Extent: 85 percent of the unit

Geomorphic setting: Hills on stream terraces
Position on the landform: Backslopes and shoulders
Slope range: 12 to 35 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.4 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
A—0 to 12 inches; loamy sand
Bw—12 to 19 inches; gravelly loamy coarse sand
Bk,C—19 to 80 inches; gravelly coarse sand

Additional Components

Southhaven soils

Extent: 10 percent of the unit

Isan soils

Extent: 5 percent of the unit

260—Duelm loamy sand, 0 to 2 percent slopes

Component Description

Duelm and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats and slight rises
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)
Wet soil moisture status is lowest (depth, months): 4 feet (February, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 4.4 inches
Content of organic matter in the upper 10 inches: 4 percent
Typical profile:
Ap,AB—0 to 16 inches; loamy sand
Bw—16 to 30 inches; coarse sand
C—30 to 80 inches; coarse sand

Additional Components

Isan soils

Extent: 8 percent of the unit

Hubbard soils

Extent: 2 percent of the unit

261—Isan sandy loam, depressional, 0 to 1 percent slopes

Component Description

Isan, depressional, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.5 feet (February)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 4.7 inches
Content of organic matter in the upper 10 inches: 6.5 percent
Typical profile:
A—0 to 14 inches; sandy loam
AB,Bg—14 to 34 inches; loamy sand
Cg—34 to 80 inches; coarse sand

Additional Components

Isan soils

Extent: 10 percent of the unit

286B—Shorewood silty clay loam, 3 to 6 percent slopes

Component Description

Shorewood and similar soils

Extent: 95 percent of the unit
Geomorphic setting: Hills on lake plains; hills on moraines
Position on the landform: Backslopes and summits
Slope range: 3 to 6 percent
Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Lacustrine sediments over till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 5 feet (January, February, July, August, September, October)
Ponding: None
Available water capacity to a depth of 60 inches: 10.2 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A,AB—0 to 17 inches; silty clay loam
Bt—17 to 39 inches; silty clay
2BCg,2Cg—39 to 60 inches; loam

Additional Components

Waldorf soils

Extent: 5 percent of the unit

294A—Rasset sandy loam, 0 to 2 percent slopes

Component Description

Rasset and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 6.1 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 15 inches; sandy loam
Bt—15 to 28 inches; sandy loam
2BC—28 to 36 inches; loamy sand
2C—36 to 80 inches; sand

Additional Components

Dickman soils

Extent: 5 percent of the unit

Malardi soils

Extent: 5 percent of the unit

323—Shields silty clay loam, 0 to 3 percent slopes

Component Description

Shields and similar soils

Extent: 95 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and slight rises
Slope range: 0 to 3 percent
Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Glaciofluvial sediments and reworked till over till
Flooding: None
Wet soil moisture status is highest (depth, months): 1 foot (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 8.7 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap—0 to 8 inches; silty clay loam
BE,Btg—8 to 41 inches; silty clay
2Bk—41 to 80 inches; silty clay loam

Additional Components

Mazaska soils

Extent: 3 percent of the unit

Lerdal soils

Extent: 2 percent of the unit

327A—Dickman sandy loam, 0 to 2 percent slopes

Component Description

Dickman and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.6 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 12 inches; sandy loam
Bw—12 to 19 inches; sandy loam
2Bw—19 to 33 inches; loamy sand
2C—33 to 80 inches; sand

Additional Components

Estherville soils

Extent: 10 percent of the unit

Dickinson soils

Extent: 5 percent of the unit

327B—Dickman sandy loam, 2 to 6 percent slopes

Component Description

Dickman and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on stream terraces; hills on outwash plains
Position on the landform: Summits and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.6 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 12 inches; sandy loam
Bw—12 to 19 inches; sandy loam
2Bw—19 to 33 inches; loamy sand
2C—33 to 80 inches; sand

Additional Components

Estherville soils

Extent: 10 percent of the unit

Dickinson soils

Extent: 5 percent of the unit

375—Forada loam, 0 to 2 percent slopes

Component Description

Forada and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.2 inches

Content of organic matter in the upper 10 inches: 7 percent
Typical profile:
Ap,A—0 to 16 inches; loam
Bg—16 to 28 inches; loam
2Cg—28 to 60 inches; coarse sand

Additional Components

Forada, depressional, soils

Extent: 10 percent of the unit

Oylen soils

Extent: 5 percent of the unit

392—Biscay loam, 0 to 2 percent slopes

Component Description

Biscay and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 7.5 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A1,A2—0 to 20 inches; loam
Bg—20 to 28 inches; loam
2BCg—28 to 36 inches; gravelly loam
2Cg—36 to 60 inches; stratified gravelly coarse sand to loamy sand

Additional Components

Biscay, depressional, soils

Extent: 10 percent of the unit

406—Dorset sandy loam, 0 to 2 percent slopes

Component Description

Dorset and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.7 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 11 inches; sandy loam
Bt—11 to 19 inches; sandy loam
2BC—19 to 32 inches; gravelly loamy sand
2C—32 to 80 inches; gravelly coarse sand

Additional Components

Verndale, acid substratum, soils

Extent: 8 percent of the unit

Almora soils

Extent: 2 percent of the unit

414—Hamel loam, 1 to 3 percent slopes

Component Description

Hamel and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Drainageways and swales
Slope range: 1 to 3 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained

Parent material: Colluvium over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 11.6 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A,AB—0 to 24 inches; loam
Btg—24 to 46 inches; clay loam
Cg—46 to 80 inches; loam

Additional Components

Glencoe, depressional, soils

Extent: 5 percent of the unit

Terril soils

Extent: 5 percent of the unit

441—Almora loam, 0 to 2 percent slopes

Component Description

Almora and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 7.7 inches
Content of organic matter in the upper 10 inches: 4 percent
Typical profile:
Ap—0 to 10 inches; loam
BE—10 to 14 inches; fine sandy loam
Bt—14 to 36 inches; loam
2Bt—36 to 41 inches; loamy sand
2C—41 to 80 inches; gravelly coarse sand

Additional Components

Dorset soils

Extent: 8 percent of the unit

Southhaven soils

Extent: 2 percent of the unit

461B—Koronis loam, 2 to 6 percent slopes

Component Description

Koronis and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.6 inches
Content of organic matter in the upper 10 inches: 2.1 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 31 inches; loam
Bk,C—31 to 80 inches; fine sandy loam

Additional Components

Marcellon, MAP <30, soils

Extent: 10 percent of the unit

Barry soils

Extent: 5 percent of the unit

461C2—Koronis loam, 6 to 12 percent slopes, eroded

Component Description

Koronis, eroded, and similar soils

Extent: 80 percent of the unit

Geomorphic setting: Hills on moraines
Position on the landform: Summits and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.6 inches
Content of organic matter in the upper 10 inches: 0.9 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 31 inches; loam
Bk,C—31 to 80 inches; fine sandy loam

Additional Components

Sunburg soils

Extent: 10 percent of the unit

Forestcity soils

Extent: 5 percent of the unit

Terril, moderately wet, soils

Extent: 5 percent of the unit

461E—Koronis loam, 18 to 40 percent slopes

Component Description

Koronis and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 18 to 40 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.5 inches
Content of organic matter in the upper 10 inches: 2.3 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 28 inches; loam
Bk—28 to 80 inches; fine sandy loam

Additional Components

Sunburg soils

Extent: 10 percent of the unit

Terril, moderately wet, soils

Extent: 8 percent of the unit

Forestcity soils

Extent: 2 percent of the unit

511—Marcellon loam, MAP <30, 0 to 3 percent slopes

Component Description

Marcellon, MAP <30, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and slight rises
Slope range: 0 to 3 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 5 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 9.5 inches
Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
Ap,A—0 to 13 inches; loam
Bt—13 to 32 inches; loam
Bk—32 to 60 inches; sandy loam

Additional Components

Barry soils

Extent: 10 percent of the unit

Koronis soils

Extent: 5 percent of the unit

523—Houghton muck, depressional, 0 to 1 percent slopes

Component Description

Houghton, drained, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 75 percent
Typical profile:
Op—0 to 10 inches; muck
Oa—10 to 80 inches; muck

Additional Components

Klossner, drained, soils

Extent: 10 percent of the unit

Drained areas of mineral soils

Extent: 10 percent of the unit

525—Muskego muck, depressional, 0 to 1 percent slopes

Component Description

Muskego, surface drained, and similar soils

Extent: 75 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over coprogenous earth
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.5 feet (February)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 19.4 inches
Content of organic matter in the upper 10 inches: 75 percent
Typical profile:
Oa1—0 to 9 inches; muck
Oa2—9 to 36 inches; muck
Lco—36 to 60 inches; coprogenous earth

Additional Components

Klossner, depressional, soils

Extent: 10 percent of the unit

Areas of mineral soils

Extent: 10 percent of the unit

Houghton, depressional, soils

Extent: 5 percent of the unit

539—Klossner muck, depressional, 0 to 1 percent slopes

Component Description

Klossner, drained, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)

Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 17.7 inches
Content of organic matter in the upper 10 inches: 50 percent
Typical profile:
Op,Oa—0 to 26 inches; muck
2A1—26 to 36 inches; mucky silty clay loam
2A2—36 to 48 inches; silty clay loam
2Cg—48 to 80 inches; loam

Additional Components

Houghton, drained, soils

Extent: 10 percent of the unit

Areas of mineral soils

Extent: 10 percent of the unit

540—Seelyeville muck, depressional, 0 to 1 percent slopes

Component Description

Seelyeville, surface drained, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Outwash plains and moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.5 feet (February)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 62 percent
Typical profile:
Oa1—0 to 10 inches; muck
Oa2,Oa5—10 to 80 inches; muck

Additional Components

Depressional areas of mineral soils

Extent: 10 percent of the unit

Markey, depressional, soils

Extent: 10 percent of the unit

543—Markey muck, depressional, 0 to 1 percent slopes

Component Description

Markey, surface drained, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over outwash
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.5 feet (February)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 15.8 inches
Content of organic matter in the upper 10 inches: 70 percent
Typical profile:
Oa—0 to 36 inches; muck
A—36 to 42 inches; loamy sand
Cg—42 to 80 inches; sand

Additional Components

Depressional areas of mineral soils

Extent: 10 percent of the unit

Seelyeville, depressional, soils

Extent: 10 percent of the unit

548—Medo muck, depressional, 0 to 1 percent slopes

Component Description

Medo, drained, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over outwash
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 14.3 inches
Content of organic matter in the upper 10 inches: 70 percent
Typical profile:
Op,Oa—0 to 27 inches; muck
2A—27 to 35 inches; mucky loam
2Bg—35 to 39 inches; sandy clay loam
2Cg—39 to 80 inches; gravelly loamy coarse sand

Additional Components

Houghton, drained, soils

Extent: 10 percent of the unit

Drained areas of mineral soils

Extent: 10 percent of the unit

603—Hanlon fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Component Description

Hanlon, occasionally flooded, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats and slight rises
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Occasional (March, April, May, June, July, August)
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): 3.9 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.2 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
A1,A2—0 to 40 inches; fine sandy loam
A3—40 to 63 inches; fine sandy loam
Bw—63 to 70 inches; sandy loam
Cg—70 to 80 inches; stratified sand to loamy fine sand to fine sandy loam

Additional Components

Suckercreek, occasionally flooded, soils

Extent: 10 percent of the unit

Suckercreek, frequently flooded, soils

Extent: 10 percent of the unit

611D—Hawick gravelly sandy loam, 12 to 25 percent slopes

Component Description

Hawick and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on stream terraces; hills on outwash plains
Position on the landform: Shoulders and backslopes
Slope range: 12 to 25 percent
Texture of the surface layer: Gravelly sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None

Available water capacity to a depth of 60 inches: 2.8 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
Ap,AB—0 to 10 inches; gravelly sandy loam
C—10 to 60 inches; gravelly coarse sand

Additional Components

Estherville soils

Extent: 10 percent of the unit

Tomall soils

Extent: 5 percent of the unit

708—Rushlake coarse sand, 1 to 4 percent slopes

Component Description

Rushlake and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Beaches
Position on the landform: Flats and slight rises
Slope range: 1 to 4 percent
Texture of the surface layer: Coarse sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 2 feet (April)
Wet soil moisture status is lowest (depth, months): 4 feet (February, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 3.6 inches
Content of organic matter in the upper 10 inches: 2.1 percent
Typical profile:
A—0 to 9 inches; coarse sand
C—9 to 80 inches; coarse sand

Additional Components

Isan soils

Extent: 13 percent of the unit

Hubbard soils

Extent: 2 percent of the unit

740—Hamel-Glencoe, depressional, complex, 0 to 3 percent slopes

Component Description

Hamel and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Drainageways
Slope range: 0 to 3 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Colluvium over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 11.6 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A,AB—0 to 24 inches; loam
Btg—24 to 46 inches; clay loam
Cg—46 to 80 inches; loam

Glencoe, depressional, and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 11.2 inches
Content of organic matter in the upper 10 inches: 7.5 percent

Typical profile:
Ap—0 to 10 inches; clay loam
A,ABg—10 to 35 inches; clay loam
Bg—35 to 48 inches; loam
Cg—48 to 60 inches; loam

Additional Components

Canisteo soils

Extent: 5 percent of the unit

Terril, moderately wet, soils

Extent: 5 percent of the unit

768—Mosford sandy loam, 0 to 2 percent slopes

Component Description

Mosford and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 13 inches; sandy loam
Bw—13 to 16 inches; coarse sandy loam
2Bw—16 to 35 inches; coarse sand
2C—35 to 80 inches; sand

Additional Components

Hubbard soils

Extent: 10 percent of the unit

Arvilla, MAP >25, soils

Extent: 5 percent of the unit

771—Elkriver fine sandy loam, 0 to 2 percent slopes, rarely flooded

Component Description

Elkriver, rarely flooded, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Alluvium
Flooding does not occur (months): January, February, July, August, September, October, November, December
Flooding is most likely (frequency, months): Rare (March, April, May, June)
Wet soil moisture status is highest (depth, months): 3 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (September)
Ponding: None
Available water capacity to a depth of 60 inches: 8.2 inches
Content of organic matter in the upper 10 inches: 1.7 percent
Typical profile:
Ap—0 to 10 inches; fine sandy loam
A1,A3—10 to 35 inches; fine sandy loam
Bw—35 to 39 inches; fine sandy loam
2C—39 to 80 inches; sand

Additional Components

Mosford, rarely flooded, soils

Extent: 10 percent of the unit

Elkriver, occasionally flooded, soils

Extent: 5 percent of the unit

783C2—Lester-Kilkenny complex, 6 to 12 percent slopes, eroded

Component Description

Lester, eroded, and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders

Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.6 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 38 inches; clay loam
Bk—38 to 60 inches; loam
C—60 to 80 inches; loam

Kilkenny, eroded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciofluvial sediments and reworked till over till
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, March, June, July, August, September, October, November, December)
Ponding: None
Available water capacity to a depth of 60 inches: 10.3 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 9 inches; clay loam
Bt—9 to 53 inches; clay loam
2BC,2C—53 to 80 inches; loam

Additional Components

Storden soils

Extent: 10 percent of the unit

Terril, moderately wet, soils

Extent: 5 percent of the unit

Hamel soils

Extent: 5 percent of the unit

792—Fordum fine sandy loam, 0 to 2 percent slopes, frequently flooded

Component Description

Fordum, frequently flooded, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Concave drainageways
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April, May, June)
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.8 feet (February)
Ponding: None
Available water capacity to a depth of 60 inches: 6.6 inches
Content of organic matter in the upper 10 inches: 6.6 percent
Typical profile:
A—0 to 7 inches; fine sandy loam
Cg—7 to 28 inches; sandy loam
2Cg—28 to 80 inches; sand

Additional Components

Fordum, occasionally flooded, soils

Extent: 5 percent of the unit

Winterfield, occasionally flooded, soils

Extent: 5 percent of the unit

799—Seelyeville and Bowstring soils, 0 to 1 percent slopes, frequently flooded

Component Description

Seelyeville, frequently flooded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats

Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April, May, June)
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.8 feet (February)
Ponding: None
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 62 percent
Typical profile:
Oa1—0 to 12 inches; muck
Oa2,Oa3—12 to 80 inches; muck

Bowstring, frequently flooded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material and alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April, May, June)
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.8 feet (February)
Ponding: None
Available water capacity to a depth of 60 inches: 21.3 inches
Content of organic matter in the upper 10 inches: 65 percent
Typical profile:
Oa1,Oa2—0 to 38 inches; muck
Cg—38 to 47 inches; stratified fine sand to fine sandy loam
O´a—47 to 80 inches; muck

Additional Components

Fordum, frequently flooded, soils

Extent: 5 percent of the unit

Fordum, occasionally flooded, soils

Extent: 5 percent of the unit

804B—Koronis-Sunburg-Hawick complex, 2 to 6 percent slopes

Component Description

Koronis and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.4 inches
Content of organic matter in the upper 10 inches: 2.1 percent
Typical profile:
Ap—0 to 8 inches; sandy loam
Bt—8 to 25 inches; sandy loam
Bk—25 to 60 inches; sandy loam

Sunburg and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders
Slope range: 4 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.6 inches

Content of organic matter in the upper 10 inches: 0.8 percent
Typical profile:
Apk—0 to 7 inches; sandy loam
Bk—7 to 60 inches; sandy loam

Hawick and similar soils

Extent: 15 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 7 inches; sandy loam
Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Additional Components

Marcellon, MAP <30, soils

Extent: 10 percent of the unit

Barry soils

Extent: 5 percent of the unit

804C2—Koronis-Sunburg-Hawick complex, 6 to 12 percent slopes, eroded

Component Description

Koronis, eroded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.4 inches
Content of organic matter in the upper 10 inches: 1.3 percent
Typical profile:
Ap—0 to 8 inches; sandy loam
Bt—8 to 25 inches; sandy loam
Bk—25 to 60 inches; sandy loam

Sunburg and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.6 inches
Content of organic matter in the upper 10 inches: 0.8 percent
Typical profile:
Apk—0 to 7 inches; sandy loam
Bk—7 to 60 inches; sandy loam

Hawick and similar soils

Extent: 15 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 7 inches; sandy loam

Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Forestcity soils

Extent: 5 percent of the unit

804D2—Koronis-Sunburg-Hawick complex, 12 to 18 percent slopes, eroded

Component Description

Koronis, eroded, and similar soils

Extent: 40 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 12 to 18 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.4 inches
Content of organic matter in the upper 10 inches: 1.3 percent
Typical profile:
Ap—0 to 8 inches; sandy loam
Bt—8 to 25 inches; sandy loam
Bk—25 to 60 inches; sandy loam

Sunburg and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders
Slope range: 12 to 18 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.6 inches
Content of organic matter in the upper 10 inches: 0.8 percent
Typical profile:
Apk—0 to 7 inches; sandy loam
Bk—7 to 60 inches; sandy loam

Hawick and similar soils

Extent: 15 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 12 to 18 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 7 inches; sandy loam
Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Forestcity soils

Extent: 5 percent of the unit

804E—Koronis-Sunburg-Hawick complex, 18 to 40 percent slopes

Component Description

Koronis and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 18 to 40 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till

Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.2 inches
Content of organic matter in the upper 10 inches: 1.8 percent
Typical profile:
A—0 to 5 inches; fine sandy loam
BA,Bt—5 to 21 inches; fine sandy loam
Bk—21 to 60 inches; fine sandy loam

Sunburg and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders
Slope range: 18 to 40 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.5 inches
Content of organic matter in the upper 10 inches: 1 percent
Typical profile:
A—0 to 4 inches; fine sandy loam
Bk—4 to 60 inches; fine sandy loam

Hawick and similar soils

Extent: 15 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and shoulders
Slope range: 18 to 40 percent
Texture of the surface layer: Gravelly loamy coarse sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
A1,A2—0 to 11 inches; gravelly loamy coarse sand
Bw—11 to 16 inches; gravelly loamy coarse sand
C—16 to 60 inches; gravelly coarse sand

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Forestcity soils

Extent: 5 percent of the unit

807D2—Koronis-Sunburg complex, 12 to 18 percent slopes, eroded

Component Description

Koronis, eroded, and similar soils

Extent: 65 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 12 to 18 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.4 inches
Content of organic matter in the upper 10 inches: 1.3 percent
Typical profile:
Ap—0 to 8 inches; sandy loam
Bt—8 to 25 inches; sandy loam
Bk—25 to 60 inches; sandy loam

Sunburg and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders
Slope range: 12 to 18 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None

Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.6 inches
Content of organic matter in the upper 10 inches: 0.8 percent
Typical profile:
Apk—0 to 7 inches; sandy loam
Bk—7 to 60 inches; sandy loam

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Forestcity soils

Extent: 5 percent of the unit

875B—Estherville-Hawick complex, 2 to 6 percent slopes

Component Description

Estherville and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.1 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 13 inches; sandy loam
Bw1—13 to 18 inches; sandy loam
2Bw2—18 to 23 inches; loamy coarse sand
2C—23 to 60 inches; gravelly coarse sand

Hawick and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on stream terraces; hills on outwash plains
Position on the landform: Shoulders
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 7 inches; sandy loam
Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Additional Components

Dickman soils

Extent: 10 percent of the unit

875C—Hawick-Estherville complex, 6 to 12 percent slopes

Component Description

Hawick and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on stream terraces; hills on outwash plains
Position on the landform: Shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 7 inches; sandy loam
Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Estherville and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits and backslopes
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.1 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 13 inches; sandy loam
Bw1—13 to 18 inches; sandy loam
2Bw2—18 to 23 inches; loamy coarse sand
2C—23 to 60 inches; gravelly coarse sand

Additional Components

Dickman soils

Extent: 10 percent of the unit

Wadena soils

Extent: 5 percent of the unit

896B—Kingsley-Gotham complex, 2 to 6 percent slopes

Component Description

Kingsley and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.4 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
A—0 to 6 inches; sandy loam
E—6 to 18 inches; sandy loam
Bt—18 to 45 inches; sandy loam
C—45 to 80 inches; sandy loam

Gotham and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and shoulders
Slope range: 2 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Glaciofluvial sediments
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.6 inches
Content of organic matter in the upper 10 inches: 1 percent
Typical profile:
A—0 to 9 inches; loamy sand
Bt—9 to 18 inches; loamy sand
Bw,BC—18 to 40 inches; sand
C—40 to 80 inches; sand

Additional Components

Grays soils

Extent: 5 percent of the unit

896C—Kingsley-Gotham complex, 6 to 12 percent slopes

Component Description

Kingsley and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 8.4 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
A—0 to 6 inches; sandy loam
E—6 to 18 inches; sandy loam
Bt—18 to 45 inches; sandy loam
C—45 to 80 inches; sandy loam

Gotham and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Glaciofluvial sediments
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.6 inches
Content of organic matter in the upper 10 inches: 1 percent
Typical profile:
A—0 to 9 inches; loamy sand
Bt—9 to 18 inches; loamy sand
Bw,BC—18 to 40 inches; sand
C—40 to 80 inches; sand

Additional Components

Grays soils

Extent: 5 percent of the unit

945C2—Lester-Storden complex, 6 to 12 percent slopes, eroded

Component Description

Lester, eroded, and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.6 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 38 inches; clay loam
Bk—38 to 60 inches; loam
C—60 to 80 inches; loam

Storden, eroded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.2 percent
Typical profile:
Ap—0 to 7 inches; loam
Bk—7 to 55 inches; loam
C—55 to 80 inches; loam

Additional Components

Angus soils

Extent: 10 percent of the unit

Terril, moderately wet, soils

Extent: 5 percent of the unit

Hamel soils

Extent: 5 percent of the unit

945D2—Lester-Storden complex, 12 to 18 percent slopes, eroded

Component Description

Lester, eroded, and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders
Slope range: 12 to 18 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.6 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 38 inches; clay loam
Bk—38 to 60 inches; loam
C—60 to 80 inches; loam

Storden, eroded, and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 12 to 18 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.2 percent
Typical profile:
Ap—0 to 7 inches; loam
Bk—7 to 55 inches; loam
C—55 to 80 inches; loam

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Angus soils

Extent: 5 percent of the unit

Hamel soils

Extent: 5 percent of the unit

956—Canisteo-Glencoe, depressional, complex, 0 to 2 percent slopes

Component Description

Canisteo and similar soils

Extent: 65 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and rims of depressions
Slope range: 0 to 2 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.7 inches
Content of organic matter in the upper 10 inches: 5.5 percent
Typical profile:
Ap,A—0 to 18 inches; clay loam
Bkg—18 to 39 inches; loam
Cg—39 to 80 inches; loam

Glencoe, depressional, and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained

Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 11.2 inches
Content of organic matter in the upper 10 inches: 7.5 percent
Typical profile:
Ap—0 to 10 inches; clay loam
A,ABg—10 to 35 inches; clay loam
Bg—35 to 48 inches; loam
Cg—48 to 60 inches; loam

Additional Components

Cordova soils

Extent: 10 percent of the unit

978—Cordova-Rolfe, depressional, complex, 0 to 2 percent slopes

Component Description

Cordova and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.7 inches
Content of organic matter in the upper 10 inches: 5.5 percent
Typical profile:
Ap,A—0 to 18 inches; clay loam
Btg—18 to 38 inches; clay loam
Cg—38 to 80 inches; loam

Rolfe, depressional, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Silt loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Glaciolacustrine sediments over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 10.3 inches
Content of organic matter in the upper 10 inches: 4 percent
Typical profile:
Ap,A—0 to 12 inches; silt loam
E—12 to 20 inches; silt loam
Btg—20 to 35 inches; silty clay
2Bt—35 to 51 inches; clay loam
2Cg—51 to 60 inches; loam

Additional Components

Le Sueur soils

Extent: 10 percent of the unit

1000—Arvilla sandy loam, MAP >25, 0 to 2 percent slopes

Component Description

Arvilla, MAP >25, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Stream terraces
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None
Available water capacity to a depth of 60 inches: 4.3 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap,A—0 to 14 inches; sandy loam
Bw—14 to 20 inches; sandy loam
2Bw,2Bk,2C—20 to 80 inches; gravelly coarse sand

Additional Components

Mosford soils

Extent: 8 percent of the unit

Sandberg soils

Extent: 2 percent of the unit

1015—Udipsamments (cut and fill land)

Component Description

Udipsamments (cut and fill land)

Extent: 100 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Slope range: 0 to 2 percent
Parent material: Sandy material
Flooding: None
General description: Udipsamments are nearly level areas that have had minimal grading. The cut and fill material is dominantly the sandy parent material. Because of the variability of this map unit, interpretations for specific uses are not available. Onsite investigation is needed.

1016—Udorthents, loamy (cut and fill land)

Component Description

Udorthents, loamy

Extent: 100 percent of the unit
Geomorphic setting: Moraines
Slope range: 0 to 6 percent
Parent material: Loamy material
Flooding: None
General description: Udorthents consist primarily of areas that have been cut for leveling or filled for development. The cut and/or fill material is dominantly loamy soil material. As much as 30 percent of this map unit is covered by impervious surfaces. Most of the areas have been disturbed by construction activity. Because of the variability of this map unit, interpretations for specific uses are not available. Onsite investigation is needed.

1023C—Lester-Malardi complex, 6 to 12 percent slopes, eroded

Component Description

Lester, eroded, and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.6 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 38 inches; clay loam
Bk—38 to 60 inches; loam
C—60 to 80 inches; loam

Malardi and similar soils

Extent: 35 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.3 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; sandy loam
Bt—10 to 15 inches; sandy loam

2Bt—15 to 29 inches; loamy coarse sand
2C—29 to 80 inches; gravelly sand

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Hamel soils

Extent: 5 percent of the unit

1023D—Lester-Malardi complex, 12 to 18 percent slopes, eroded

Component Description

Lester, eroded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and shoulders
Slope range: 12 to 18 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.6 percent
Typical profile:
Ap—0 to 7 inches; loam
Bt—7 to 38 inches; clay loam
Bk—38 to 60 inches; loam
C—60 to 80 inches; loam

Malardi and similar soils

Extent: 40 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and shoulders
Slope range: 12 to 18 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.8 inches
Content of organic matter in the upper 10 inches: 2.8 percent
Typical profile:
Ap—0 to 9 inches; sandy loam
Bt—9 to 14 inches; sandy loam
2Bt—14 to 21 inches; gravelly loamy coarse sand
2C—21 to 80 inches; gravelly sand

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Hamel soils

Extent: 5 percent of the unit

1026B—Lizzie silt loam, moderately wet, 1 to 5 percent slopes

Component Description

Lizzie, moderately wet, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Footslopes and backslopes
Slope range: 1 to 5 percent
Texture of the surface layer: Silt loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Glaciolacustrine sediments
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.9 inches
Content of organic matter in the upper 10 inches: 3.5 percent
Typical profile:
Ap,E—0 to 12 inches; silt loam
Bt—12 to 36 inches; silt loam
BC—36 to 40 inches; very fine sandy loam
C—40 to 80 inches; very fine sandy loam

Additional Components

Lida soils

Extent: 8 percent of the unit

Lindaas, morainic, soils

Extent: 2 percent of the unit

1027—Udorthents, wet substratum (fill land)

Component Description

Udorthents, wet substratum

Extent: 100 percent of the unit
Geomorphic setting: Moraines, outwash plains, and stream terraces
Position on the landform: Fill material placed in depressions
Slope range: 0 to 2 percent
Parent material: Variable
Flooding: None
General description: Udorthents, wet substratum, consist of fill material placed in wet depressional areas to match the adjoining upland landscape. Because of the variability of this map unit, interpretations for specific uses are not available. Onsite investigation is needed.

1030—Pits, gravel-Udipsamments complex

Component Description

Pits, gravel

Extent: 80 percent of the unit
Geomorphic setting: Moraines, outwash plains, and stream terraces
Parent material: Sandy and gravelly outwash
General description: Gravel pits are areas that have been mined for gravel or sand. Specific areas are actively being mined or are abandoned pits. Because of the variability of this component, interpretations for specific uses are not available. Onsite investigation is needed.

Udipsamments

Extent: 20 percent of the unit
Geomorphic setting: Moraines, outwash plains, and stream terraces
Parent material: Outwash
General description: Udipsamments are areas of soil that support plant growth. They consist of areas of the pits that have been reclaimed or abandoned. Because of the variability of this component, interpretations for specific uses are not available. Onsite investigation is needed.

1035B—Crowfork loamy sand, 1 to 6 percent slopes

Component Description

Crowfork and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on stream terraces
Position on the landform: Backslopes, shoulders, and summits
Slope range: 1 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.6 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
Ap—0 to 11 inches; loamy sand
E—11 to 20 inches; loamy fine sand
E&Bt—20 to 76 inches; loamy sand
C—76 to 80 inches; sand

Eden Prairie soils

Extent: 5 percent of the unit

Sparta soils

Extent: 5 percent of the unit

1035C—Crowfork loamy sand, 6 to 12 percent slopes

Component Description

Crowfork and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Hills on stream terraces
Position on the landform: Backslopes and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None

Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.6 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
Ap—0 to 11 inches; loamy sand
E—11 to 20 inches; loamy fine sand
E&Bt—20 to 76 inches; loamy sand
C—76 to 80 inches; sand

Additional Components

Eden Prairie soils

Extent: 5 percent of the unit

Sparta soils

Extent: 5 percent of the unit

1035D—Crowfork loamy sand, 12 to 18 percent slopes

Component Description

Crowfork and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on stream terraces
Position on the landform: Shoulders and backslopes
Slope range: 12 to 18 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.6 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
Ap—0 to 11 inches; loamy sand
E—11 to 20 inches; loamy fine sand
E&Bt—20 to 76 inches; loamy sand
C—76 to 80 inches; sand

Additional Components

Eden Prairie soils

Extent: 10 percent of the unit

Sparta soils

Extent: 5 percent of the unit

1036B—Angus fine sandy loam, 2 to 5 percent slopes

Component Description

Angus and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 2 to 5 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 9.9 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 9 inches; fine sandy loam
Bt—9 to 46 inches; loam
Bk—46 to 58 inches; loam
C—58 to 80 inches; loam

Additional Components

Le Sueur soils

Extent: 10 percent of the unit

Cordova soils

Extent: 5 percent of the unit

1037—Eckvoll loamy fine sand, MAP >25, 0 to 3 percent slopes

Component Description

Eckvoll, MAP >25, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and slight rises

Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Outwash over till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, June, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 8.3 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 9 inches; loamy fine sand
E—9 to 24 inches; fine sand
2Bt—24 to 45 inches; loam
2C—45 to 80 inches; loam

Additional Components

Beltrami soils

Extent: 7 percent of the unit

Talmoon soils

Extent: 3 percent of the unit

1038A—Verndale sandy loam, acid substratum, 0 to 2 percent slopes

Component Description

Verndale, acid substratum, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; sandy loam
Bt—10 to 19 inches; sandy loam
2Bw—19 to 28 inches; sand
2C—28 to 80 inches; sand

Additional Components

Dorset soils

Extent: 7 percent of the unit

Hubbard soils

Extent: 3 percent of the unit

1038B—Verndale sandy loam, acid substratum, 2 to 6 percent slopes

Component Description

Verndale, acid substratum, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; sandy loam
Bt—10 to 19 inches; sandy loam
2Bw—19 to 28 inches; sand
2C—28 to 80 inches; sand

Additional Components

Dorset soils

Extent: 10 percent of the unit

Hubbard soils

Extent: 5 percent of the unit

1066B—Malardi-Hawick complex, 1 to 6 percent slopes

Component Description

Malardi and similar soils

Extent: 65 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Backslopes and summits
Slope range: 1 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.3 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; sandy loam
Bt—10 to 15 inches; sandy loam
2Bt—15 to 29 inches; loamy coarse sand
2C—29 to 80 inches; gravelly sand

Hawick and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on stream terraces; hills on outwash plains
Position on the landform: Shoulders
Slope range: 3 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 7 inches; sandy loam
Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Additional Components

Eden Prairie soils

Extent: 5 percent of the unit

Rasset soils

Extent: 5 percent of the unit

1066C—Malardi-Hawick complex, 6 to 12 percent slopes

Component Description

Malardi and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Backslopes and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.3 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; sandy loam
Bt—10 to 15 inches; sandy loam
2Bt—15 to 29 inches; loamy coarse sand
2C—29 to 80 inches; gravelly sand

Hawick and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 7 inches; sandy loam
Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Additional Components

Tomall soils

Extent: 10 percent of the unit

Crowfork soils

Extent: 5 percent of the unit

1066E—Malardi-Hawick complex, 18 to 35 percent slopes

Component Description

Malardi and similar soils

Extent: 55 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits and backslopes
Slope range: 18 to 35 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.8 inches
Content of organic matter in the upper 10 inches: 4.6 percent
Typical profile:
A—0 to 9 inches; sandy loam
Bt—9 to 14 inches; sandy loam
2Bt—14 to 21 inches; gravelly loamy coarse sand
2C—21 to 80 inches; gravelly sand

Hawick and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Shoulders
Slope range: 18 to 35 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
A—0 to 7 inches; sandy loam
Bw—7 to 11 inches; gravelly loamy coarse sand
C—11 to 80 inches; gravelly coarse sand

Additional Components

Tomall soils

Extent: 15 percent of the unit

1072—Udorthents, shallow (sanitary landfill)

Component Description

Udorthents, shallow

Extent: 100 percent of the unit
Geomorphic setting: Moraines and outwash plains
Slope range: 0 to 20 percent
Parent material: Loamy material
Flooding: None
General description: Udorthents consist primarily of soil fill material over refuse material in a sanitary landfill. The cover material is dominantly loamy soil material. As much as 30 percent of this map unit is covered by impervious surfaces. Because of the variability of this map unit, interpretations for specific uses are not available. Onsite investigation is needed.

1075—Klossner and Muskego soils, ponded, 0 to 1 percent slopes

Component Description

Klossner, ponded, and similar soils

Extent: 40 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent

Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over till
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 17.4 inches
Content of organic matter in the upper 10 inches: 42.5 percent
Typical profile:
Oa—0 to 26 inches; muck
2A1—26 to 33 inches; silt loam
2A2—33 to 40 inches; loam
2Cg—40 to 80 inches; loam

Muskego, ponded, and similar soils

Extent: 40 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over coprogenous earth
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 19.4 inches
Content of organic matter in the upper 10 inches: 75 percent
Typical profile:
Oa1—0 to 9 inches; muck
Oa2—9 to 36 inches; muck
Lco—36 to 60 inches; coprogenous earth

Additional Components

Houghton, ponded, soils

Extent: 10 percent of the unit

Ponded areas of mineral soils

Extent: 10 percent of the unit

1080—Klossner, Okoboji, and Glencoe soils, ponded, 0 to 1 percent slopes

Component Description

Klossner, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over till
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 17.4 inches
Content of organic matter in the upper 10 inches: 42.5 percent
Typical profile:
Oa—0 to 26 inches; muck
2A1—26 to 33 inches; silt loam
2A2—33 to 40 inches; loam
2Cg—40 to 80 inches; loam

Okoboji, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Alluvium or lacustrine sediments over till
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 11.9 inches
Content of organic matter in the upper 10 inches: 14 percent
Typical profile:
A1—0 to 10 inches; mucky silty clay loam

A2—10 to 52 inches; silty clay loam
Bg—52 to 60 inches; silty clay loam

Glencoe, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 11.4 inches
Content of organic matter in the upper 10 inches: 7 percent
Typical profile:
A—0 to 42 inches; silty clay loam
Bg—42 to 50 inches; clay loam
Cg—50 to 60 inches; loam

Additional Components

Houghton, ponded, soils

Extent: 10 percent of the unit

1087B—Angus-Malardi complex, 2 to 6 percent slopes

Component Description

Angus and similar soils

Extent: 55 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 2 to 5 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 35 inches; clay loam
BC—35 to 40 inches; clay loam
C—40 to 80 inches; loam

Malardi and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.3 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; sandy loam
Bt—10 to 15 inches; sandy loam
2Bt—15 to 29 inches; loamy coarse sand
2C—29 to 80 inches; gravelly sand

Additional Components

Le Sueur soils

Extent: 10 percent of the unit

Cordova soils

Extent: 5 percent of the unit

1094B—Angus-Cordova complex, 0 to 5 percent slopes

Component Description

Angus and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 2 to 5 percent
Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 35 inches; clay loam
BC—35 to 40 inches; clay loam
C—40 to 80 inches; loam

Cordova and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.6 inches
Content of organic matter in the upper 10 inches: 5.5 percent
Typical profile:
Ap,AB—0 to 13 inches; loam
Btg—13 to 33 inches; clay loam
Cg—33 to 80 inches; loam

Additional Components

Le Sueur soils

Extent: 5 percent of the unit

Glencoe, depressional, soils

Extent: 5 percent of the unit

1099—Granby loamy fine sand, very wet, 0 to 1 percent slopes

Component Description

Granby, very wet, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Beaches on moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April, May, June)
Wet soil moisture status is lowest (depth, months): 1.8 feet (August)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 4.9 inches
Content of organic matter in the upper 10 inches: 7 percent
Typical profile:
A—0 to 12 inches; loamy fine sand
AC—12 to 24 inches; loamy fine sand
C—24 to 60 inches; loamy fine sand

Additional Components

Belleville soils

Extent: 10 percent of the unit

Medo, depressional, soils

Extent: 5 percent of the unit

1110—Isan sandy loam, 0 to 2 percent slopes

Component Description

Isan and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2 feet (August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 4.8 inches
Content of organic matter in the upper 10 inches: 6.5 percent
Typical profile:
Ap,A—0 to 18 inches; sandy loam
AB,Bg—18 to 29 inches; loamy sand
Cg—29 to 80 inches; coarse sand

Additional Components

Isan, depressional, soils

Extent: 10 percent of the unit

1156—Cordova loam, 0 to 2 percent slopes

Component Description

Cordova and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.6 inches
Content of organic matter in the upper 10 inches: 5.5 percent
Typical profile:
Ap,AB—0 to 13 inches; loam
Btg—13 to 33 inches; clay loam
Cg—33 to 80 inches; loam

Additional Components

Glencoe, depressional, soils

Extent: 10 percent of the unit

Nessel soils

Extent: 5 percent of the unit

1161—Barry loam, 0 to 2 percent slopes

Component Description

Barry and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 9.5 inches
Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
Ap—0 to 11 inches; loam
Btg—11 to 33 inches; sandy clay loam
Bkg—33 to 60 inches; sandy loam

Additional Components

Lundlake, depressional, soils

Extent: 10 percent of the unit

Marcellon, MAP <30, soils

Extent: 5 percent of the unit

1163—Suckercreek loam, 0 to 2 percent slopes, frequently flooded

Component Description

Suckercreek, frequently flooded, and similar soils

Extent: 85 percent of the unit

Geomorphic setting: Flood plains
Position on the landform: Concave drainageways
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April, May, June)
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.8 feet (February)
Ponding: None
Available water capacity to a depth of 60 inches: 9.9 inches
Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
A—0 to 22 inches; loam
Cg—22 to 80 inches; loamy fine sand

Additional Components

Suckercreek, occasionally flooded, soils

Extent: 10 percent of the unit

Hanlon, occasionally flooded, soils

Extent: 5 percent of the unit

1165—Lundlake silty clay loam, depressional, 0 to 1 percent slopes

Component Description

Lundlake, depressional, and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Colluvium over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 11.2 inches
Content of organic matter in the upper 10 inches: 8.5 percent
Typical profile:
Ap—0 to 12 inches; silty clay loam
A1,A2,AB—12 to 36 inches; loam
2Bg—36 to 72 inches; sandy loam
2Cg—72 to 80 inches; sandy loam

Additional Components

Forestcity soils

Extent: 10 percent of the unit

1173—Muskego and Klossner soils, 0 to 1 percent slopes, frequently flooded

Component Description

Muskego, frequently flooded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over coprogenous earth
Flooding does not occur (months): January, February, August, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April, May, June)
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.5 feet (February)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 19.4 inches
Content of organic matter in the upper 10 inches: 75 percent
Typical profile:
Oa1—0 to 9 inches; muck
Oa2—9 to 36 inches; muck
Lco—36 to 60 inches; coprogenous earth

Klossner, frequently flooded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over till
Flooding does not occur (months): January, February, August, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April, May, June)
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.5 feet (February)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 17.4 inches
Content of organic matter in the upper 10 inches: 42.5 percent
Typical profile:
Oa—0 to 26 inches; muck
2A1—26 to 33 inches; silt loam
2A2—33 to 40 inches; loam
2Cg—40 to 80 inches; loam

Additional Components

Suckercreek, frequently flooded, soils

Extent: 10 percent of the unit

1186—Forestcity-Lundlake, depressional, complex, 0 to 3 percent slopes

Component Description

Forestcity and similar soils

Extent: 75 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Swales and drainageways
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Colluvium over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 3.3 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 9 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A1—0 to 22 inches; fine sandy loam
A2,AB—22 to 43 inches; loam
2Btg—43 to 60 inches; sandy clay loam
2BCg—60 to 80 inches; sandy loam

Lundlake, depressional, and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Colluvium over till
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (March, April)
Wet soil moisture status is lowest (depth, months): 2 feet (February, August)
Ponding is shallowest (depth, months): 0.5 foot (March)
Ponding is deepest (depth, months): 1 foot (April)
Available water capacity to a depth of 60 inches: 11.3 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A1—0 to 20 inches; loam
A2,A3,AB—20 to 46 inches; loam
Bg—46 to 54 inches; sandy loam
Cg—54 to 60 inches; sandy loam

Additional Components

Marcellon, MAP <30, soils

Extent: 5 percent of the unit

1196B—Lida-Two Inlets complex, 1 to 8 percent slopes

Component Description

Lida and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on moraines; hills on outwash plains
Position on the landform: Backslopes and summits
Slope range: 1 to 8 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.2 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
A—0 to 6 inches; sandy loam
E—6 to 8 inches; sandy loam
Bt—8 to 17 inches; coarse sandy loam
2Bt—17 to 25 inches; gravelly loamy coarse sand
2C—25 to 80 inches; gravelly coarse sand

Two Inlets and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on moraines
Position on the landform: Shoulders
Slope range: 1 to 8 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 0.7 percent
Typical profile:
A—0 to 9 inches; loamy sand
Bt—9 to 19 inches; gravelly loamy sand
C—19 to 80 inches; gravelly sand

Additional Components

Southhaven soils

Extent: 5 percent of the unit

Almora soils

Extent: 5 percent of the unit

1196C—Lida-Two Inlets complex, 8 to 15 percent slopes

Component Description

Lida and similar soils

Extent: 55 percent of the unit
Geomorphic setting: Hills on moraines; hills on outwash plains
Position on the landform: Backslopes and summits
Slope range: 8 to 15 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.2 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
A—0 to 6 inches; sandy loam
E—6 to 8 inches; sandy loam
Bt—8 to 17 inches; coarse sandy loam
2Bt—17 to 25 inches; gravelly loamy coarse sand
2C—25 to 80 inches; gravelly coarse sand

Two Inlets and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on moraines; hills on outwash plains
Position on the landform: Shoulders
Slope range: 8 to 15 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 0.7 percent
Typical profile:
A—0 to 9 inches; loamy sand
Bt—9 to 19 inches; gravelly loamy sand
C—19 to 80 inches; gravelly sand

Additional Components

Southhaven soils

Extent: 10 percent of the unit

Almora soils

Extent: 5 percent of the unit

1196E—Lida-Two Inlets complex, 15 to 30 percent slopes

Component Description

Lida and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on moraines; hills on outwash plains
Position on the landform: Summits and backslopes
Slope range: 15 to 30 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.2 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
A—0 to 6 inches; sandy loam
E—6 to 8 inches; sandy loam
Bt—8 to 17 inches; coarse sandy loam
2Bt—17 to 25 inches; gravelly loamy coarse sand
2C—25 to 80 inches; gravelly coarse sand

Two Inlets and similar soils

Extent: 40 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on moraines
Position on the landform: Shoulders
Slope range: 15 to 30 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.3 inches
Content of organic matter in the upper 10 inches: 0.7 percent
Typical profile:
A—0 to 8 inches; loamy sand
BE,Bt—8 to 20 inches; loamy sand
BC,C—20 to 80 inches; gravelly sand

Additional Components

Southhaven soils

Extent: 5 percent of the unit

Almora soils

Extent: 5 percent of the unit

1197—Suckercreek fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Component Description

Suckercreek, occasionally flooded, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Occasional (March, April, May, June, July, August)
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 2.3 feet (September)
Ponding: None
Available water capacity to a depth of 60 inches: 9.2 inches

Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
A—0 to 12 inches; fine sandy loam
Cg—12 to 80 inches; fine sandy loam

Additional Components

Suckercreek, frequently flooded, soils

Extent: 10 percent of the unit

Hanlon, occasionally flooded, soils

Extent: 10 percent of the unit

1199—Klossner and Lundlake soils, ponded, 0 to 1 percent slopes

Component Description

Klossner, ponded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over till
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 17.4 inches
Content of organic matter in the upper 10 inches: 42.5 percent
Typical profile:
Oa—0 to 26 inches; muck
2A1—26 to 33 inches; silt loam
2A2—33 to 40 inches; loam
2Cg—40 to 80 inches; loam

Lundlake, ponded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Colluvium over till
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 9.6 inches
Content of organic matter in the upper 10 inches: 13.5 percent
Typical profile:
A1—0 to 8 inches; mucky loam
A2—8 to 26 inches; loam
A3,A4,Bkg—26 to 80 inches; sandy loam

Additional Components

Ponded soils that have a thin surface layer of muck

Extent: 10 percent of the unit

1203—Muskego, Blue Earth, and Houghton soils, ponded, 0 to 1 percent slopes

Component Description

Muskego, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over coprogenous earth
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 19.4 inches
Content of organic matter in the upper 10 inches: 75 percent
Typical profile:
Oa1—0 to 9 inches; muck
Oa2—9 to 36 inches; muck
Lco—36 to 60 inches; coprogenous earth

Blue Earth, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Silt loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Coprogenous earth over till
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 12.6 inches
Content of organic matter in the upper 10 inches: 17.5 percent
Typical profile:
A—0 to 50 inches; silt loam
Cg—50 to 60 inches; silt loam

Houghton, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 84.5 percent
Typical profile:
Oa—0 to 80 inches; muck

Additional Components

Klossner, ponded, soils

Extent: 10 percent of the unit

1204B—Reedslake loam, 2 to 5 percent slopes

Component Description

Reedslake and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 2 to 5 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.6 inches
Content of organic matter in the upper 10 inches: 4 percent
Typical profile:
Ap—0 to 12 inches; loam
Bt—12 to 26 inches; clay loam
Bk—26 to 48 inches; loam
C—48 to 80 inches; loam

Additional Components

Le Sueur soils

Extent: 10 percent of the unit

Cokato soils

Extent: 5 percent of the unit

1207B—Reedslake-Le Sueur complex, 1 to 5 percent slopes

Component Description

Reedslake and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 2 to 5 percent
Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.6 inches
Content of organic matter in the upper 10 inches: 4 percent
Typical profile:
Ap—0 to 12 inches; loam
Bt—12 to 26 inches; clay loam
Bk—26 to 48 inches; loam
C—48 to 80 inches; loam

Le Sueur and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Footslopes and toeslopes
Slope range: 1 to 4 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.9 inches
Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
Ap,AB—0 to 14 inches; loam
Bt—14 to 40 inches; clay loam
Bk—40 to 55 inches; loam
C—55 to 80 inches; loam

Additional Components

Cordova soils

Extent: 12 percent of the unit

Cokato soils

Extent: 3 percent of the unit

1213C—Cokato-Storden complex, 6 to 12 percent slopes, eroded

Component Description

Cokato, eroded, and similar soils

Extent: 65 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 3.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 23 inches; clay loam
Bk—23 to 48 inches; loam
C—48 to 80 inches; loam

Storden and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.2 percent

Typical profile:
Ap—0 to 7 inches; loam
Bk—7 to 55 inches; loam
C—55 to 80 inches; loam

Additional Components

Terril, moderately wet, soils

Extent: 8 percent of the unit

Reedslake soils

Extent: 4 percent of the unit

Hamel soils

Extent: 3 percent of the unit

1213D—Cokato-Storden complex, 12 to 18 percent slopes, eroded

Component Description

Cokato, eroded, and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 12 to 18 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 3.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 20 inches; clay loam
Bk—20 to 40 inches; loam
C—40 to 80 inches; loam

Storden and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 12 to 18 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.2 percent
Typical profile:
Ap—0 to 7 inches; loam
Bk—7 to 55 inches; loam
C—55 to 80 inches; loam

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Hamel soils

Extent: 3 percent of the unit

Reedslake soils

Extent: 2 percent of the unit

1220C—Cokato-Storden-Hawick complex, 6 to 12 percent slopes, eroded

Component Description

Cokato, eroded, and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 3.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 23 inches; clay loam
Bk—23 to 48 inches; loam
C—48 to 80 inches; loam

Storden and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and backslopes
Slope range: 6 to 12 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 1.2 percent
Typical profile:
Ap—0 to 7 inches; loam
Bk—7 to 55 inches; loam
C—55 to 80 inches; loam

Hawick and similar soils

Extent: 15 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Gravelly sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 2.8 inches
Content of organic matter in the upper 10 inches: 2 percent
Typical profile:
Ap,AB—0 to 10 inches; gravelly sandy loam
C—10 to 60 inches; gravelly coarse sand

Additional Components

Terril, moderately wet, soils

Extent: 10 percent of the unit

Hamel soils

Extent: 5 percent of the unit

1223—Sandberg-Arvilla complex, MAP >25, 0 to 3 percent slopes

Component Description

Sandberg, MAP >25, and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Stream terraces
Position on the landform: Slight rises
Slope range: 1 to 3 percent
Texture of the surface layer: Loamy coarse sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.9 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap—0 to 11 inches; loamy coarse sand
Bw,BC—11 to 35 inches; gravelly coarse sand
C—35 to 80 inches; gravelly coarse sand

Arvilla, MAP >25, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Stream terraces
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Coarse sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.1 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap,A—0 to 14 inches; coarse sandy loam
Bw—14 to 17 inches; coarse sandy loam
2Bw,2C—17 to 80 inches; gravelly coarse sand

Additional Components

Hubbard soils

Extent: 10 percent of the unit

1224—Hubbard-Verndale, acid substratum, complex, 0 to 3 percent slopes

Component Description

Hubbard and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats
Slope range: 1 to 3 percent
Texture of the surface layer: Loamy coarse sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.5 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 11 inches; loamy coarse sand
Bw—11 to 27 inches; loamy sand
BC,C—27 to 80 inches; sand

Verndale, acid substratum, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats and slight swales
Slope range: 0 to 2 percent
Texture of the surface layer: Coarse sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; coarse sandy loam
Bt—10 to 16 inches; coarse sandy loam
2Bw—16 to 45 inches; coarse sand
2C—45 to 80 inches; sand

Additional Components

Mosford soils

Extent: 5 percent of the unit

Arvilla, MAP >25, soils

Extent: 5 percent of the unit

1231—Hubbard-Mosford complex, 0 to 3 percent slopes

Component Description

Hubbard and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats and slight rises
Slope range: 1 to 3 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,AB—0 to 20 inches; loamy sand
Bw—20 to 32 inches; loamy sand
BC,C—32 to 80 inches; sand

Mosford and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash

Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 13 inches; sandy loam
Bw—13 to 16 inches; coarse sandy loam
2Bw—16 to 35 inches; coarse sand
2C—35 to 80 inches; sand

Additional Components

Verndale, acid substratum, soils

Extent: 5 percent of the unit

Arvilla, MAP >25, soils

Extent: 5 percent of the unit

1255—Elkriver fine sandy loam, 0 to 2 percent slopes, occasionally flooded

Component Description

Elkriver, occasionally flooded, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Occasional (March, April, May, June, July, August)
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): 4.5 feet (February)
Ponding: None
Available water capacity to a depth of 60 inches: 7.4 inches
Content of organic matter in the upper 10 inches: 1.7 percent
Typical profile:
Ap—0 to 10 inches; fine sandy loam
A1,A3—10 to 26 inches; fine sandy loam
Bw—26 to 32 inches; very fine sandy loam
2C—32 to 80 inches; sand

Additional Components

Fordum, frequently flooded, soils

Extent: 15 percent of the unit

Winterfield, occasionally flooded, soils

Extent: 5 percent of the unit

1256—Cantlin loamy fine sand, 0 to 3 percent slopes

Component Description

Cantlin and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains
Position on the landform: Flats and slight rises
Slope range: 0 to 3 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 3.5 feet (April, May)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August, September, October)
Ponding: None
Available water capacity to a depth of 60 inches: 4.1 inches
Content of organic matter in the upper 10 inches: 1.1 percent
Typical profile:
Ap—0 to 8 inches; loamy fine sand
Bw—8 to 22 inches; loamy fine sand
BC,C—22 to 80 inches; fine sand

Additional Components

Lino soils

Extent: 7 percent of the unit

Zimmerman soils

Extent: 3 percent of the unit

1257—Elkriver-Mosford complex, 0 to 6 percent slopes, rarely flooded

Component Description

Elkriver, rarely flooded, and similar soils

Extent: 55 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 3 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Alluvium
Flooding does not occur (months): January, February, July, August, September, October, November, December
Flooding is most likely (frequency, months): Rare (March, April, May, June)
Wet soil moisture status is highest (depth, months): 3 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (September)
Ponding: None
Available water capacity to a depth of 60 inches: 8.2 inches
Content of organic matter in the upper 10 inches: 1.7 percent
Typical profile:
Ap—0 to 10 inches; fine sandy loam
A1,A3—10 to 35 inches; fine sandy loam
Bw—35 to 39 inches; fine sandy loam
2C—39 to 80 inches; sand

Mosford, rarely flooded, and similar soils

Extent: 35 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Slight rises
Slope range: 2 to 6 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat excessively drained
Parent material: Outwash
Flooding does not occur (months): January, February, July, August, September, October, November, December
Flooding is most likely (frequency, months): Rare (March, April, May, June)
Wet soil moisture status is highest (depth, months): 3 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (September)
Ponding: None
Available water capacity to a depth of 60 inches: 4.9 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 11 inches; fine sandy loam
Bw—11 to 16 inches; fine sandy loam
2Bw—16 to 25 inches; fine sand
2C—25 to 80 inches; sand

Additional Components

Fordum, frequently flooded, soils

Extent: 7 percent of the unit

Winterfield, occasionally flooded, soils

Extent: 3 percent of the unit

1260B—Stonelake-Nebish, moderately wet, complex, 2 to 6 percent slopes

Component Description

Stonelake and similar soils

Extent: 55 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 2 to 6 percent
Texture of the surface layer: Loamy coarse sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.4 inches
Content of organic matter in the upper 10 inches: 1.1 percent
Typical profile:
Ap—0 to 8 inches; loamy coarse sand
Bt—8 to 30 inches; very gravelly loamy coarse sand
BC,C—30 to 80 inches; gravelly sand

Nebish, moderately wet, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 2 to 6 percent
Texture of the surface layer: Fine sandy loam

Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 9.7 inches
Content of organic matter in the upper 10 inches: 1.2 percent
Typical profile:
Ap—0 to 6 inches; fine sandy loam
E—6 to 9 inches; fine sandy loam
Bt—9 to 43 inches; clay loam
Bk—43 to 80 inches; loam

Additional Components

Beltrami soils

Extent: 7 percent of the unit

Talmoon soils

Extent: 5 percent of the unit

Braham soils

Extent: 3 percent of the unit

1260C—Stonelake-Nebish complex, 6 to 12 percent slopes

Component Description

Stonelake and similar soils

Extent: 55 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.3 inches
Content of organic matter in the upper 10 inches: 1 percent
Typical profile:
Ap—0 to 7 inches; loamy sand
E—7 to 20 inches; loamy coarse sand
Bt—20 to 42 inches; very gravelly coarse sand
C—42 to 80 inches; very gravelly coarse sand

Nebish and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.4 inches
Content of organic matter in the upper 10 inches: 1 percent
Typical profile:
Ap—0 to 3 inches; fine sandy loam
E—3 to 10 inches; fine sandy loam
Bt—10 to 29 inches; clay loam
Bk—29 to 80 inches; loam

Additional Components

Beltrami soils

Extent: 7 percent of the unit

Talmoon soils

Extent: 5 percent of the unit

Braham soils

Extent: 3 percent of the unit

1260E—Stonelake-Nebish complex, 12 to 25 percent slopes

Component Description

Stonelake and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 12 to 25 percent

Texture of the surface layer: Gravelly coarse sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 2.9 inches
Content of organic matter in the upper 10 inches: 1.4 percent
Typical profile:
A—0 to 5 inches; gravelly coarse sandy loam
Bw—5 to 11 inches; very gravelly coarse sand
Bt—11 to 20 inches; very gravelly coarse sand
BC,C—20 to 80 inches; very gravelly coarse sand

Nebish and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 12 to 25 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 9.4 inches
Content of organic matter in the upper 10 inches: 1.4 percent
Typical profile:
A—0 to 5 inches; fine sandy loam
EB—5 to 9 inches; fine sandy loam
Bt—9 to 27 inches; clay loam
Bk—27 to 80 inches; loam

Additional Components

Beltrami soils

Extent: 7 percent of the unit

Bluffton soils

Extent: 5 percent of the unit

Braham soils

Extent: 3 percent of the unit

1288—Seelyeville and Markey soils, ponded, 0 to 1 percent slopes

Component Description

Seelyeville, ponded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 23.9 inches
Content of organic matter in the upper 10 inches: 62 percent
Typical profile:
Oa1—0 to 15 inches; muck
Oa2,Oa3—15 to 80 inches; muck

Markey, ponded, and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over outwash
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 12.8 inches
Content of organic matter in the upper 10 inches: 70 percent
Typical profile:
Oa—0 to 27 inches; muck
A—27 to 32 inches; loamy sand
Cg—32 to 80 inches; sand

Additional Components

Ponded areas of mineral soils

Extent: 10 percent of the unit

1356—Water, miscellaneous

Component Description

• This map unit consists of bodies of water that have been constructed, including sewage lagoons, storm-water sediment basins with a permanent pool of water, and aquaculture ponds.

1362B—Angus loam, 2 to 5 percent slopes

Component Description

Angus and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Summits and backslopes
Slope range: 2 to 5 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 35 inches; clay loam
BC—35 to 40 inches; clay loam
C—40 to 80 inches; loam

Additional Components

Le Sueur soils

Extent: 10 percent of the unit

Cordova soils

Extent: 5 percent of the unit

1368—Southhaven loam, 0 to 2 percent slopes

Component Description

Southhaven and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Outwash plains
Position on the landform: Swales
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Colluvium over outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 3.5 feet (April, May)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (August, September, October)
Ponding: None
Available water capacity to a depth of 60 inches: 11 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A3—0 to 48 inches; loam
Bw—48 to 62 inches; loam
2Bw—62 to 66 inches; loamy sand
2C—66 to 80 inches; sand

Additional Components

Mosford soils

Extent: 7 percent of the unit

Dorset soils

Extent: 3 percent of the unit

1377B—Dorset-Two Inlets complex, 2 to 6 percent slopes

Component Description

Dorset and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Backslopes and shoulders
Slope range: 2 to 6 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained

Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.7 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap,A—0 to 11 inches; sandy loam
Bt—11 to 19 inches; sandy loam
2BC—19 to 32 inches; gravelly loamy sand
2C—32 to 80 inches; gravelly coarse sand

Two Inlets and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Shoulders
Slope range: 2 to 6 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 0.7 percent
Typical profile:
Ap—0 to 9 inches; loamy sand
Bt—9 to 19 inches; gravelly loamy sand
C—19 to 80 inches; gravelly sand

Additional Components

Southhaven soils

Extent: 5 percent of the unit

Verndale, acid substratum, soils

Extent: 5 percent of the unit

1377C—Dorset-Two Inlets complex, 6 to 12 percent slopes

Component Description

Dorset and similar soils

Extent: 50 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Backslopes and summits
Slope range: 6 to 12 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.7 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap,A—0 to 11 inches; sandy loam
Bt—11 to 19 inches; sandy loam
2BC—19 to 32 inches; gravelly loamy sand
2C—32 to 80 inches; gravelly coarse sand

Two Inlets and similar soils

Extent: 35 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Shoulders
Slope range: 6 to 12 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 0.7 percent
Typical profile:
Ap—0 to 9 inches; loamy sand
Bt—9 to 19 inches; gravelly loamy sand
C—19 to 80 inches; gravelly sand

Additional Components

Southhaven soils

Extent: 10 percent of the unit

Verndale, acid substratum, soils

Extent: 5 percent of the unit

1377D—Dorset-Two Inlets complex, 12 to 20 percent slopes

Component Description

Dorset and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits and backslopes
Slope range: 12 to 20 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
Ap—0 to 9 inches; sandy loam
Bt—9 to 14 inches; sandy loam
2Bt,2BC—14 to 25 inches; gravelly loamy sand
2C—25 to 80 inches; gravelly sand

Two Inlets and similar soils

Extent: 40 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Shoulders
Slope range: 12 to 20 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 3.2 inches
Content of organic matter in the upper 10 inches: 0.7 percent
Typical profile:
Ap—0 to 9 inches; loamy sand
Bt—9 to 19 inches; gravelly loamy sand
C—19 to 80 inches; gravelly sand

Additional Components

Southhaven soils

Extent: 10 percent of the unit

Verndale, acid substratum, soils

Extent: 5 percent of the unit

1377E—Dorset-Two Inlets complex, 20 to 35 percent slopes

Component Description

Dorset and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Summits and backslopes
Slope range: 20 to 35 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 4.1 inches
Content of organic matter in the upper 10 inches: 1.9 percent
Typical profile:
A—0 to 9 inches; sandy loam
Bt—9 to 14 inches; coarse sandy loam
2BC—14 to 27 inches; loamy sand
2C—27 to 80 inches; gravelly sand

Two Inlets and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Shoulders
Slope range: 20 to 35 percent
Texture of the surface layer: Loamy sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Excessively drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year

Ponding: None
Available water capacity to a depth of 60 inches: 3.3 inches
Content of organic matter in the upper 10 inches: 0.7 percent
Typical profile:
A—0 to 8 inches; loamy sand
BE,Bt—8 to 20 inches; loamy sand
BC,C—20 to 80 inches; gravelly sand

Additional Components

Southhaven soils

Extent: 5 percent of the unit

Verndale, acid substratum, soils

Extent: 5 percent of the unit

1378—Fordum loam, 0 to 2 percent slopes, occasionally flooded

Component Description

Fordum, occasionally flooded, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Occasional (March, April, May, June, July, August)
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 2.3 feet (September)
Ponding: None
Available water capacity to a depth of 60 inches: 8.7 inches
Content of organic matter in the upper 10 inches: 5.6 percent
Typical profile:
Ap—0 to 9 inches; loam
Cg—9 to 38 inches; loam
2Cg—38 to 80 inches; stratified sand to silt loam

Additional Components

Fordum, frequently flooded, soils

Extent: 10 percent of the unit

Elkriver, occasionally flooded, soils

Extent: 5 percent of the unit

1379B—Dorset-Almora complex, 1 to 4 percent slopes

Component Description

Dorset and similar soils

Extent: 65 percent of the unit
Geomorphic setting: Hills on outwash plains; hills on stream terraces
Position on the landform: Backslopes and shoulders
Slope range: 1 to 4 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 5 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 5.1 inches
Content of organic matter in the upper 10 inches: 2.8 percent
Typical profile:
Ap—0 to 9 inches; loam
Bt—9 to 21 inches; loam
2Bt—21 to 26 inches; gravelly loamy sand
2C—26 to 80 inches; gravelly sand

Almora and similar soils

Extent: 25 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Flats
Slope range: 1 to 2 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Outwash
Flooding: None
Depth to wet soil moisture status: More than 6.7 feet all year
Ponding: None
Available water capacity to a depth of 60 inches: 7.7 inches
Content of organic matter in the upper 10 inches: 4 percent

Typical profile:
Ap—0 to 10 inches; loam
BE—10 to 14 inches; fine sandy loam
Bt—14 to 36 inches; loam
2Bt—36 to 41 inches; loamy sand
2C—41 to 80 inches; gravelly coarse sand

Additional Components

Southhaven soils

Extent: 5 percent of the unit

Verndale, acid substratum, soils

Extent: 5 percent of the unit

1380A—Bygland silt loam, MAP >25, 0 to 2 percent slopes

Component Description

Bygland, MAP >25, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Lake plains
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Silt loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine sediments
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 11.2 inches
Content of organic matter in the upper 10 inches: 2.8 percent
Typical profile:
Ap—0 to 9 inches; silt loam
Bt—9 to 23 inches; silty clay
BC—23 to 27 inches; silt loam
C—27 to 80 inches; stratified silt loam to silty clay loam

Additional Components

Lindaas, sandy substratum, soils

Extent: 10 percent of the unit

Lindaas, morainic, soils

Extent: 5 percent of the unit

1380B—Bygland silt loam, MAP >25, 2 to 6 percent slopes

Component Description

Bygland, MAP >25, and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Hills on lake plains
Position on the landform: Shoulders, summits, and backslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Silt loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine sediments
Flooding: None
Wet soil moisture status is highest (depth, months): 3 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 11.2 inches
Content of organic matter in the upper 10 inches: 2.8 percent
Typical profile:
Ap—0 to 9 inches; silt loam
Bt—9 to 23 inches; silty clay
BC—23 to 27 inches; silt loam
C—27 to 80 inches; stratified silt loam to silty clay loam

Additional Components

Lindaas, sandy substratum, soils

Extent: 15 percent of the unit

Lindaas, morainic, soils

Extent: 10 percent of the unit

Depressional soils

Extent: 5 percent of the unit

1380C—Bygland silt loam, MAP >25, 6 to 12 percent slopes, eroded

Component Description

Bygland, MAP >25, and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Hills on lake plains
Position on the landform: Shoulders, summits, and backslopes

Slope range: 6 to 12 percent
Texture of the surface layer: Silt loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciolacustrine sediments
Flooding: None
Wet soil moisture status is highest (depth, months): 3 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, March, June, July, August, September, October, November, December)
Ponding: None
Available water capacity to a depth of 60 inches: 11.1 inches
Content of organic matter in the upper 10 inches: 0.9 percent
Typical profile:
Ap—0 to 7 inches; silt loam
Bt—7 to 20 inches; silty clay
BC—20 to 26 inches; silt loam
C—26 to 80 inches; stratified silt loam to silty clay loam

Additional Components

Lindaas, sandy substratum, soils

Extent: 15 percent of the unit

Lindaas, morainic, soils

Extent: 10 percent of the unit

Depressional soils

Extent: 5 percent of the unit

1381—Lindaas silt loam, morainic, 0 to 2 percent slopes

Component Description

Lindaas, morainic, and similar soils

Extent: 80 percent of the unit
Geomorphic setting: Lake plains
Position on the landform: Flats and swales
Slope range: 0 to 2 percent
Texture of the surface layer: Silt loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine sediments
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2.5 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.9 inches
Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
Ap,A—0 to 16 inches; silt loam
Btg—16 to 32 inches; silty clay
Cg—32 to 80 inches; silty clay loam

Additional Components

Lindaas, sandy substratum, soils

Extent: 10 percent of the unit

Depressional soils

Extent: 10 percent of the unit

1383A—Shorewood silty clay loam, moderately wet, 0 to 3 percent slopes

Component Description

Shorewood, moderately wet, and similar soils

Extent: 95 percent of the unit
Geomorphic setting: Moraines and lake plains
Position on the landform: Flats
Slope range: 0 to 3 percent
Texture of the surface layer: Silty clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Lacustrine sediments over till
Flooding: None
Wet soil moisture status is highest (depth, months): 1 foot (April)
Wet soil moisture status is lowest (depth, months): More than 5 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.2 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A,AB—0 to 17 inches; silty clay loam
Bt—17 to 39 inches; silty clay
2BCg,2Cg—39 to 60 inches; loam

Additional Components

Waldorf soils

Extent: 5 percent of the unit

1388B—Terril loam, moderately wet, 2 to 6 percent slopes

Component Description

Terril, moderately wet, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Footslopes
Slope range: 2 to 6 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Colluvium over till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 11.4 inches
Content of organic matter in the upper 10 inches: 4 percent
Typical profile:
Ap,A1—0 to 27 inches; loam
A2,BA—27 to 40 inches; loam
Bw—40 to 63 inches; loam
C—63 to 80 inches; loam

Additional Components

Hamel soils

Extent: 12 percent of the unit

Glencoe, depressional, soils

Extent: 3 percent of the unit

1406—Medo, Dassel, and Biscay soils, ponded, 0 to 1 percent slopes

Component Description

Medo, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Muck
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Organic material over outwash
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 12.2 inches
Content of organic matter in the upper 10 inches: 70 percent
Typical profile:
Oa—0 to 20 inches; muck
2A—20 to 34 inches; loam
2AC,2Cg—34 to 60 inches; sand

Dassel, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 6.8 inches
Content of organic matter in the upper 10 inches: 8 percent
Typical profile:
A1,A3—0 to 23 inches; fine sandy loam
Bg—23 to 31 inches; stratified loamy fine sand to fine sandy loam
2Cg—31 to 60 inches; stratified coarse sand to loamy sand

Biscay, ponded, and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Outwash plains and stream terraces
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)

Drainage class: Very poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status: At the surface all year
Ponding is shallowest (depth, months): 0.5 foot (August)
Ponding is deepest (depth, months): 3 feet (March, April, May)
Available water capacity to a depth of 60 inches: 6.9 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
A1,AB—0 to 24 inches; loam
Bg—24 to 29 inches; loam
2BCg,2Cg—29 to 60 inches; stratified gravelly coarse sand to loamy sand

Additional Components

Houghton, ponded, soils

Extent: 5 percent of the unit

Muskego, ponded, soils

Extent: 5 percent of the unit

1408B—Angus-Kilkenny complex, 2 to 6 percent slopes

Component Description

Angus and similar soils

Extent: 45 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 2 to 5 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 35 inches; clay loam
BC—35 to 40 inches; clay loam
C—40 to 80 inches; loam

Kilkenny and similar soils

Extent: 40 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Shoulders and summits
Slope range: 2 to 6 percent
Texture of the surface layer: Clay loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Glaciofluvial sediments and reworked till over till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.7 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.3 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 11 inches; clay loam
Bt—11 to 35 inches; clay loam
2Bk,2C—35 to 80 inches; loam

Additional Components

Lerdal soils

Extent: 10 percent of the unit

Mazaska soils

Extent: 5 percent of the unit

1438B—Braham loamy fine sand, moderately wet, 2 to 5 percent slopes

Component Description

Braham, moderately wet, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 2 to 5 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Outwash over till

Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 5 feet (January, February, June, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 8.4 inches
Content of organic matter in the upper 10 inches: 1.7 percent
Typical profile:
Ap—0 to 8 inches; loamy fine sand
E—8 to 24 inches; loamy fine sand
2Bt—24 to 42 inches; sandy clay loam
2Bk—42 to 60 inches; loam

Additional Components

Eckvoll, MAP >25, soils

Extent: 7 percent of the unit

Talmoon soils

Extent: 5 percent of the unit

Nebish soils

Extent: 3 percent of the unit

1443—Belleville sandy loam, 0 to 2 percent slopes

Component Description

Belleville and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Beaches on moraines
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine sediments over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April)
Wet soil moisture status is lowest (depth, months): 2 feet (August)
Ponding: None
Available water capacity to a depth of 60 inches: 8.4 inches
Content of organic matter in the upper 10 inches: 4.5 percent
Typical profile:
Ap—0 to 11 inches; sandy loam
Bg—11 to 27 inches; loamy sand
2Bg—27 to 48 inches; loam
2Cg—48 to 80 inches; loam

Additional Components

Soils that have a sandy substratum

Extent: 10 percent of the unit

Soils that have a sandy surface layer

Extent: 5 percent of the unit

1901B—Angus-Le Sueur complex, 1 to 5 percent slopes

Component Description

Angus and similar soils

Extent: 60 percent of the unit
Geomorphic setting: Hills on moraines
Position on the landform: Backslopes and summits
Slope range: 2 to 5 percent
Texture of the surface layer: Loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Well drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 3.6 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (January, February, July, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 10.5 inches
Content of organic matter in the upper 10 inches: 2.5 percent
Typical profile:
Ap—0 to 8 inches; loam
Bt—8 to 35 inches; clay loam
BC—35 to 40 inches; clay loam
C—40 to 80 inches; loam

Le Sueur and similar soils

Extent: 30 percent of the unit
Geomorphic setting: Moraines
Position on the landform: Flats and slight rises
Slope range: 1 to 4 percent
Texture of the surface layer: Loam

Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Till
Flooding: None
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): More than 6.7 feet (February, August)
Ponding: None
Available water capacity to a depth of 60 inches: 10.9 inches
Content of organic matter in the upper 10 inches: 5 percent
Typical profile:
Ap,AB—0 to 14 inches; loam
Bt—14 to 40 inches; clay loam
Bk—40 to 55 inches; loam
C—55 to 80 inches; loam

Additional Components

Cordova soils

Extent: 10 percent of the unit

1931—Essexville sandy loam, 0 to 2 percent slopes

Component Description

Essexville and similar soils

Extent: 75 percent of the unit
Geomorphic setting: Beaches on moraines
Position on the landform: Flats
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Poorly drained
Parent material: Glaciolacustrine sediments over till
Flooding: None
Wet soil moisture status is highest (depth, months): 0.5 foot (April, May)
Wet soil moisture status is lowest (depth, months): 2 feet (August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 8.7 inches
Content of organic matter in the upper 10 inches: 6 percent
Typical profile:
Ap,A—0 to 15 inches; sandy loam
Bg—15 to 30 inches; sand
2Cg—30 to 80 inches; loam

Additional Components

Belleville soils

Extent: 15 percent of the unit

Soils that have a sandy substratum

Extent: 10 percent of the unit

1942—Forada mucky loam, depressional, 0 to 1 percent slopes

Component Description

Forada, depressional, and similar soils

Extent: 85 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Depressions
Slope range: 0 to 1 percent
Texture of the surface layer: Mucky loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.5 feet (February)
Ponding is shallowest (depth, months): 0.5 foot (June)
Ponding is deepest (depth, months): 1 foot (March, April, May)
Available water capacity to a depth of 60 inches: 6.2 inches
Content of organic matter in the upper 10 inches: 10 percent
Typical profile:
A—0 to 10 inches; mucky loam
Bg—10 to 21 inches; sandy loam
2BCg,2Cg—21 to 60 inches; gravelly coarse sand

Additional Components

Forada soils

Extent: 10 percent of the unit

Soils that have a thin organic layer

Extent: 5 percent of the unit

1946—Fordum-Winterfield complex, 0 to 2 percent slopes, frequently flooded

Component Description

Fordum, frequently flooded, and similar soils

Extent: 70 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Concave drainageways
Slope range: 0 to 1 percent
Texture of the surface layer: Fine sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Very poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April, May, June)
Wet soil moisture status is highest (depth, months): At the surface (April, May, June)
Wet soil moisture status is lowest (depth, months): 1.8 feet (February)
Ponding: None
Available water capacity to a depth of 60 inches: 6.6 inches
Content of organic matter in the upper 10 inches: 6.6 percent
Typical profile:
A—0 to 7 inches; fine sandy loam
Cg—7 to 28 inches; sandy loam
2Cg—28 to 80 inches; sand

Winterfield, frequently flooded, and similar soils

Extent: 20 percent of the unit
Geomorphic setting: Flood plains
Position on the landform: Slight rises
Slope range: 0 to 2 percent
Texture of the surface layer: Loamy fine sand
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Somewhat poorly drained
Parent material: Alluvium
Flooding does not occur (months): January, February, September, October, November, December
Flooding is most likely (frequency, months): Frequent (March, April)
Wet soil moisture status is highest (depth, months): 1.5 feet (April)
Wet soil moisture status is lowest (depth, months): 4.5 feet (September)
Ponding: None
Available water capacity to a depth of 60 inches: 4.7 inches
Content of organic matter in the upper 10 inches: 1.7 percent
Typical profile:
A—0 to 8 inches; loamy fine sand
C1,C2—8 to 20 inches; sand
C3,C5—20 to 80 inches; sand

Additional Components

Fordum, occasionally flooded, soils

Extent: 10 percent of the unit

1975—Oylen sandy loam, 0 to 2 percent slopes

Component Description

Oylen and similar soils

Extent: 90 percent of the unit
Geomorphic setting: Stream terraces and outwash plains
Position on the landform: Flats and slight rises
Slope range: 0 to 2 percent
Texture of the surface layer: Sandy loam
Depth to restrictive feature: Very deep (more than 60 inches)
Drainage class: Moderately well drained
Parent material: Outwash
Flooding: None
Wet soil moisture status is highest (depth, months): 2.5 feet (April, May)
Wet soil moisture status is lowest (depth, months): 4 feet (February, August, September)
Ponding: None
Available water capacity to a depth of 60 inches: 4.9 inches
Content of organic matter in the upper 10 inches: 3 percent
Typical profile:
Ap—0 to 10 inches; sandy loam
Bt—10 to 18 inches; sandy loam
2Bw—18 to 38 inches; sand
2C—38 to 80 inches; gravelly coarse sand

Additional Components

Forada soils

Extent: 10 percent of the unit

W—Water

Component Description

- This map unit consists of naturally occurring bodies of water.

Table 2.--Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
7A	Hubbard loamy sand, 0 to 2 percent slopes	755	0.2
7B	Hubbard loamy sand, 2 to 6 percent slopes	1,214	0.3
7C	Hubbard loamy sand, 6 to 12 percent slopes	661	0.1
8B	Sparta loamy sand, 1 to 6 percent slopes	33	*
35	Blue Earth mucky silty clay loam, depressional, 0 to 1 percent slopes	474	0.1
74B	Dickinson fine sandy loam, 1 to 6 percent slopes	294	*
86	Canisteo clay loam, moderately fine substratum, 0 to 2 percent slopes	6,295	1.4
106C2	Lester loam, 6 to 12 percent slopes, eroded	42,943	9.4
106D2	Lester loam, 12 to 18 percent slopes, eroded	11,643	2.5
106E	Lester loam, 18 to 25 percent slopes	8,220	1.8
109	Cordova clay loam, 0 to 2 percent slopes	25,212	5.5
114	Glencoe clay loam, depressional, 0 to 1 percent slopes	11,033	2.4
138	Lerdal silty clay loam, 1 to 3 percent slopes	116	*
158A	Zimmerman fine sand, 0 to 3 percent slopes	109	*
158B	Zimmerman fine sand, 3 to 6 percent slopes	166	*
158C	Zimmerman fine sand, 6 to 12 percent slopes	36	*
158E	Zimmerman fine sand, 12 to 25 percent slopes	34	*
169C	Braham loamy fine sand, 6 to 12 percent slopes	121	*
181	Litchfield loamy fine sand, 0 to 2 percent slopes	285	*
229	Waldorf silty clay loam, 0 to 2 percent slopes	106	*
231C	Lester fine sandy loam, 6 to 12 percent slopes	1,029	0.2
231D	Lester fine sandy loam, 12 to 18 percent slopes	810	0.2
235	Nessel loam, 1 to 3 percent slopes	883	0.2
239	Le Sueur clay loam, 1 to 3 percent slopes	7,758	1.7
247	Linder loam, 0 to 2 percent slopes	207	*
255	Mayer loam, 0 to 2 percent slopes	199	*
256	Mazaska silty clay loam, 0 to 2 percent slopes	830	0.2
258B	Sandberg loamy sand, 2 to 6 percent slopes	294	*
258C	Sandberg loamy sand, 6 to 12 percent slopes	96	*
258E	Sandberg loamy sand, 12 to 35 percent slopes	276	*
260	Duelm loamy sand, 0 to 2 percent slopes	799	0.2
261	Isan sandy loam, depressional, 0 to 1 percent slopes	128	*
286B	Shorewood silty clay loam, 3 to 6 percent slopes	76	*
294A	Rasset sandy loam, 0 to 2 percent slopes	430	*
323	Shields silty clay loam, 0 to 3 percent slopes	49	*
327A	Dickman sandy loam, 0 to 2 percent slopes	22	*
327B	Dickman sandy loam, 2 to 6 percent slopes	181	*
375	Forada loam, 0 to 2 percent slopes	593	0.1
392	Biscay loam, 0 to 2 percent slopes	941	0.2
406	Dorset sandy loam, 0 to 2 percent slopes	6,344	1.4
414	Hamel loam, 1 to 3 percent slopes	7,875	1.7
441	Almora loam, 0 to 2 percent slopes	448	*
461B	Koronis loam, 2 to 6 percent slopes	624	0.1
461C2	Koronis loam, 6 to 12 percent slopes, eroded	955	0.2
461E	Koronis loam, 18 to 40 percent slopes	412	*
511	Marcellon loam, MAP <30, 0 to 3 percent slopes	54	*
523	Houghton muck, depressional, 0 to 1 percent slopes	9,841	2.2
525	Muskego muck, depressional, 0 to 1 percent slopes	1,429	0.3
539	Klossner muck, depressional, 0 to 1 percent slopes	9,961	2.2
540	Seelyeville muck, depressional, 0 to 1 percent slopes	1,013	0.2
543	Markey muck, depressional, 0 to 1 percent slopes	988	0.2

See footnote at end of table.

Table 2.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
548	Medo muck, depressional, 0 to 1 percent slopes	506	0.1
603	Hanlon fine sandy loam, 0 to 2 percent slopes, occasionally flooded	1,025	0.2
611D	Hawick gravelly sandy loam, 12 to 25 percent slopes	43	*
708	Rushlake coarse sand, 1 to 4 percent slopes	390	*
740	Hamel-Glencoe, depressional, complex, 0 to 3 percent slopes	7,195	1.6
768	Mosford sandy loam, 0 to 2 percent slopes	274	*
771	Elkriver fine sandy loam, 0 to 2 percent slopes, rarely flooded	801	0.2
783C2	Lester-Kilkenny complex, 6 to 12 percent slopes, eroded	43	*
792	Fordum fine sandy loam, 0 to 2 percent slopes, frequently flooded	98	*
799	Seelyeville and Bowstring soils, 0 to 1 percent slopes, frequently flooded	479	0.1
804B	Koronis-Sunburg-Hawick complex, 2 to 6 percent slopes	190	*
804C2	Koronis-Sunburg-Hawick complex, 6 to 12 percent slopes, eroded	261	*
804D2	Koronis-Sunburg-Hawick complex, 12 to 18 percent slopes, eroded	247	*
804E	Koronis-Sunburg-Hawick complex, 18 to 40 percent slopes	277	*
807D2	Koronis-Sunburg complex, 12 to 18 percent slopes, eroded	436	*
875B	Estherville-Hawick complex, 2 to 6 percent slopes	136	*
875C	Hawick-Estherville complex, 6 to 12 percent slopes	47	*
896B	Kingsley-Gotham complex, 2 to 6 percent slopes	335	*
896C	Kingsley-Gotham complex, 6 to 12 percent slopes	387	*
945C2	Lester-Storden complex, 6 to 12 percent slopes, eroded	1,641	0.4
945D2	Lester-Storden complex, 12 to 18 percent slopes, eroded	1,383	0.3
956	Canisteo-Glencoe, depressional, complex, 0 to 2 percent slopes	7,067	1.5
978	Cordova-Rolfe, depressional, complex, 0 to 2 percent slopes	406	*
1000	Arvilla sandy loam, MAP >25, 0 to 2 percent slopes	203	*
1015	Udipsamments (cut and fill land)	319	*
1016	Udorthents, loamy (cut and fill land)	510	0.1
1023C	Lester-Malardi complex, 6 to 12 percent slopes, eroded	2,123	0.5
1023D	Lester-Malardi complex, 12 to 18 percent slopes, eroded	2,273	0.5
1026B	Lizzie silt loam, moderately wet, 1 to 5 percent slopes	230	*
1027	Udorthents, wet substratum (fill land)	603	0.1
1030	Pits, gravel-Udipsamments complex	1,482	0.3
1035B	Crowfork loamy sand, 1 to 6 percent slopes	4,921	1.1
1035C	Crowfork loamy sand, 6 to 12 percent slopes	1,567	0.3
1035D	Crowfork loamy sand, 12 to 18 percent slopes	352	*
1036B	Angus fine sandy loam, 2 to 5 percent slopes	426	*
1037	Eckvoll loamy fine sand, MAP >25, 0 to 3 percent slopes	134	*
1038A	Verndale sandy loam, acid substratum, 0 to 2 percent slopes	1,635	0.4
1038B	Verndale sandy loam, acid substratum, 2 to 6 percent slopes	272	*
1066B	Malardi-Hawick complex, 1 to 6 percent slopes	2,818	0.6
1066C	Malardi-Hawick complex, 6 to 12 percent slopes	1,231	0.3
1066E	Malardi-Hawick complex, 18 to 35 percent slopes	466	0.1
1072	Udorthents, shallow (sanitary landfill)	105	*
1075	Klossner and Muskego soils, ponded, 0 to 1 percent slopes	286	*
1080	Klossner, Okoboji, and Glencoe soils, ponded, 0 to 1 percent slopes	5,985	1.3
1087B	Angus-Malardi complex, 2 to 6 percent slopes	2,585	0.6
1094B	Angus-Cordova complex, 0 to 5 percent slopes	12,270	2.7
1099	Granby loamy fine sand, very wet, 0 to 1 percent slopes	159	*
1110	Isan sandy loam, 0 to 2 percent slopes	753	0.2
1156	Cordova loam, 0 to 2 percent slopes	7,353	1.6
1161	Barry loam, 0 to 2 percent slopes	57	*
1163	Suckercreek loam, 0 to 2 percent slopes, frequently flooded	5,698	1.2
1165	Lundlake silty clay loam, depressional, 0 to 1 percent slopes	24	*
1173	Muskego and Klossner soils, 0 to 1 percent slopes, frequently flooded	3,206	0.7
1186	Forestcity-Lundlake, depressional, complex, 0 to 3 percent slopes	479	0.1
1196B	Lida-Two Inlets complex, 1 to 8 percent slopes	1,193	0.3
1196C	Lida-Two Inlets complex, 8 to 15 percent slopes	1,322	0.3
1196E	Lida-Two Inlets complex, 15 to 30 percent slopes	2,768	0.6
1197	Suckercreek fine sandy loam, 0 to 2 percent slopes, occasionally flooded	1,288	0.3
1199	Klossner and Lundlake soils, ponded, 0 to 1 percent slopes	81	*
1203	Muskego, Blue Earth, and Houghton soils, ponded, 0 to 1 percent slopes	8,759	1.9
1204B	Reedslake loam, 2 to 5 percent slopes	2,690	0.6

See footnote at end of table.

Table 2.--Acreage and Proportionate Extent of the Soils--Continued

Map symbol	Soil name	Acres	Percent
1207B	Reedslake-Le Sueur complex, 1 to 5 percent slopes	11,994	2.6
1213C	Cokato-Storden complex, 6 to 12 percent slopes, eroded	6,398	1.4
1213D	Cokato-Storden complex, 12 to 18 percent slopes, eroded	1,220	0.3
1220C	Cokato-Storden-Hawick complex, 6 to 12 percent slopes, eroded	56	*
1223	Sandberg-Arvilla complex, MAP >25, 0 to 3 percent slopes	1,014	0.2
1224	Hubbard-Verndale, acid substratum, complex, 0 to 3 percent slopes	1,097	0.2
1231	Hubbard-Mosford complex, 0 to 3 percent slopes	4,204	0.9
1255	Elkriver fine sandy loam, 0 to 2 percent slopes, occasionally flooded	367	*
1256	Cantlin loamy fine sand, 0 to 3 percent slopes	5	*
1257	Elkriver-Mosford complex, 0 to 6 percent slopes, rarely flooded	1,086	0.2
1260B	Stonelake-Nebish, moderately wet, complex, 2 to 6 percent slopes	298	*
1260C	Stonelake-Nebish complex, 6 to 12 percent slopes	220	*
1260E	Stonelake-Nebish complex, 12 to 25 percent slopes	169	*
1288	Seelyeville and Markey soils, ponded, 0 to 1 percent slopes	3,466	0.8
1356	Water, miscellaneous	167	*
1362B	Angus loam, 2 to 5 percent slopes	28,013	6.1
1368	Southhaven loam, 0 to 2 percent slopes	590	0.1
1377B	Dorset-Two Inlets complex, 2 to 6 percent slopes	15,834	3.5
1377C	Dorset-Two Inlets complex, 6 to 12 percent slopes	6,344	1.4
1377D	Dorset-Two Inlets complex, 12 to 20 percent slopes	1,773	0.4
1377E	Dorset-Two Inlets complex, 20 to 35 percent slopes	1,366	0.3
1378	Fordum loam, 0 to 2 percent slopes, occasionally flooded	369	*
1379B	Dorset-Almora complex, 1 to 4 percent slopes	2,072	0.5
1380A	Bygland silt loam, MAP >25, 0 to 2 percent slopes	223	*
1380B	Bygland silt loam, MAP >25, 2 to 6 percent slopes	120	*
1380C	Bygland silt loam, MAP >25, 6 to 12 percent slopes, eroded	28	*
1381	Lindaas silt loam, morainic, 0 to 2 percent slopes	118	*
1383A	Shorewood silty clay loam, moderately wet, 0 to 3 percent slopes	22	*
1388B	Terril loam, moderately wet, 2 to 6 percent slopes	1,124	0.2
1406	Medo, Dassel, and Biscay soils, ponded, 0 to 1 percent slopes	273	*
1408B	Angus-Kilkenny complex, 2 to 6 percent slopes	170	*
1438B	Braham loamy fine sand, moderately wet, 2 to 5 percent slopes	417	*
1443	Belleville sandy loam, 0 to 2 percent slopes	577	0.1
1901B	Angus-Le Sueur complex, 1 to 5 percent slopes	59,586	13.0
1931	Essexville sandy loam, 0 to 2 percent slopes	981	0.2
1942	Forada mucky loam, depressional, 0 to 1 percent slopes	536	0.1
1946	Fordum-Winterfield complex, 0 to 2 percent slopes, frequently flooded	390	*
1975	Oylen sandy loam, 0 to 2 percent slopes	865	0.2
W	Water	35,660	7.8
	Total	456,800	100.0

* Less than 0.1 percent.

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 sites for buildings, highways and other transportation systems, and parks and other recreational facilities; and as wildlife habitat. It can be used to identify the potentials and limitations of each soil for specific land uses and to help prevent construction failures caused by unfavorable soil properties.

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

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

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

Interpretive Ratings

The interpretive tables in this survey rate the soils in the survey area for various uses. Many of the tables identify the limitations that affect specified uses and indicate the severity of those limitations. The ratings in these tables are both verbal and numerical.

Rating Class Terms

Rating classes are expressed in the tables in terms that indicate the extent to which the soils are limited by all of the soil features that affect a specified use or in terms that indicate the suitability of the soils for the use. Thus, the tables may show limitation classes or suitability classes. Terms for the limitation classes 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.

Agronomy

General management needed for crops and for hay and pasture is suggested in this section. Climate information for the survey area is provided, the system of land capability classification used by the Natural Resources Conservation Service is explained, the estimated yields of the main crops and hay and pasture plants are listed, prime farmland is defined, and considerations affecting windbreaks and environmental plantings are described. Planners of management systems for individual fields or farms should consider obtaining specific information from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Climate

Table 3 gives data on temperature and precipitation for the survey area as recorded at Buffalo, Minnesota, in the period 1961 to 1990. Table 4 shows probable dates of the first freeze in fall and the last freeze in spring. Table 5 provides data on length of the growing season.

In winter, the average temperature is 15 degrees F and the average daily minimum temperature is 5.5 degrees. The lowest temperature during the period of record is -38 degrees. In summer, the average temperature is 70 degrees and the average daily maximum temperature is 82 degrees. The highest temperature during the period of record is 105 degrees.

Growing degree days are shown in table 3. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 29.02 inches. Of this total, 20.83 inches, or about 72 percent, usually falls in April through September. The growing season for most crops falls within this period. The heaviest 1-day rainfall during the period of record was 5.45 inches at Buffalo on July 12, 1961. Thunderstorms occur on about 37 days each year, and most occur between May and August.

The average seasonal snowfall is 45.7 inches. The greatest snow depth at any one time during the period of record was 43 inches. On the average, 97 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

The average relative humidity in midafternoon is about 59 percent. Humidity is higher at night, and the average at dawn is about 78 percent. The sun shines 69 percent of the time possible in summer and 52 percent in winter. The prevailing wind is from the northwest from November through April and from the south and southeast from May through October. Average windspeed is highest, 12 miles per hour, in April.

Cropland Management Considerations

The management concerns affecting the use of the soil map units in the survey area for crops are shown in table 6. The main concerns in managing nonirrigated cropland are conserving moisture, controlling wind erosion and water erosion, and maintaining soil fertility.

Conserving moisture consists primarily of reducing the evaporation and runoff rates and increasing the water infiltration 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.

Generally, a combination of several practices is needed to control *wind erosion* and *water erosion.* Conservation tillage, stripcropping, field windbreaks, contour farming, conservation cropping systems, crop residue management, terraces, diversions, and grassed waterways help to prevent excessive soil loss.

Measures that are effective in maintaining *soil fertility* include applying fertilizer, both organic and inorganic, including manure; incorporating crop residue or green manure crops into the soil; and using proper crop rotations. Controlling erosion helps to prevent the loss of organic matter and plant nutrients and thus helps to maintain productivity, although the level of fertility can be reduced even in areas where erosion is controlled. All soils used for nonirrigated crops respond well to applications of fertilizer.

Some of the considerations shown in the table cannot be easily overcome. These are *channels, flooding, gullies,* and *ponding.*

Additional considerations are as follows:

Lime content, limited available water capacity, limited organic matter content, potential poor tilth and compaction, and *restricted permeability.*—These limitations can be minimized by incorporating green manure crops, manure, or crop residue into the soil; applying a system of conservation tillage; and using conservation cropping systems. Also, crops may respond well to additions of phosphate fertilizer to soils that have a high content of lime.

Potential for ground-water contamination.—The proper use of nutrients and pesticides can reduce the risk of ground-water contamination.

Potential for surface-water contamination.—The risk of surface-water contamination can be reduced by the proper use of nutrients and pesticides and by conservation farming practices that reduce the runoff rate.

Surface crusting.—This limitation retards seedling development after periods of heavy rainfall.

Surface rock fragments.—This limitation causes rapid wear of tillage equipment. It cannot be easily overcome.

Surface stones.—Stones or boulders on or near the surface can hinder normal tillage unless they are removed.

Salt content.—In areas where this is a limitation, only salt-tolerant crops should be grown.

On irrigated soils the main management concerns are *efficient water use, nutrient management, control of erosion, pest and weed control,* and *timely planting and harvesting* for a successful crop. An irrigation system that provides optimum control and distribution of water at minimum cost is needed. Overirrigation wastes water, leaches plant nutrients, and causes erosion. Also, it can increase wetness and soil salinity.

Explanation of Criteria

Acid soil.—The pH is less than 6.1.

Channeled.—The word "channeled" is included in the map unit name.

Dense layer.—The bulk density is 1.80 g/cc or greater within the soil profile.

Depth to rock.—The depth to bedrock is less than 40 inches.

Eroded.—The word "eroded" is included in the map unit name.

Excessive permeability.—Saturated hydraulic conductivity is 42 micrometers per second or more within the soil profile.

Flooding.—Flooding is occasional, frequent, or very frequent.

Gullied.—The word "gullied" is included in the map unit name.

High organic matter content.—The surface layer has more than 20 percent organic matter.

Lime content.—The pH is 7.4 or more in the surface layer, or the wind erodibility group is 4L.

Limited available water capacity.—The available water capacity calculated to a depth of 60 inches or to a root-limiting layer is 6 inches or less.

Limited organic matter content.—The content of organic matter is 2 percent or less in the surface layer.

Ponding.—Ponding duration is assigned to the map unit component. Water is above the surface.

Potential poor tilth and compaction.—The content of clay is 27 percent or more in the surface layer.

Potential for ground-water contamination (by nutrients or pesticides).—The depth to a zone in which the soil moisture status is wet is 4 feet or less, the saturated hydraulic conductivity of any layer is more than 42 micrometers per second, or the depth to bedrock is less than 60 inches.

Potential for surface-water contamination (by nutrients or pesticides).—The map unit component is occasionally, frequently, or very frequently flooded, is subject to ponding, is assigned to hydrologic group C or D and has a slope of more than 2 percent, is assigned to hydrologic group A and has a slope of more than 6 percent, or is assigned to hydrologic group B, has a slope of 3 percent or more, and has a K factor of more than 0.17.

Previously eroded.—The word "eroded" is included in the map unit name.

Restricted permeability.—Saturated hydraulic conductivity is less than 0.42 micrometer per second within the soil profile.

Salt content.—The electrical conductivity is 4 or more in the surface layer or 8 or more within a depth of 30 inches.

Slope (equipment limitation).—The slope is more than 15 percent.

Surface crusting.—The content of clay is 27 percent or more and the content of organic matter is 2 percent or less in the surface layer.

Surface rock fragments (equipment limitation).—The terms describing the texture of the surface layer include any rock fragment modifier, except for gravelly, channery, stony, very stony, extremely stony, bouldery, very bouldery, and extremely bouldery.

Surface stones (equipment limitation).—The word "stony" or "bouldery" is included in the description of the surface layer, or 0.01 percent or more of the surface is covered with boulders.

Water erosion.—Either the slope is 6 percent or more, or the slope is more than 3 percent and less than 6 percent and the surface layer is not sandy.

Wet soil moisture status.—A zone in which the soil moisture status is wet is within 2.5 feet of the surface.

Wind erosion.—The wind erodibility group is 1, 2, 3, or 4L.

Crop Yield Estimates

The average yields per acre that can be expected of the principal crops under a high level of management are shown in tables 7a and 7b. In any given year, yields may be higher or lower than those indicated in the tables 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 tables.

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.

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.

For yields of irrigated crops, it is assumed that the irrigation system is adapted to the soils and to the crops grown, that good-quality irrigation water is uniformly applied as needed, and that tillage is kept to a minimum.

The estimated yields reflect the productive capacity of each soil for each of the principal crops. Yields are likely to increase as new production technology is developed. The productivity of a given soil compared with that of other soils, however, is not likely to change.

Crops other than those shown in the tables 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 Hayland Interpretations

Soils are assigned to forage suitability groups according to their suitability for the production of forage vegetation. 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. The forage suitability groups of the soils in the survey area are listed in table 8. Detailed descriptions of forage suitability groups are available at local offices of the Natural Resources Conservation Service.

Under good management, proper grazing is essential for the production of high-quality forage, stand survival, and erosion control. Proper grazing helps plants to maintain sufficient and generally vigorous top growth during the growing season. Brush control is essential in many areas, and weed control generally is needed. Rotation grazing and renovation also are important management practices.

Yield estimates are often provided in animal unit months (AUM), or the amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about forage yields other than those shown in tables 7a and 7b.

Land Capability Classification

Land capability classification shows, in a general way, the suitability of soils for most kinds of field crops. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland or for engineering purposes.

In the capability system, soils generally are grouped at three levels—capability class, subclass, and unit (USDA, 1961). These categories indicate the degree and kinds of limitations affecting mechanized farming systems that produce the more commonly grown field crops, such as corn, small grain, cotton, hay, and field-grown vegetables. Only class and subclass are used in this survey.

Capability classes, the broadest groups, are designated by the numbers 1 through 8. The numbers indicate progressively greater limitations and narrower choices for practical use.

If properly managed, soils in classes 1, 2, 3, and 4 are suitable for the mechanized production of commonly grown field crops and for pasture and woodland. The degree of the soil limitations affecting the production of cultivated crops increases progressively from class 1 to class 4. The limitations can affect levels of production and the risk of permanent soil deterioration caused by erosion and other factors.

Soils in classes 5, 6, and 7 are generally not suited to the mechanized production of commonly grown field crops without special management, but they are suitable for plants that provide a permanent cover, such as grasses and trees. The severity of the soil limitations affecting crops increases progressively from class 5 to class 7.

Areas in class 8 are generally not suitable for crops, pasture, or woodland without a level of management that is impractical. These areas may have potential for other uses, such as recreational facilities and wildlife habitat.

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

There are no subclasses in class 1 because the soils of this class have few limitations. Class 5 contains only the subclasses indicated by *w, s,* or *c* because the soils in class 5 are subject to little or no erosion. They have other limitations that restrict their use mainly to pasture, woodland, wildlife habitat, or recreation.

The capability classification of map units in the survey area is given in tables 7a and 7b.

Prime Farmland

Prime farmland is of major importance in meeting the Nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, State, and Federal levels, as well as individuals, must encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to food, feed, forage, fiber, and oilseed crops. Such soils have properties that favor the economic production of sustained high yields of crops. The soils need only to be treated and managed by acceptable farming methods. An adequate moisture supply and a sufficiently long growing season are required. Prime farmland soils produce the highest yields with minimal expenditure of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be used as cropland, pasture, or woodland or for other purposes. They either are used for food and fiber or are available for these uses. Urban or built-up land, public land, and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water-control structures. Public land is land not available for farming in National forests, National parks, military reservations, and State parks.

Prime farmland soils commonly receive an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable, and the level of acidity or alkalinity and the content of salts and sodium are acceptable. The soils have few, if any, rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods, and they are not frequently flooded during the growing season or are protected from flooding. Slopes range mainly from 0 to 6 percent.

Soils that have a zone high in the profile in which the soil moisture status is wet or soils that are subject to flooding may qualify as prime farmland where these limitations are overcome by drainage measures or flood control. Onsite evaluation is necessary to determine the effectiveness of corrective measures. More information about the criteria for prime farmland can be obtained at the local office of the Natural Resources Conservation Service.

A recent trend in land use has been the conversion of prime farmland to urban and industrial uses. The loss of prime farmland to other uses puts pressure on lands that are less productive than prime farmland.

About 207,851 acres, or nearly 46 percent of the survey area, meets the requirements for prime farmland.

The map units in the survey area that meet the requirements for prime farmland are listed in table 9. This list does not constitute a recommendation for a particular land use. On some soils included in the table, measures that overcome limitations are needed. The need for these measures is indicated in parentheses after the map unit name. The location of each map unit is shown on the soil maps. The soil qualities that affect use and management are described in the section "Soil Map Unit Descriptions."

Erosion Factors

Soil erodibility (K) and soil-loss tolerance (T) factors are used in an equation that predicts the amount of soil lost through water erosion in areas of cropland. The procedure for predicting soil loss is useful in guiding the selection of soil and water conservation practices. The erosion factors for the soils in the survey area are shown in table 18.

Soil Erodibility (K) Factor

The soil erodibility (K) factor indicates the susceptibility of a soil to sheet and rill erosion by

water. The soil properties that influence erodibility are those that affect the infiltration rate, the movement of water through the soil, and the water storage capacity of the soil and those that allow the soil to resist dispersion, splashing, abrasion, and the transporting forces of rainfall and runoff. The most important soil properties are the content of silt plus very fine sand, the content of sand coarser than very fine sand, the content of organic matter, soil structure, and permeability.

Fragment-Free Soil Erodibility (Kf) Factor

This is one of the factors used in the Revised Universal Soil Loss Equation. It shows the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Soil-Loss Tolerance (T) Factor

The soil-loss tolerance (T) factor is an estimate of the maximum annual rate of soil erosion that can occur over a sustained period without affecting crop productivity. The rate is expressed in tons of soil loss per acre per year. Ratings of 1 to 5 are used, depending on soil properties and prior erosion. The criteria used in assigning a T factor to a soil include maintenance of an adequate rooting depth for crop production, potential reduction of crop yields, maintenance of water-control structures affected by sedimentation, prevention of gullying, and the value of nutrients lost through erosion.

Wind Erodibility Groups

Wind erodibility is directly related to the percentage of dry, nonerodible surface soil aggregates larger than 0.84 millimeter in diameter. From this percentage, the wind erodibility index (I) factor is determined. This factor is an expression of the stability of the soil aggregates, or the extent to which they are broken down by tillage and the abrasion caused by windblown soil particles. Soils are assigned to wind erodibility groups (WEG) having similar percentages of dry soil aggregates larger than 0.84 millimeter. The wind erodibility groups and wind erodibility index factors for the soils in the survey area are listed in table 18.

Additional information about wind erodibility groups and K, Kf, T, and I factors can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service.

Windbreaks and Environmental Plantings

Windbreaks protect livestock, buildings, and yards from wind and snow. They also protect fruit trees and gardens, and they furnish habitat for wildlife. Several rows of low- and high-growing broadleaf and coniferous trees and shrubs provide the most protection.

Field windbreaks are narrow plantings made at right angles to the prevailing wind and at specific intervals across the field. The interval depends on the erodibility of the soil. Field windbreaks protect cropland and crops from wind, help to keep snow on the fields, and provide food and cover for wildlife.

Environmental plantings help to beautify and screen houses and other buildings and to abate noise. The plants, mostly evergreen shrubs and trees, are closely spaced. To ensure plant survival, a healthy planting stock of suitable species should be planted properly on a well prepared site and maintained in good condition.

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 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 this table are based on measurements and observation of established plantings that have been given adequate care. They can be used as a guide in planning windbreaks and screens. Additional information on planning windbreaks and screens and planting and caring for trees and shrubs can be obtained from local offices of the Natural Resources Conservation Service or the Cooperative Extension Service or from a nursery.

Windbreak Suitability Groups

Windbreak suitability groups consist of soils in which the kinds and degrees of the hazards and limitations that affect the survival and growth of trees and shrubs in windbreaks are about the same. The windbreak suitability groups assigned to the soils in the survey area are listed in table 11.

Group 1 consists of soils that are somewhat poorly drained or moderately well drained, are rapidly permeable to moderately slowly permeable, and do not have free carbonates in the upper 20 inches.

Group 1K consists of soils that are somewhat poorly drained or moderately well drained, are rapidly permeable to moderately slowly permeable, and have free carbonates within 20 inches of the surface. These soils may be very slightly saline or slightly saline (the electrical conductivity is 2 to 8).

Group 2 consists of poorly drained soils that have been artificially drained and do not have free carbonates in the upper 20 inches. Permeability varies.

Group 2H consists of very poorly drained soils that have been artificially drained and have more than 16 inches of organic material. Permeability varies.

Group 2K consists of poorly drained or very poorly drained soils that have been artificially drained and have free carbonates within 20 inches of the surface. Permeability varies. These soils may be very slightly saline or slightly saline (the electrical conductivity is 2 to 8).

Group 2W consists of very poorly drained soils that are subject to ponding and have been artificially drained. It includes soils that have an organic surface layer up to 16 inches thick. Permeability varies.

Group 3 consists of soils that are well drained or moderately well drained and are loamy or silty throughout. Permeability is moderate or moderately slow. These soils do not have free carbonates in the upper 20 inches.

Group 4 consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a silty or loamy surface layer and a clayey subsoil. Permeability is slow or very slow.

Group 4C consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a clayey surface layer and subsoil. Permeability is slow or very slow.

Group 4F consists of soils that are well drained, moderately well drained, or somewhat poorly drained and have a substratum of dense till. Permeability is slow or very slow.

Group 5 consists of soils that are excessively drained to moderately well drained and have a moderate available water capacity. These soils are dominantly fine sandy loam or sandy loam, but some are sandy in the upper part and loamy in the lower part.

Group 6D consists of excessively drained to moderately well drained, loamy soils that have bedrock at a depth of 20 to 40 inches. These soils have a low or moderate available water capacity.

Group 6G consists of excessively drained to moderately well drained soils that are loamy in the upper part and have sand or sand and gravel at a depth of 20 to 40 inches. These soils have a low or moderate available water capacity.

Group 7 consists of excessively drained to well drained soils that are dominantly loamy fine sand or coarser textured and are shallow to sand or to sand and gravel. These soils have a low available water capacity.

Group 8 consists of excessively drained to well drained, loamy soils that have free carbonates within 20 inches of the surface.

Group 9W consists of soils that are somewhat poorly drained, poorly drained, or very poorly drained and are moderately saline (the electrical conductivity is 8 to 16).

Group 10 consists of soils or miscellaneous areas that generally are not suitable for windbreaks. One or more characteristics, such as soil depth, texture, wetness, available water capacity, or slope, limit the planting, survival, or growth of trees and shrubs.

Recreation

The soils of the survey area are rated in tables 12a and 12b 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 the tables can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet; 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 zone in which the soil moisture status is wet, 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

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. If food, cover, or water is missing, inadequate, or inaccessible, wildlife will be scarce or will not inhabit the area.

If the soils have potential for habitat development, wildlife habitat can be created or improved by planting appropriate vegetation, properly managing the existing plant cover, and fostering the natural establishment of desirable plants.

In table 13, 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 used by wildlife. Examples are corn, soybeans, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes planted for wildlife food and cover. Examples are bromegrass, timothy, orchardgrass, clover, alfalfa, wheatgrass, and birdsfoot trefoil.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds, that provide food and cover for wildlife. Examples are bluestems, indiangrass, blueberry, goldenrod, lambsquarters, dandelions, blackberry, ragweed, wheatgrass, and nightshade.

The major soil properties affecting the growth of grain and forage crops and wild herbaceous plants are depth of the root zone, texture of the surface layer, the amount of water available to plants, wetness, salinity, and flooding. The length of the growing season also is important.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage that wildlife eat. Examples are oak, poplar, box elder, birch, maple, green ash, willow, and American elm.

Coniferous plants are cone-bearing trees, shrubs, or ground cover that provide habitat or supply food in the form of browse, seed, or fruit-like cones. Examples are pine, spruce, cedar, and tamarack.

The major soil properties affecting the growth of hardwood and coniferous trees and shrubs are depth of the root zone, the amount of water available to plants, and wetness.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Wetland plants produce food or cover for wetland wildlife. Examples of these plants are smartweeds, wild millet, rushes, sedges, bulrushes, wild rice, arrowhead, waterplantain, cattail, prairie cordgrass, bluejoint grass, asters, and beggarticks.

The major soil properties affecting wetland plants are texture of the surface layer, wetness, acidity or alkalinity, and slope.

Shallow water areas have an average depth of less than 5 feet. They are useful as habitat for some wildlife species. They are naturally wet areas or are created by dams, levees, or water-control measures in marshes or streams. Examples are waterfowl feeding areas, wildlife watering developments, beaver ponds, and other wildlife ponds.

The major soil properties affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability.

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, and shrubs. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. The wildlife attracted to these areas include ring-necked pheasant, meadowlark, field sparrow, killdeer, cottontail rabbit, and red fox.

Habitat for woodland wildlife consists of areas of hardwoods or conifers or a mixture of these and

associated grasses, legumes, and wild herbaceous plants. The wildlife attracted to this habitat 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, bogs, or flood plains that support water-tolerant plants. The wildlife attracted to this habitat include ducks, geese, herons, bitterns, rails, kingfishers, muskrat, otter, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, 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 zone in which the soil moisture status is wet, 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, linear extensibility, 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; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

The information in the tables, along with the soil maps, the soil descriptions, and other data provided in this survey, can be used to make additional interpretations.

Some of the terms used in this soil survey have a special meaning in soil science and are defined in the Glossary.

Building Site Development

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 14a and 14b 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, 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 a zone in which the soil moisture status is wet, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to a zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet; 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 zone in which the soil moisture status is wet, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Construction Materials

Tables 15a and 15b 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 15a, 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 table 15b, 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 zone in which the soil moisture status is wet, 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 zone in which the soil moisture status is wet, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a zone in which the soil moisture status is wet, 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

Table 16 gives information on the soil properties and site features that affect water management. The degree and kind of soil limitations are given for pond reservoir areas; embankments, dikes, and levees; and aquifer-fed excavated ponds. The 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 table 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 this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

The ratings do not indicate the ability of the natural soil to support an embankment. Soil properties to a depth even greater than the height of the embankment can affect performance and safety of the embankment. Generally, deeper onsite investigation is needed to determine these properties.

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A seasonal zone in which the soil moisture status is wet 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 zone in which the soil moisture status is wet. 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 zone in which the soil moisture status is wet, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

Table 3.--Temperature and Precipitation

(Recorded in the period 1961-90 at Buffalo, Minnesota)

Month	Temperature						Precipitation				
				2 years in 10 will have--				2 years in 10 will have--			
	Average daily maximum	Average daily minimum	Average	Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Average	Less than--	More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	20.6	0.9	10.7	46	-29	0	0.80	0.23	1.26	2	9.9
February---	27.2	7.1	17.2	51	-26	0	.77	.27	1.19	2	6.8
March------	39.7	20.3	30.0	69	-13	6	1.68	.93	2.34	4	10.4
April------	57.3	34.4	45.8	84	13	68	2.62	1.28	3.77	5	2.5
May--------	71.0	46.2	58.6	91	27	291	3.31	2.05	4.45	7	.1
June-------	80.0	55.9	67.9	96	39	537	4.24	2.09	6.11	7	.0
July-------	84.6	61.1	72.9	98	46	709	3.86	2.17	5.36	6	.0
August-----	81.8	58.5	70.1	96	43	622	3.68	2.22	4.99	6	.0
September--	71.8	49.3	60.5	91	29	326	3.12	1.83	4.27	6	.0
October----	59.8	38.1	49.0	83	19	101	2.39	.78	3.71	4	.4
November---	40.6	24.2	32.4	65	-5	5	1.57	.52	2.43	3	6.1
December---	24.8	8.4	16.6	48	-23	0	.97	.34	1.49	2	9.4
Yearly:											
Average---	54.9	33.7	44.3	---	---	---	---	---	---	---	---
Extreme---	105	-38	---	99	-30	---	---	---	---	---	---
Total-----	---	---	---	---	---	2,665	29.02	22.62	33.85	54	45.7

* 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 4.--Freeze Dates in Spring and Fall

(Recorded in the period 1961-90 at Buffalo, Minnesota)

Probability	Temperature		
	24 °F or lower	28 °F or lower	32 °F or lower
Last freezing temperature in spring:			
1 year in 10 later than--	Apr. 25	May 5	May 18
2 years in 10 later than--	Apr. 21	May 1	May 13
5 years in 10 later than--	Apr. 12	Apr. 23	May 3
First freezing temperature in fall:			
1 year in 10 earlier than--	Oct. 10	Sept. 27	Sept. 16
2 years in 10 earlier than--	Oct. 15	Oct. 2	Sept. 21
5 years in 10 earlier than--	Oct. 26	Oct. 11	Sept. 30

Table 5.--Growing Season

(Recorded in the period 1961-90 at Buffalo, Minnesota)

Probability	Daily minimum temperature during growing season		
	Higher than 24 °F	Higher than 28 °F	Higher than 32 °F
	Days	Days	Days
9 years in 10	176	152	128
8 years in 10	183	158	135
5 years in 10	197	171	150
2 years in 10	211	183	164
1 year in 10	219	189	171

Table 6.--Cropland Management Considerations

(See text for a description of the considerations listed in this table. Absence of an entry indicates that cropland management considerations are not applicable)

Map symbol and component name	Pct. of map unit	Cropland management considerations
7A:		
Hubbard	95	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
7B:		
Hubbard	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
7C:		
Hubbard	80	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
8B:		
Sparta	95	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Wind erosion
35:		
Blue Earth, depressional	80	High organic matter content Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
74B:		
Dickinson	95	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
86:		
Canisteo	80	Lime content Potential poor tilth and compaction Potential for ground-water contamination Wet soil moisture status Wind erosion
106C2:		
Lester, eroded	70	Potential for surface-water contamination Previously eroded Water erosion
106D2:		
Lester, eroded	80	Slope Potential for surface-water contamination Previously eroded Water erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
106E:		
Lester	80	Slope Potential for surface-water contamination Water erosion
109:		
Cordova	90	Potential poor tilth and compaction Potential for ground-water contamination Wet soil moisture status
114:		
Glencoe, depressional	90	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
138:		
Lerdal	80	Acid soil Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
158A:		
Zimmerman	90	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Wind erosion
158B:		
Zimmerman	90	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Wind erosion
158C:		
Zimmerman	90	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
158E:		
Zimmerman	85	Slope Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
169C:		
Braham	90	Excessive permeability Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
181:		
Litchfield	95	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
229:		
Waldorf	90	Potential poor tilth and compaction Potential for ground-water contamination Wet soil moisture status
231C:		
Lester	80	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
231D:		
Lester	80	Slope Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
235:		
Nessel	85	Potential for ground-water contamination
239:		
Le Sueur	80	Potential poor tilth and compaction Potential for ground-water contamination Wet soil moisture status
247:		
Linder	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status
255:		
Mayer	85	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
256:		
Mazaska	90	Potential poor tilth and compaction Potential for ground-water contamination Wet soil moisture status
258B:		
Sandberg	95	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
258C:		
Sandberg	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
258E:		
Sandberg	85	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
260:		
Duelm	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
261:		
Isan, depressional	90	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
286B:		
Shorewood	95	Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Water erosion Wet soil moisture status
294A:		
Rasset	90	Excessive permeability Potential for ground-water contamination Wind erosion
323:		
Shields	95	Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
327A:		
Dickman	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
327B:		
Dickman	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
375:		
Forada	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
392:		
Biscay	90	Excessive permeability Potential for ground-water contamination Wet soil moisture status
406:		
Dorset	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
414:		
Hamel	90	Potential for ground-water contamination Wet soil moisture status
441:		
Almora	90	Excessive permeability Potential for ground-water contamination
461B:		
Koronis	85	Potential for ground-water contamination Potential for surface-water contamination Water erosion
461C2:		
Koronis, eroded	80	Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion
461E:		
Koronis	80	Slope Potential for ground-water contamination Potential for surface-water contamination Water erosion
511:		
Marcellon, MAP <30	85	Potential for ground-water contamination Wet soil moisture status
523:		
Houghton, drained	80	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
525:		
Muskego, surface drained	75	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
539:		
Klossner, drained	80	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
540:		
Seelyeville, surface drained	80	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
543:		
Markey, surface drained	80	Excessive permeability High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
548:		
Medo, drained	80	Excessive permeability High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
603:		
Hanlon, occasionally flooded	80	Flooding Potential for ground-water contamination Potential for surface-water contamination Wind erosion
611D:		
Hawick	85	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion
708:		
Rushlake	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
740:		
Hamel	70	Potential for ground-water contamination Wet soil moisture status
Glencoe, depressional	20	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
768:		
Mosford	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
771:		
Elkriver, rarely flooded	85	Excessive permeability Potential for ground-water contamination Wind erosion
783C2:		
Lester, eroded	50	Potential for surface-water contamination Previously eroded Water erosion
Kilkenny, eroded	30	Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion
792:		
Fordum, frequently flooded	90	Flooding Excessive permeability Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
799:		
Seelyeville, frequently flooded	45	Flooding High organic matter content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
Bowstring, frequently flooded	45	Flooding High organic matter content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
804B:		
Koronis	50	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Sunburg	20	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Hawick	15	Excessive permeability Limited available water capacity Potential for ground-water contamination Water erosion Wind erosion
804C2:		
Koronis, eroded	45	Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
804C2:		
Sunburg	25	Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
Hawick	15	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
804D2:		
Koronis, eroded	40	Slope Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
Sunburg	30	Slope Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
Hawick	15	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
804E:		
Koronis	50	Slope Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Sunburg	20	Slope Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Hawick	15	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
807D2:		
Koronis, eroded	65	Slope Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
Sunburg	20	Slope Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
875B:		
Estherville	60	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Hawick	30	Excessive permeability Limited available water capacity Potential for ground-water contamination Water erosion Wind erosion
875C:		
Hawick	60	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Estherville	25	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
896B:		
Kingsley	70	Potential for surface-water contamination Water erosion Wind erosion
Gotham	25	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Wind erosion
896C:		
Kingsley	70	Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
896C:		
Gotham	25	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
945C2:		
Lester, eroded	50	Potential for surface-water contamination Previously eroded Water erosion
Storden, eroded	30	Lime content Limited organic matter content Potential for surface-water contamination Previously eroded Water erosion Wind erosion
945D2:		
Lester, eroded	60	Slope Potential for surface-water contamination Previously eroded Water erosion
Storden, eroded	20	Slope Lime content Limited organic matter content Potential for surface-water contamination Previously eroded Water erosion Wind erosion
956:		
Canisteo	65	Lime content Potential poor tilth and compaction Potential for ground-water contamination Wet soil moisture status Wind erosion
Glencoe, depressional	25	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
978:		
Cordova	60	Potential poor tilth and compaction Potential for ground-water contamination Wet soil moisture status
Rolfe, depressional	30	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1000:		
Arvilla, MAP >25	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1015. Udipsamments (cut and fill land)		
1016. Udorthents, loamy		
1023C:		
Lester, eroded	50	Potential for surface-water contamination Previously eroded Water erosion
Malardi	35	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
1023D:		
Lester, eroded	45	Slope Potential for surface-water contamination Previously eroded Water erosion
Malardi	40	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion Wind erosion
1026B:		
Lizzie, moderately wet	90	Potential for ground-water contamination Potential for surface-water contamination Water erosion
1027. Udorthents, wet substratum		
1030:		
Pits, gravel.		
Udipsamments.	20	
1035B:		
Crowfork	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
1035C:		
Crowfork	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1035D:		
Crowfork	85	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1036B:		
Angus	85	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1037:		
Eckvoll, MAP >25	90	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1038A:		
Verndale, acid substratum	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
1038B:		
Verndale, acid substratum	85	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1066B:		
Malardi	65	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Hawick	25	Excessive permeability Limited available water capacity Potential for ground-water contamination Water erosion Wind erosion
1066C:		
Malardi	60	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Hawick	25	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1066E:		
Malardi	55	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Hawick	30	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1072.		
Udorthents, shallow		
1075:		
Klossner, ponded	40	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Muskego, ponded	40	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1080:		
Klossner, ponded	30	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Okoboji, ponded	30	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Glencoe, ponded	30	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1087B:		
Angus	55	Potential for ground-water contamination Potential for surface-water contamination Water erosion
Malardi	30	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1094B:		
Angus	60	Potential for ground-water contamination Potential for surface-water contamination Water erosion
Cordova	30	Potential for ground-water contamination Wet soil moisture status
1099:		
Granby, very wet	85	Excessive permeability Limited available water capacity Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1110:		
Isan	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wet soil moisture status Wind erosion
1156:		
Cordova	85	Potential for ground-water contamination Wet soil moisture status
1161:		
Barry	85	Potential for ground-water contamination Wet soil moisture status
1163:		
Suckercreek, frequently flooded	85	Flooding Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1165:		
Lundlake, depressional	90	Ponding Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1173:		
Muskego, frequently flooded	45	Flooding High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Klossner, frequently flooded	45	Flooding High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1186:		
Forestcity	75	Potential for ground-water contamination Wet soil moisture status Wind erosion
Lundlake, depressional	20	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1196B:		
Lida	60	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Two Inlets	30	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Wind erosion
1196C:		
Lida	55	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Two Inlets	30	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1196E:		
Lida	50	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Two Inlets	40	Slope Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1197:		
Suckercreek, occasionally flooded	80	Flooding Lime content Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1199:		
Klossner, ponded	45	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Lundlake, ponded	45	Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1203:		
Muskego, ponded	30	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Blue Earth, ponded	30	High organic matter content Lime content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Houghton, ponded	30	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1204B:		
Reedslake	85	Potential for ground-water contamination Potential for surface-water contamination Water erosion
1207B:		
Reedslake	60	Potential for ground-water contamination Potential for surface-water contamination Water erosion
Le Sueur	25	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status
1213C:		
Cokato, eroded	65	Potential for surface-water contamination Previously eroded Water erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1213C:		
Storden	20	Lime content Limited organic matter content Potential for surface-water contamination Previously eroded Water erosion Wind erosion
1213D:		
Cokato, eroded	60	Slope Potential for surface-water contamination Previously eroded Water erosion
Storden	25	Slope Lime content Limited organic matter content Potential for surface-water contamination Previously eroded Water erosion Wind erosion
1220C:		
Cokato, eroded	50	Potential for surface-water contamination Previously eroded Water erosion
Storden	20	Lime content Limited organic matter content Potential for surface-water contamination Previously eroded Water erosion Wind erosion
Hawick	15	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion
1223:		
Sandberg, MAP <25	60	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Arvilla, MAP >25	30	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
1224:		
Hubbard	60	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Verndale, acid substratum	30	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1231:		
Hubbard	60	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
Mosford	30	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
1255:		
Elkriver, occasionally flooded	80	Flooding Excessive permeability Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status Wind erosion
1256:		
Cantlin	90	Acid soil Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Wind erosion
1257:		
Elkriver, rarely flooded	55	Excessive permeability Potential for ground-water contamination Potential for surface-water contamination Wind erosion
Mosford, rarely flooded	35	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1260B:		
Stonelake	55	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Wind erosion
Nebish, moderately wet	30	Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1260C:		
Stonelake	55	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1260C:		
Nebish	30	Limited organic matter content Potential for surface-water contamination Water erosion Wind erosion
1260E:		
Stonelake	60	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion
Nebish	25	Slope Potential for surface-water contamination Water erosion Wind erosion
1288:		
Seelyeville, ponded	45	High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Markey, ponded	45	Excessive permeability High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1356.		
Water, miscellaneous		
1362B:		
Angus	85	Potential for ground-water contamination Potential for surface-water contamination Water erosion
1368:		
Southhaven	90	Excessive permeability Potential for ground-water contamination
1377B:		
Dorset	70	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Two Inlets	20	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Wind erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1377C:		
Dorset	50	Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Two Inlets	35	Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1377D:		
Dorset	45	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Two Inlets	40	Slope Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1377E:		
Dorset	45	Slope Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
Two Inlets	45	Slope Excessive permeability Limited available water capacity Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Water erosion Wind erosion
1378:		
Fordum, occasionally flooded	85	Flooding Excessive permeability Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1379B:		
Dorset	65	Excessive permeability Limited available water capacity Potential for ground-water contamination Water erosion

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1379B:		
Almora	25	Excessive permeability Potential for ground-water contamination
1380A:		
Bygland, MAP >25	85	Potential for ground-water contamination
1380B:		
Bygland, MAP >25	70	Potential for ground-water contamination Potential for surface-water contamination Water erosion
1380C:		
Bygland, MAP >25	70	Limited organic matter content Potential for ground-water contamination Potential for surface-water contamination Previously eroded Water erosion
1381:		
Lindaas, morainic	80	Potential for ground-water contamination Wet soil moisture status
1383A:		
Shorewood, moderately wet	95	Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Restricted permeability Wet soil moisture status
1388B:		
Terril, moderately wet	85	Potential for ground-water contamination Potential for surface-water contamination Water erosion
1406:		
Medo, ponded	30	Excessive permeability High organic matter content Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Dassel, ponded	30	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Biscay, ponded	30	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1408B:		
Angus	45	Potential for ground-water contamination Potential for surface-water contamination Water erosion
Kilkenny	40	Potential poor tilth and compaction Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status

Table 6.--Cropland Management Considerations--Continued

Map symbol and component name	Pct. of map unit	Cropland management considerations
1438B:		
Braham, moderately wet	85	Excessive permeability Potential for ground-water contamination Potential for surface-water contamination Wind erosion
1443:		
Belleville	85	Excessive permeability Potential for ground-water contamination Wet soil moisture status Wind erosion
1901B:		
Angus	60	Potential for ground-water contamination Potential for surface-water contamination Water erosion
Le Sueur	30	Potential for ground-water contamination Potential for surface-water contamination Water erosion Wet soil moisture status
1931:		
Essexville	75	Excessive permeability Lime content Potential for ground-water contamination Wet soil moisture status Wind erosion
1942:		
Forada, depressional	85	Excessive permeability Ponding Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1946:		
Fordum, frequently flooded	70	Flooding Excessive permeability Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
Winterfield, frequently flooded	20	Flooding Excessive permeability Limited available water capacity Potential for ground-water contamination Potential for surface-water contamination Wet soil moisture status
1975:		
Oylen	90	Excessive permeability Limited available water capacity Potential for ground-water contamination Wind erosion
W.		
Water		

Table 7a.--Land Capability and Yields per Acre of Crops

(Yields in the "N" columns are for nonirrigated areas; those in the "I" columns are for irrigated areas. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Pct. of map unit	Land capability		Alfalfa hay		Corn		Soybeans	
		N	I	N	I	N	I	N	I
				Tons	Tons	Bu	Bu	Bu	Bu
7A---------- Hubbard	95	4s	4s	3.0	8.0	70	172	23	50
7B---------- Hubbard	90	4s	4s	3.0	8.0	70	172	23	50
7C---------- Hubbard	80	6s	6s	2.5	7.0	60	168	20	45
8B---------- Sparta	95	4s	---	3.0	---	75	172	23	---
35---------- Blue Earth, depressional	80	3w	---	---	---	135	---	38	---
74B---------- Dickinson	95	3e	---	3.4	---	115	---	33	---
86---------- Canisteo	80	2w	---	---	---	150	---	43	---
106C2---------- Lester, eroded	70	3e	---	4.0	---	135	---	42	---
106D2---------- Lester, eroded	80	4e	---	3.3	---	110	---	32	---
106E---------- Lester	80	6e	---	---	---	---	---	---	---
109---------- Cordova	90	2w	---	---	---	155	---	45	---
114---------- Glencoe, depressional	90	3w	---	---	---	138	---	43	---
138---------- Lerdal	80	2e	---	4.0	---	150	---	45	---
158A---------- Zimmerman	90	4s	4s	3.0	8.0	65	165	25	48
158B---------- Zimmerman	90	4s	4s	3.0	8.0	65	165	25	48
158C---------- Zimmerman	90	6s	6s	2.5	7.0	55	160	20	45
158E---------- Zimmerman	85	6s	---	---	---	---	---	---	---
169C---------- Braham	90	4e	---	3.0	---	80	---	28	---
181---------- Litchfield	95	3s	---	3.3	---	95	---	30	---

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability N	Land capability I	Alfalfa hay N	Alfalfa hay I	Corn N	Corn I	Soybeans N	Soybeans I
				Tons	Tons	Bu	Bu	Bu	Bu
229 Waldorf	90	2w	---	---	---	150	---	45	---
231C Lester	80	3e	---	4.0	---	135	---	42	---
231D Lester	80	4e	---	3.3	---	90	---	30	---
235 Nessel	85	1	---	4.6	---	155	---	48	---
239 Le Sueur	80	1	---	4.6	---	160	---	50	---
247 Linder	90	2s	---	3.8	---	120	---	33	---
255 Mayer	85	2w	---	---	---	115	---	33	---
256 Mazaska	90	2w	---	---	---	145	---	42	---
258B Sandberg	95	4s	---	3.0	---	60	172	23	50
258C Sandberg	90	6s	---	2.5	---	55	168	16	45
258E Sandberg	85	7s	---	---	---	---	---	---	---
260 Duelm	90	4s	---	---	---	65	---	24	---
261 Isan, depressional	90	6w	---	---	---	---	---	---	---
286B Shorewood	95	2e	---	4.4	---	140	---	40	---
294A Rasset	90	2s	---	3.2	---	115	---	30	---
323 Shields	95	2w	---	4.0	---	145	---	43	---
327A Dickman	85	3s	---	3.2	---	85	---	30	---
327B Dickman	85	3e	---	3.0	---	80	---	24	---
375 Forada	85	2w	---	---	---	115	---	35	---
392 Biscay	90	2w	---	---	---	120	---	35	---
406 Dorset	90	3s	---	3.2	---	90	---	30	---

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Alfalfa hay		Corn		Soybeans	
		N	I	N	I	N	I	N	I
				Tons	Tons	Bu	Bu	Bu	Bu
414---------- Hamel	90	2w	---	---	---	150	---	56	---
441---------- Almora	90	2s	---	4.0	---	120	---	37	---
461B---------- Koronis	85	2e	---	4.2	---	145	---	44	---
461C2---------- Koronis, eroded	80	3e	---	3.8	---	125	---	39	---
461E---------- Koronis	80	7e	---	---	---	---	---	---	---
511---------- Marcellon, MAP <30	85	1	---	4.5	---	145	---	40	---
523---------- Houghton, drained	80	3w	---	---	---	115	---	35	---
525---------- Muskego, surface drained	75	6w	---	---	---	---	---	---	---
539---------- Klossner, drained	80	3w	---	---	---	120	---	35	---
540---------- Seelyeville, surface drained	80	6w	---	---	---	---	---	---	---
543---------- Markey, surface drained	80	6w	---	---	---	---	---	---	---
548---------- Medo, drained	80	3w	---	---	---	125	---	35	---
603---------- Hanlon, occasionally flooded	80	2s	---	4.0	---	120	---	35	---
611D---------- Hawick	85	7s	---	---	---	---	---	---	---
708---------- Rushlake	85	4s	---	---	---	---	---	---	---
740----------				---	---	150	---	43	---
Hamel----------	70	2w	---						
Glencoe, depressional---	20	3w	---						
768---------- Mosford	85	3s	---	3.3	8.0	80	175	30	50
771---------- Elkriver, rarely flooded	85	2s	---	4.0	---	120	---	37	---
783C2----------				3.9	---	130	---	40	---
Lester, eroded----------	50	3e	---						
Kilkenny, eroded--------	30	3e	---						

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability N	Land capability I	Alfalfa hay N	Alfalfa hay I	Corn N	Corn I	Soybeans N	Soybeans I
				Tons	Tons	Bu	Bu	Bu	Bu
792---------- Fordum, frequently flooded	90	6w	---	---	---	---	---	---	---
799---------- Seelyeville, frequently flooded----------	45	6w	---	---	---	---	---	---	---
Bowstring, frequently flooded----------	45	6w	---						
804B---------- Koronis----------	50	2e	---	4.0	---	130	---	40	---
Sunburg----------	20	2e	---						
Hawick----------	15	4s	---						
804C2---------- Koronis, eroded---------	45	3e	---	3.6	---	115	---	36	---
Sunburg----------	25	3e	---						
Hawick----------	15	4s	---						
804D2---------- Koronis, eroded---------	40	4e	---	3.2	---	81	---	27	---
Sunburg----------	30	4e	---						
Hawick----------	15	6s	---						
804E---------- Koronis----------	50	7e	---	---	---	---	---	---	---
Sunburg----------	20	7e	---						
Hawick----------	15	7s	---						
807D2---------- Koronis, eroded---------	65	4e	---	3.3	---	85	---	28	---
Sunburg----------	20	4e	---						
875B---------- Estherville----------	60	3s	---	3.0	---	80	---	23	---
Hawick----------	30	4s	---						
875C---------- Hawick----------	60	4s	---	3.0	---	65	---	21	---
Estherville----------	25	4s	---						
896B---------- Kingsley----------	70	2e	---	3.8	---	115	---	33	---
Gotham----------	25	4s	---						
896C---------- Kingsley----------	70	3e	---	3.2	---	100	---	28	---
Gotham----------	25	6s	---						

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Alfalfa hay		Corn		Soybeans	
		N	I	N	I	N	I	N	I
				Tons	Tons	Bu	Bu	Bu	Bu
945C2				3.8	---	130	---	35	---
Lester, eroded	50	3e	---						
Storden, eroded	30	3e	---						
945D2				3.3	---	110	---	32	---
Lester, eroded	60	4e	---						
Storden, eroded	20	4e	---						
956				---	---	145	---	42	---
Canisteo	65	2w	---						
Glencoe, depressional	25	3w	---						
978				---	---	150	---	45	---
Cordova	60	2w	---						
Rolfe, depressional	30	3w	---						
1000	90	3s	3s	3.2	8.0	75	175	23	50
Arvilla, MAP >25									
1015. Udipsamments (cut and fill land)									
1016. Udorthents, loamy									
1023C				3.8	---	115	---	35	---
Lester, eroded	50	3e	---						
Malardi	35	4e	---						
1023D				3.0	---	100	---	30	---
Lester, eroded	45	4e	---						
Malardi	40	6e	---						
1026B	90	2e	---	4.3	---	150	---	45	---
Lizzie, moderately wet									
1027. Udorthents, wet substratum									
1030:									
Pits, gravel.									
Udipsamments.									
1035B	90	4s	---	3.0	---	90	---	25	---
Crowfork									
1035C	90	4s	---	2.8	---	75	---	22	---
Crowfork									
1035D	85	6s	---	2.5	---	65	---	16	---
Crowfork									
1036B	85	2e	---	4.5	---	150	---	45	---
Angus									

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability N	Land capability I	Alfalfa hay N	Alfalfa hay I	Corn N	Corn I	Soybeans N	Soybeans I
				Tons	Tons	Bu	Bu	Bu	Bu
1037 Eckvoll, MAP >25	90	3s	---	3.5	---	90	---	30	---
1038A Verndale, acid substratum	90	3s	---	3.2	8.0	85	175	30	50
1038B Verndale, acid substratum	85	3s	---	3.2	8.0	80	175	28	50
1066B				2.8	---	80	---	23	---
Malardi	65	3s	---						
Hawick	25	4s	---						
1066C				2.5	---	75	---	20	---
Malardi	60	4e	---						
Hawick	25	4s	---						
1066E				---	---	---	---	---	---
Malardi	55	7e	---						
Hawick	30	7e	---						
1072. Udorthents, shallow									
1075				---	---	---	---	---	---
Klossner, ponded	40	8w	---						
Muskego, ponded	40	8w	---						
1080				---	---	---	---	---	---
Klossner, ponded	30	8w	---						
Okoboji, ponded	30	8w	---						
Glencoe, ponded	30	8w	---						
1087B				3.5	---	125	---	38	---
Angus	55	2e	---						
Malardi	30	3s	---						
1094B				4.2	---	150	---	45	---
Angus	60	2e	---						
Cordova	30	2w	---						
1099 Granby, very wet	85	5w	---	---	---	---	---	---	---
1110 Isan	90	3w	---	---	---	60	---	20	---
1156 Cordova	85	2w	---	---	---	155	---	45	---
1161 Barry	85	2w	---	---	---	145	---	42	---

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Alfalfa hay		Corn		Soybeans	
		N	I	N	I	N	I	N	I
				Tons	Tons	Bu	Bu	Bu	Bu
1163 Suckercreek, frequently flooded	85	5w	---	---	---	---	---	---	---
1165 Lundlake, depressional	90	3w	---	---	---	138	---	43	---
1173				---	---	---	---	---	---
Muskego, frequently flooded	45	6w	---						
Klossner, frequently flooded	45	6w	---						
1186				---	---	140	---	40	---
Forestcity	75	2w	---						
Lundlake, depressional	20	3w	---						
1196B				3.2	---	75	---	27	---
Lida	60	3s	---						
Two Inlets	30	4s	---						
1196C				3.0	---	70	---	24	---
Lida	55	4e	---						
Two Inlets	30	4s	---						
1196E				---	---	---	---	---	---
Lida	50	7e	---						
Two Inlets	40	7s	---						
1197 Suckercreek, occasionally flooded	80	4w	---	---	---	120	---	35	---
1199				---	---	---	---	---	---
Klossner, ponded	45	8w	---						
Lundlake, ponded	45	8w	---						
1203				---	---	---	---	---	---
Muskego, ponded	30	8w	---						
Blue Earth, ponded	30	8w	---						
Houghton, ponded	30	8w	---						
1204B Reedslake	85	2e	---	4.6	---	155	---	48	---
1207B				4.6	---	155	---	48	---
Reedslake	60	2e	---						
Le Sueur	25	1	---						
1213C				3.8	---	130	---	35	---
Cokato, eroded	65	3e	---						
Storden	20	3e	---						

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability N	Land capability I	Alfalfa hay N	Alfalfa hay I	Corn N	Corn I	Soybeans N	Soybeans I
				Tons	Tons	Bu	Bu	Bu	Bu
1213D				3.3	---	110	---	32	---
Cokato, eroded	60	4e	---						
Storden	25	4e	---						
1220C				3.6	---	120	---	32	---
Cokato, eroded	50	3e	---						
Storden	20	3e	---						
Hawick	15	4s	---						
1223				3.0	8.0	60	172	23	50
Sandberg, MAP >25	60	4s	4s						
Arvilla, MAP >25	30	3s	3s						
1224				3.2	8.0	70	172	25	50
Hubbard	60	4s	4s						
Verndale, acid substratum	30	3s	---						
1231				3.2	8.0	75	172	25	50
Hubbard	60	4s	4s						
Mosford	30	3s	---						
1255	80	2w	---	3.9	---	115	---	35	---
Elkriver, occasionally flooded									
1256	90	4s	---	---	---	70	---	24	---
Cantlin									
1257				3.7	---	105	---	34	---
Elkriver, rarely flooded	55	2s	---						
Mosford, rarely flooded	35	3e	---						
1260B				3.0	---	85	---	24	---
Stonelake	55	4s	---						
Nebish, moderately wet	30	2e	---						
1260C				2.8	---	80	---	22	---
Stonelake	55	6s	---						
Nebish	30	3e	---						
1260E				---	---	---	---	---	---
Stonelake	60	7s	---						
Nebish	25	6e	---						
1288				---	---	---	---	---	---
Seelyeville, ponded	45	8w	---						
Markey, ponded	45	8w	---						
1356.									
Water, miscellaneous									

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Alfalfa hay		Corn		Soybeans	
		N	I	N	I	N	I	N	I
				Tons	Tons	Bu	Bu	Bu	Bu
1362B---------- Angus	85	2e	---	4.6	---	155	---	48	---
1368---------- Southhaven	90	1	---	3.5	---	150	---	45	---
1377B----------				3.2	---	80	---	28	---
Dorset----------	70	3s	---						
Two Inlets----------	20	4s	---						
1377C----------				3.0	---	65	---	25	---
Dorset----------	50	4e	---						
Two Inlets----------	35	4s	---						
1377D----------				2.5	---	50	---	16	---
Dorset----------	45	6e	---						
Two Inlets----------	40	6s	---						
1377E----------				---	---	---	---	---	---
Dorset----------	45	7e	---						
Two Inlets----------	45	7s	---						
1378---------- Fordum, occasionally flooded	85	4w	---	---	---	---	---	---	---
1379B----------				3.3	---	80	---	30	---
Dorset----------	65	3s	---						
Almora----------	25	2s	---						
1380A---------- Bygland, MAP >25	85	1	---	4.5	---	150	---	42	---
1380B---------- Bygland, MAP >25	70	2e	---	4.2	---	140	---	40	---
1380C---------- Bygland, MAP >25	70	3e	---	4.0	---	130	---	35	---
1381---------- Lindaas, morainic	80	2w	---	---	---	150	---	45	---
1383A---------- Shorewood, moderately wet	95	2w	---	---	---	150	---	45	---
1388B---------- Terril, moderately wet	85	2e	---	4.6	---	155	---	48	---
1406----------				---	---	---	---	---	---
Medo, ponded----------	30	8w	---						
Dassel, ponded----------	30	8w	---						
Biscay, ponded----------	30	8w	---						

Table 7a.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Alfalfa hay		Corn		Soybeans	
		N	I	N	I	N	I	N	I
				Tons	Tons	Bu	Bu	Bu	Bu
1408B				4.3	---	150	---	45	---
Angus	45	2e	---						
Kilkenny	40	2e	---						
1438B	85	3s	---	3.5	---	100	---	30	---
Braham, moderately wet									
1443	85	2w	---	---	---	---	---	---	---
Belleville									
1901B				4.6	---	155	---	48	---
Angus	60	2e	---						
Le Sueur	30	1	---						
1931	75	2w	---	---	---	90	---	30	---
Essexville									
1942	85	6w	---	---	---	---	---	---	---
Forada, depressional									
1946				---	---	---	---	---	---
Fordum, frequently flooded	70	6w	---						
Winterfield, frequently flooded	20	4w	---						
1975	90	3s	---	3.3	---	80	---	30	---
Oylen									
W.									
Water									

Table 7b.--Land Capability and Yields per Acre of Crops

(Yields in the "N" columns are for nonirrigated areas; those in the "I" columns are for irrigated areas. Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil)

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
7A Hubbard	95	4s	4s	55	---	---	400	35	---
7B Hubbard	90	4s	4s	50	---	---	400	35	---
7C Hubbard	80	6s	6s	48	---	---	380	30	---
8B Sparta	95	4s	---	50	---	---	---	37	---
35 Blue Earth, depressional	80	3w	---	70	---	---	---	48	---
74B Dickinson	95	3e	---	65	---	---	---	40	---
86 Canisteo	80	2w	---	85	---	---	---	50	---
106C2 Lester, eroded	70	3e	---	80	---	---	---	49	---
106D2 Lester, eroded	80	4e	---	65	---	---	---	38	---
106E Lester	80	6e	---	---	---	---	---	---	---
109 Cordova	90	2w	---	85	---	---	---	56	---
114 Glencoe, depressional	90	3w	---	83	---	---	---	45	---
138 Lerdal	80	2e	---	85	---	---	---	55	---
158A Zimmerman	90	4s	4s	57	---	---	400	38	---
158B Zimmerman	90	4s	4s	57	---	---	400	38	---
158C Zimmerman	90	6s	6s	50	---	---	---	32	---
158E Zimmerman	85	6s	---	---	---	---	---	---	---
169C Braham	90	4e	---	69	---	---	---	41	---
181 Litchfield	95	3s	---	60	---	---	---	40	---

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
229---------- Waldorf	90	2w	---	87	---	---	---	53	---
231C---------- Lester	80	3e	---	80	---	---	---	49	---
231D---------- Lester	80	4e	---	60	---	---	---	40	---
235---------- Nessel	85	1	---	90	---	---	---	55	---
239---------- Le Sueur	80	1	---	90	---	---	---	56	---
247---------- Linder	90	2s	---	72	---	---	---	45	---
255---------- Mayer	85	2w	---	65	---	---	---	45	---
256---------- Mazaska	90	2w	---	80	---	---	---	50	---
258B---------- Sandberg	95	4s	---	55	---	---	400	37	---
258C---------- Sandberg	90	6s	---	48	---	---	380	29	---
258E---------- Sandberg	85	7s	---	---	---	---	---	---	---
260---------- Duelm	90	4s	---	57	---	---	---	38	---
261---------- Isan, depressional	90	6w	---	---	---	---	---	---	---
286B---------- Shorewood	95	2e	---	80	---	---	---	50	---
294A---------- Rasset	90	2s	---	62	---	---	---	42	---
323---------- Shields	95	2w	---	80	---	---	---	50	---
327A---------- Dickman	85	3s	---	62	---	---	---	40	---
327B---------- Dickman	85	3e	---	52	---	---	---	35	---
375---------- Forada	85	2w	---	68	---	---	---	45	---
392---------- Biscay	90	2w	---	75	---	---	---	42	---
406---------- Dorset	90	3s	---	58	---	---	---	40	---

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
414---------- Hamel	90	2w	---	90	---	---	---	56	---
441---------- Almora	90	2s	---	74	---	---	---	50	---
461B---------- Koronis	85	2e	---	82	---	---	---	53	---
461C2---------- Koronis, eroded	80	3e	---	77	---	---	---	46	---
461E---------- Koronis	80	7e	---	---	---	---	---	---	---
511---------- Marcellon, MAP <30	85	1	---	80	---	---	---	48	---
523---------- Houghton, drained	80	3w	---	80	---	---	---	42	---
525---------- Muskego, surface drained	75	6w	---	---	---	---	---	---	---
539---------- Klossner, drained	80	3w	---	75	---	---	---	42	---
540---------- Seelyeville, surface drained	80	6w	---	---	---	---	---	---	---
543---------- Markey, surface drained	80	6w	---	---	---	---	---	---	---
548---------- Medo, drained	80	3w	---	80	---	---	---	42	---
603---------- Hanlon, occasionally flooded	80	2s	---	75	---	---	---	45	---
611D---------- Hawick	85	7s	---	---	---	---	---	---	---
708---------- Rushlake	85	4s	---	---	---	---	---	---	---
740----------				85	---	---	---	55	---
Hamel----------	70	2w	---						
Glencoe, depressional---	20	3w	---						
768---------- Mosford	85	3s	---	60	---	---	400	40	---
771---------- Elkriver, rarely flooded	85	2s	---	74	---	---	---	50	---
783C2----------				75	---	---	---	48	---
Lester, eroded----------	50	3e	---						
Kilkenny, eroded--------	30	3e	---						

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
792---------- Fordum, frequently flooded	90	6w	---	---	---	---	---	---	---
799---------- Seelyeville, frequently flooded----------	45	6w	---	---	---	---	---	---	---
Bowstring, frequently flooded----------	45	6w	---						
804B---------- Koronis----------	50	2e	---	80	---	---	---	49	---
Sunburg----------	20	2e	---						
Hawick----------	15	4s	---						
804C2---------- Koronis, eroded---------	45	3e	---	72	---	---	---	44	---
Sunburg----------	25	3e	---						
Hawick----------	15	4s	---						
804D2---------- Koronis, eroded---------	40	4e	---	55	---	---	---	37	---
Sunburg----------	30	4e	---						
Hawick----------	15	6s	---						
804E---------- Koronis----------	50	7e	---	---	---	---	---	---	---
Sunburg----------	20	7e	---						
Hawick----------	15	7s	---						
807D2---------- Koronis, eroded---------	65	4e	---	57	---	---	---	38	---
Sunburg----------	20	4e	---						
875B---------- Estherville----------	60	3s	---	52	---	---	---	38	---
Hawick----------	30	4s	---						
875C---------- Hawick----------	60	4s	---	50	---	---	---	36	---
Estherville----------	25	4s	---						
896B---------- Kingsley----------	70	2e	---	65	---	---	---	48	---
Gotham----------	25	4s	---						
896C---------- Kingsley----------	70	3e	---	62	---	---	---	45	---
Gotham----------	25	6s	---						

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
945C2				70	---	---	---	45	---
Lester, eroded	50	3e	---						
Storden, eroded	30	3e	---						
945D2				65	---	---	---	38	---
Lester, eroded	60	4e	---						
Storden, eroded	20	4e	---						
956				85	---	---	---	53	---
Canisteo	65	2w	---						
Glencoe, depressional	25	3w	---						
978				85	---	---	---	55	---
Cordova	60	2w	---						
Rolfe, depressional	30	3w	---						
1000	90	3s	3s	58	---	---	400	39	---
Arvilla, MAP >25									
1015. Udipsamments (cut and fill land)									
1016. Udorthents, loamy									
1023C				65	---	---	---	45	---
Lester, eroded	50	3e	---						
Malardi	35	4e	---						
1023D				60	---	---	---	40	---
Lester, eroded	45	4e	---						
Malardi	40	6e	---						
1026B	90	2e	---	80	---	---	---	55	---
Lizzie, moderately wet									
1027. Udorthents, wet substratum									
1030: Pits, gravel.									
Udipsamments.									
1035B	90	4s	---	52	---	---	---	40	---
Crowfork									
1035C	90	4s	---	45	---	---	---	38	---
Crowfork									
1035D	85	6s	---	40	---	---	---	35	---
Crowfork									
1036B	85	2e	---	85	---	---	---	52	---
Angus									

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
1037---------- Eckvoll, MAP >25	90	3s	---	77	---	---	---	48	---
1038A---------- Verndale, acid substratum	90	3s	---	60	---	---	400	40	---
1038B---------- Verndale, acid substratum	85	3s	---	60	---	---	400	40	---
1066B----------				52	---	---	---	38	---
Malardi----------	65	3s	---						
Hawick----------	25	4s	---						
1066C----------				50	---	---	---	35	---
Malardi----------	60	4e	---						
Hawick----------	25	4s	---						
1066E----------				---	---	---	---	---	---
Malardi----------	55	7e	---						
Hawick----------	30	7e	---						
1072. Udorthents, shallow									
1075----------				---	---	---	---	---	---
Klossner, ponded--------	40	8w	---						
Muskego, ponded---------	40	8w	---						
1080----------				---	---	---	---	---	---
Klossner, ponded--------	30	8w	---						
Okoboji, ponded---------	30	8w	---						
Glencoe, ponded---------	30	8w	---						
1087B----------				72	---	---	---	50	---
Angus----------	55	2e	---						
Malardi----------	30	3s	---						
1094B----------				85	---	---	---	52	---
Angus----------	60	2e	---						
Cordova----------	30	2w	---						
1099---------- Granby, very wet	85	5w	---	---	---	---	---	---	---
1110---------- Isan	90	3w	---	50	---	---	---	33	---
1156---------- Cordova	85	2w	---	85	---	---	---	56	---
1161---------- Barry	85	2w	---	82	---	---	---	55	---

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
1163 Suckercreek, frequently flooded	85	5w	---	---	---	---	---	---	---
1165 Lundlake, depressional	90	3w	---	83	---	---	---	50	---
1173				---	---	---	---	---	---
Muskego, frequently flooded	45	6w	---						
Klossner, frequently flooded	45	6w	---						
1186				80	---	---	---	48	---
Forestcity	75	2w	---						
Lundlake, depressional	20	3w	---						
1196B				60	---	---	---	40	---
Lida	60	3s	---						
Two Inlets	30	4s	---						
1196C				55	---	---	---	35	---
Lida	55	4e	---						
Two Inlets	30	4s	---						
1196E				---	---	---	---	---	---
Lida	50	7e	---						
Two Inlets	40	7s	---						
1197 Suckercreek, occasionally flooded	80	4w	---	75	---	---	---	---	---
1199				---	---	---	---	---	---
Klossner, ponded	45	8w	---						
Lundlake, ponded	45	8w	---						
1203				---	---	---	---	---	---
Muskego, ponded	30	8w	---						
Blue Earth, ponded	30	8w	---						
Houghton, ponded	30	8w	---						
1204B Reedslake	85	2e	---	90	---	---	---	52	---
1207B				90	---	---	---	52	---
Reedslake	60	2e	---						
Le Sueur	25	1	---						
1213C				70	---	---	---	45	---
Cokato, eroded	65	3e	---						
Storden	20	3e	---						

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability N	Land capability I	Oats N	Oats I	Irish potatoes N	Irish potatoes I	Spring wheat N	Spring wheat I
				Bu	Bu	Cwt	Cwt	Bu	Bu
1213D				65	---	---	---	38	---
Cokato, eroded	60	4e	---						
Storden	25	4e	---						
1220C				68	---	---	---	42	---
Cokato, eroded	50	3e	---						
Storden	20	3e	---						
Hawick	15	4s	---						
1223				55	---	---	400	37	---
Sandberg, MAP >25	60	4s	4s						
Arvilla, MAP >25	30	3s	3s						
1224				55	---	---	400	38	---
Hubbard	60	4s	4s						
Verndale, acid substratum	30	3s	---						
1231				58	---	---	400	38	---
Hubbard	60	4s	4s						
Mosford	30	3s	---						
1255	80	2w	---	71	---	---	---	48	---
Elkriver, occasionally flooded									
1256	90	4s	---	57	---	---	---	38	---
Cantlin									
1257				68	---	---	---	45	---
Elkriver, rarely flooded	55	2s	---						
Mosford, rarely flooded	35	3e	---						
1260B				60	---	---	---	40	---
Stonelake	55	4s	---						
Nebish, moderately wet	30	2e	---						
1260C				50	---	---	---	30	---
Stonelake	55	6s	---						
Nebish	30	3e	---						
1260E				---	---	---	---	---	---
Stonelake	60	7s	---						
Nebish	25	6e	---						
1288				---	---	---	---	---	---
Seelyeville, ponded	45	8w	---						
Markey, ponded	45	8w	---						
1356. Water, miscellaneous									

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
1362B---------- Angus	85	2e	---	90	---	---	---	52	---
1368---------- Southhaven	90	1	---	85	---	---	---	55	---
1377B----------				60	---	---	---	40	---
Dorset----------	70	3s	---						
Two Inlets----------	20	4s	---						
1377C----------				58	---	---	---	35	---
Dorset----------	50	4e	---						
Two Inlets----------	35	4s	---						
1377D----------				38	---	---	---	30	---
Dorset----------	45	6e	---						
Two Inlets----------	40	6s	---						
1377E----------				---	---	---	---	---	---
Dorset----------	45	7e	---						
Two Inlets----------	45	7s	---						
1378---------- Fordum, occasionally flooded	85	4w	---	---	---	---	---	---	---
1379B----------				60	---	---	---	40	---
Dorset----------	65	3s	---						
Almora----------	25	2s	---						
1380A---------- Bygland, MAP >25	85	1	---	80	---	---	---	55	---
1380B---------- Bygland, MAP >25	70	2e	---	75	---	---	---	52	---
1380C---------- Bygland, MAP >25	70	3e	---	72	---	---	---	45	---
1381---------- Lindaas, morainic	80	2w	---	87	---	---	---	53	---
1383A---------- Shorewood, moderately wet	95	2w	---	87	---	---	---	53	---
1388B---------- Terril, moderately wet	85	2e	---	90	---	---	---	56	---
1406----------				---	---	---	---	---	---
Medo, ponded----------	30	8w	---						
Dassel, ponded----------	30	8w	---						
Biscay, ponded----------	30	8w	---						

Table 7b.--Land Capability and Yields per Acre of Crops--Continued

Map symbol and soil name	Pct. of map unit	Land capability		Oats		Irish potatoes		Spring wheat	
		N	I	N	I	N	I	N	I
				Bu	Bu	Cwt	Cwt	Bu	Bu
1408B				85	---	---	---	52	---
Angus	45	2e	---						
Kilkenny	40	2e	---						
1438B	85	3s	---	70	---	---	---	45	---
Braham, moderately wet									
1443	85	2w	---	---	---	---	---	---	---
Belleville									
1901B				90	---	---	---	56	---
Angus	60	2e	---						
Le Sueur	30	1	---						
1931	75	2w	---	70	---	---	---	42	---
Essexville									
1942	85	6w	---	---	---	---	---	---	---
Forada, depressional									
1946				---	---	---	---	---	---
Fordum, frequently flooded	70	6w	---						
Winterfield, frequently flooded	20	4w	---						
1975	90	3s	---	60	---	---	---	40	---
Oylen									
W.									
Water									

Table 8.--Forage Suitability Groups

(Only the soils assigned to forage suitability groups are listed)

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
7A:			
Hubbard	95	091	22
7B:			
Hubbard	90	091	22
7C:			
Hubbard	80	091	22
8B:			
Sparta	95	103	22
35:			
Blue Earth, depressional	80	103	13
74B:			
Dickinson	95	103	7
86:			
Canisteo	80	103	9
106C2:			
Lester, eroded	70	103	6
106D2:			
Lester, eroded	80	103	23
106E:			
Lester	80	103	17
109:			
Cordova	90	103	1
114:			
Glencoe, depressional	90	103	13
138:			
Lerdal	80	103	6
158A:			
Zimmerman	90	091	22
158B:			
Zimmerman	90	091	22
158C:			
Zimmerman	90	091	22
158E:			
Zimmerman	85	091	18
169C:			
Braham	90	091	6
181:			
Litchfield	95	103	5

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
229:			
Waldorf	90	103	1
231C:			
Lester	80	103	6
231D:			
Lester	80	103	23
235:			
Nessel	85	103	6
239:			
Le Sueur	80	103	6
247:			
Linder	90	103	2
255:			
Mayer	85	103	9
256:			
Mazaska	90	103	5
258B:			
Sandberg	95	091	22
258C:			
Sandberg	90	091	22
258E:			
Sandberg	85	091	24
260:			
Duelm	90	091	8
261:			
Isan, depressional	90	091	24
286B:			
Shorewood	95	103	2
294A:			
Rasset	90	103	6
323:			
Shields	95	103	5
327A:			
Dickman	85	103	22
327B:			
Dickman	85	103	22
375:			
Forada	85	091	5
392:			
Biscay	90	103	1
406:			
Dorset	90	091	22

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
414:			
Hamel	90	103	1
441:			
Almora	90	091	6
461B:			
Koronis	85	103	6
461C2:			
Koronis, eroded	80	103	6
461E:			
Koronis	80	103	24
511:			
Marcellon, MAP <30	85	103	6
523:			
Houghton, drained	80	103	14
525:			
Muskego, surface drained	75	103	24
539:			
Klossner, drained	80	103	14
540:			
Seelyeville, surface drained	80	091	24
543:			
Markey, surface drained	80	091	24
548:			
Medo, drained	80	103	14
603:			
Hanlon, occasionally flooded	80	103	2
611D:			
Hawick	85	103	22
708:			
Rushlake	85	091	3
740:			
Hamel	70	103	1
Glencoe, depressional	20	103	13
768:			
Mosford	85	091	22
771:			
Elkriver, rarely flooded	85	091	6

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
783C2:			
Lester, eroded	50	103	6
Kilkenny, eroded	30	103	6
792:			
Fordum, frequently flooded	90	091	16
799:			
Seelyeville, frequently flooded	45	091	24
Bowstring, frequently flooded	45	091	24
804B:			
Koronis	50	103	6
Sunburg	20	103	10
Hawick	15	103	22
804C2:			
Koronis, eroded	45	103	6
Sunburg	25	103	10
Hawick	15	103	22
804D2:			
Koronis, eroded	40	103	23
Sunburg	30	103	23
Hawick	15	103	22
804E:			
Koronis	50	103	24
Sunburg	20	103	24
Hawick	15	103	24
807D2:			
Koronis, eroded	65	103	23
Sunburg	20	103	23
875B:			
Estherville	60	103	22
Hawick	30	103	22
875C:			
Hawick	60	103	22
Estherville	25	103	22
896B:			
Kingsley	70	103	6
Gotham	25	103	22

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
896C:			
Kingsley	70	103	6
Gotham	25	103	22
945C2:			
Lester, eroded	50	103	6
Storden, eroded	30	103	10
945D2:			
Lester, eroded	60	103	23
Storden, eroded	20	103	23
956:			
Canisteo	65	103	9
Glencoe, depressional	25	103	13
978:			
Cordova	60	103	1
Rolfe, depressional	30	103	13
1000:			
Arvilla, MAP >25	90	091	22
1023C:			
Lester, eroded	50	103	6
Malardi	35	103	22
1023D:			
Lester, eroded	45	103	23
Malardi	40	103	22
1026B:			
Lizzie, moderately wet	90	091	6
1035B:			
Crowfork	90	103	22
1035C:			
Crowfork	90	103	22
1035D:			
Crowfork	85	103	22
1036B:			
Angus	85	103	6
1037:			
Eckvoll, MAP >25	90	091	2
1038A:			
Verndale, acid substratum	90	091	22
1038B:			
Verndale, acid substratum	85	091	22

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
1066B:			
Malardi	65	103	22
Hawick	25	103	22
1066C:			
Malardi	60	103	22
Hawick	25	103	22
1066E:			
Malardi	55	103	24
Hawick	30	103	24
1075:			
Klossner, ponded	40	103	24
Muskego, ponded	40	103	24
1080:			
Klossner, ponded	30	103	24
Okoboji, ponded	30	103	24
Glencoe, ponded	30	103	24
1087B:			
Angus	55	103	6
Malardi	30	103	22
1094B:			
Angus	60	103	6
Cordova	30	103	1
1099:			
Granby, very wet	85	103	24
1110:			
Isan	90	091	7
1156:			
Cordova	85	103	1
1161:			
Barry	85	103	1
1163:			
Suckercreek, frequently flooded	85	103	16
1165:			
Lundlake, depressional	90	103	13
1173:			
Muskego, frequently flooded	45	103	24
Klossner, frequently flooded	45	103	24

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
1186:			
Forestcity	75	103	5
Lundlake, depressional	20	103	13
1196B:			
Lida	60	091	22
Two Inlets	30	091	22
1196C:			
Lida	55	091	22
Two Inlets	30	091	22
1196E:			
Lida	50	091	24
Two Inlets	40	091	24
1197:			
Suckercreek, occasionally flooded	80	103	9
1199:			
Klossner, ponded	45	103	24
Lundlake, ponded	45	103	24
1203:			
Muskego, ponded	30	103	24
Blue Earth, ponded	30	103	24
Houghton, ponded	30	103	24
1204B:			
Reedslake	85	103	2
1207B:			
Reedslake	60	103	2
Le Sueur	25	103	6
1213C:			
Cokato, eroded	65	103	2
Storden	20	103	10
1213D:			
Cokato, eroded	60	103	23
Storden	25	103	23
1220C:			
Cokato, eroded	50	103	2
Storden	20	103	10
Hawick	15	103	22

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
1223:			
Sandberg, MAP >25	60	091	22
Arvilla, MAP >25	30	091	22
1224:			
Hubbard	60	091	22
Verndale, acid substratum	30	091	22
1231:			
Hubbard	60	091	22
Mosford	30	091	22
1255:			
Elkriver, occasionally flooded	80	091	5
1256:			
Cantlin	90	091	8
1257:			
Elkriver, rarely flooded	55	091	6
Mosford, rarely flooded	35	091	22
1260B:			
Stonelake	55	091	22
Nebish, moderately wet	30	091	6
1260C:			
Stonelake	55	091	22
Nebish	30	091	6
1260E:			
Stonelake	60	091	22
Nebish	25	091	17
1288:			
Seelyeville, ponded	45	091	24
Markey, ponded	45	091	24
1362B:			
Angus	85	103	6
1368:			
Southhaven	90	091	6
1377B:			
Dorset	70	091	22
Two Inlets	20	091	22

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
1377C:			
Dorset	50	091	22
Two Inlets	35	091	22
1377D:			
Dorset	45	091	22
Two Inlets	40	091	22
1377E:			
Dorset	45	091	24
Two Inlets	45	091	24
1378:			
Fordum, occasionally flooded	85	091	5
1379B:			
Dorset	65	091	22
Almora	25	091	6
1380A:			
Bygland, MAP >25	85	091	2
1380B:			
Bygland, MAP >25	70	091	2
1380C:			
Bygland, MAP >25	70	091	2
1381:			
Lindaas, morainic	80	091	1
1383A:			
Shorewood, moderately wet	95	103	2
1388B:			
Terril, moderately wet	85	103	2
1406:			
Medo, ponded	30	103	24
Dassel, ponded	30	103	24
Biscay, ponded	30	103	24
1408B:			
Angus	45	103	6
Kilkenny	40	103	6
1438B:			
Braham, moderately wet	85	091	6
1443:			
Belleville	85	103	1

Table 8.--Forage Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	MLRA	Forage suitability group
1901B:			
Angus	60	103	6
Le Sueur	30	103	6
1931:			
Essexville	75	103	9
1942:			
Forada, depressional	85	091	24
1946:			
Fordum, frequently flooded	70	091	16
Winterfield, frequently flooded	20	091	7
1975:			
Oylen	90	091	8

Table 9.--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
74B	Dickinson fine sandy loam, 1 to 6 percent slopes
86	Canisteo clay loam, moderately fine substratum, 0 to 2 percent slopes (where drained)
109	Cordova clay loam, 0 to 2 percent slopes (where drained)
114	Glencoe clay loam, depressional, 0 to 1 percent slopes (where drained)
138	Lerdal silty clay loam, 1 to 3 percent slopes
229	Waldorf silty clay loam, 0 to 2 percent slopes (where drained)
235	Nessel loam, 1 to 3 percent slopes
239	Le Sueur clay loam, 1 to 3 percent slopes
247	Linder loam, 0 to 2 percent slopes
255	Mayer loam, 0 to 2 percent slopes (where drained)
256	Mazaska silty clay loam, 0 to 2 percent slopes (where drained)
286B	Shorewood silty clay loam, 3 to 6 percent slopes
294A	Rasset sandy loam, 0 to 2 percent slopes
323	Shields silty clay loam, 0 to 3 percent slopes (where drained)
375	Forada loam, 0 to 2 percent slopes (where drained)
392	Biscay loam, 0 to 2 percent slopes (where drained)
414	Hamel loam, 1 to 3 percent slopes (where drained)
441	Almora loam, 0 to 2 percent slopes
461B	Koronis loam, 2 to 6 percent slopes
511	Marcellon loam, MAP <30, 0 to 3 percent slopes
603	Hanlon fine sandy loam, 0 to 2 percent slopes, occasionally flooded
740	Hamel-Glencoe, depressional, complex, 0 to 3 percent slopes (where drained)
771	Elkriver fine sandy loam, 0 to 2 percent slopes, rarely flooded
804B	Koronis-Sunburg-Hawick complex, 2 to 6 percent slopes
956	Canisteo-Glencoe, depressional, complex, 0 to 2 percent slopes (where drained)
978	Cordova-Rolfe, depressional, complex, 0 to 2 percent slopes (where drained)
1026B	Lizzie silt loam, moderately wet, 1 to 5 percent slopes
1036B	Angus fine sandy loam, 2 to 5 percent slopes
1094B	Angus-Cordova complex, 0 to 5 percent slopes
1156	Cordova loam, 0 to 2 percent slopes (where drained)
1161	Barry loam, 0 to 2 percent slopes (where drained)
1165	Lundlake silty clay loam, depressional, 0 to 1 percent slopes (where drained)
1186	Forestcity-Lundlake, depressional, complex, 0 to 3 percent slopes (where drained)
1197	Suckercreek fine sandy loam, 0 to 2 percent slopes, occasionally flooded (where protected from flooding or not frequently flooded during the growing season)
1204B	Reedslake loam, 2 to 5 percent slopes
1207B	Reedslake-Le Sueur complex, 1 to 5 percent slopes
1255	Elkriver fine sandy loam, 0 to 2 percent slopes, occasionally flooded (where protected from flooding or not frequently flooded during the growing season)
1362B	Angus loam, 2 to 5 percent slopes
1368	Southhaven loam, 0 to 2 percent slopes
1380A	Bygland silt loam, MAP >25, 0 to 2 percent slopes
1380B	Bygland silt loam, MAP >25, 2 to 6 percent slopes
1381	Lindaas silt loam, morainic, 0 to 2 percent slopes (where drained)
1383A	Shorewood silty clay loam, moderately wet, 0 to 3 percent slopes
1388B	Terril loam, moderately wet, 2 to 6 percent slopes
1408B	Angus-Kilkenny complex, 2 to 6 percent slopes
1901B	Angus-Le Sueur complex, 1 to 5 percent slopes

Table 10.--Windbreaks and Environmental Plantings

(Only the soils suitable for windbreaks and environmental plantings are listed. Absence of an entry indicates that trees generally do not grow to the given height)

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
7A:						
Hubbard	95	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
7B:						
Hubbard	90	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
7C:						
Hubbard	80	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
8B:						
Sparta	95	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
35:						
Blue Earth, depressional	80	Redosier dogwood	Gray dogwood, silky dogwood	Northern whitecedar, black ash, tall purple willow	Black willow, golden willow, white willow	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
74B:						
Dickinson	95	Hedge cotoneaster	American cranberrybush, American plum, common chokecherry, common lilac, silver buffaloberry, eastern redcedar	Black Hills spruce, blue spruce, ponderosa pine, Amur maple, common hackberry, white spruce	Eastern white pine, green ash	Silver maple, eastern cottonwood
86:						
Canisteo	80	Redosier dogwood	Gray dogwood, silky dogwood	Northern whitecedar, black ash, tall purple willow	Black willow, golden willow, white willow	Eastern cottonwood
106C2:						
Lester, eroded	70	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
106D2:						
Lester, eroded	80	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
106E:						
Lester	80	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
109:						
Cordova	90	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
114:						
Glencoe, depressional	90	Redosier dogwood	Silky dogwood	Green ash, northern whitecedar	Golden willow	Eastern cottonwood
138:						
Lerdal	80	Hedge cotoneaster	American cranberrybush, Siberian peashrub, common chokecherry, common lilac, cotoneaster, American plum, silver buffaloberry	Black Hills spruce, Siberian crabapple, eastern redcedar, white spruce, Amur maple, Austrian pine, ponderosa pine, common hackberry, eastern white pine, red pine	Green ash, jack pine	Silver maple, eastern cottonwood
158A:						
Zimmerman	90	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
158B:						
Zimmerman	90	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
158C:						
Zimmerman	90	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
158E:						
Zimmerman	85	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
169C:						
Braham	90	Nanking cherry, western sandcherry	Siberian peashrub, Amur maple, Harbin pear, common chokecherry, eastern redcedar	Black Hills spruce, Manchurian crabapple, blue spruce, bur oak, white spruce, common hackberry, northern red oak, red pine	Green ash, eastern white pine, Siberian elm	Silver maple, Siouxland cottonwood, eastern cottonwood
181:						
Litchfield	95	---	Nanking cherry, Siberian peashrub, common chokecherry, redosier dogwood, sargent crabapple, silver buffaloberry, American plum, common lilac	Black Hills spruce, Norway spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry, red pine	American basswood, Austrian pine, eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
229:						
Waldorf	90	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
231C:						
Lester	80	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
231D:						
Lester	80	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
235:						
Nessel	85	---	American cranberrybush, Nanking cherry, common chokecherry, redosier dogwood, sargent crabapple, American plum, common lilac	Black Hills spruce, blue spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry	Eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
239:						
Le Sueur	80	---	American cranberrybush, Nanking cherry, common chokecherry, redosier dogwood, sargent crabapple, American plum, common lilac	Black Hills spruce, blue spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry	Eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
247:						
Linder	90	---	American cranberrybush, Nanking cherry, common chokecherry, redosier dogwood, sargent crabapple, American plum, common lilac	Black Hills spruce, blue spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry	Eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
255:						
Mayer	85	Redosier dogwood	Common chokecherry, common lilac, American plum, silver buffaloberry	Black Hills spruce, eastern redcedar, blue spruce, white spruce, common hackberry, ponderosa pine	Green ash	Golden willow, eastern cottonwood, Siouxland cottonwood
256:						
Mazaska	90	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
258B:						
Sandberg	95	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
258C:						
Sandberg	90	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
258E:						
Sandberg	85	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
260:						
Duelm	90	Peking cotoneaster, western sandcherry	Nanking cherry, Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Amur maple, Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood
286B:						
Shorewood	95	Hedge cotoneaster	American cranberrybush, Siberian peashrub, common chokecherry, common lilac, cotoneaster, American plum, silver buffaloberry	Black Hills spruce, Siberian crabapple, eastern redcedar, white spruce, Amur maple, Austrian pine, ponderosa pine, common hackberry, eastern white pine, red pine	Green ash, jack pine	Silver maple, eastern cottonwood
294A:						
Rasset	90	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, ponderosa pine, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
323:						
Shields	95	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
327A:						
Dickman	85	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
327B:						
Dickman	85	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
375:						
Forada	85	Nanking cherry	American cranberrybush, Siberian peashrub, common lilac, cotoneaster, redosier dogwood, sargent crabapple, American plum, common chokecherry, eastern redcedar, silver buffaloberry	Amur maple, Black Hills spruce, blue spruce, Austrian pine, Manchurian crabapple, Siberian crabapple, white spruce, Russian-olive, common hackberry	Norway spruce, green ash, red pine, golden willow	Silver maple, eastern cottonwood, Siouxland cottonwood, Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
392:						
Biscay	90	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
406:						
Dorset	90	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
414:						
Hamel	90	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
441:						
Almora	90	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
461B:						
Koronis	85	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
461C2:						
Koronis, eroded	80	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
461E:						
Koronis	80	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
511:						
Marcellon, MAP <30	85	---	American cranberrybush, Nanking cherry, common chokecherry, redosier dogwood, sargent crabapple, American plum, common lilac	Black Hills spruce, blue spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry	Eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
523:						
Houghton, drained	80	---	Redosier dogwood, silky dogwood	Black ash	Golden willow	---
539:						
Klossner, drained	80	---	Redosier dogwood, silky dogwood	Black ash	Golden willow	---
548:						
Medo, drained	80	---	Redosier dogwood, silky dogwood	Black ash	Golden willow	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
603:						
Hanlon, occasionally flooded	80	---	American cranberrybush, Nanking cherry, common chokecherry, redosier dogwood, sargent crabapple, American plum, common lilac	Black Hills spruce, blue spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry	Eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
611D:						
Hawick	85	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
708:						
Rushlake	85	Nanking cherry, western sandcherry	Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Amur maple, Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood
740:						
Hamel	70	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
Glencoe, depressional	20	Redosier dogwood	Silky dogwood	Green ash, northern whitecedar	Golden willow	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
768:						
Mosford	85	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
771:						
Elkriver, rarely flooded	85	Peking cotoneaster, western sandcherry	Nanking cherry, Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Amur maple, Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood
783C2:						
Lester, eroded	50	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Kilkenny, eroded	30	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
804B:						
Koronis	50	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Sunburg	20	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
Hawick	15	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
804C2:						
Koronis, eroded	45	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Sunburg	25	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
Hawick	15	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
804D2:						
Koronis, eroded	40	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Sunburg	30	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
Hawick	15	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
804E:						
Koronis	50	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Sunburg	20	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
Hawick	15	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
807D2:						
Koronis, eroded	65	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Sunburg	20	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
875B:						
Estherville	60	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
Hawick	30	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
875C:						
Hawick	60	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
875C:						
Estherville	25	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
896B:						
Kingsley	70	Hedge cotoneaster	American cranberrybush, American plum, common chokecherry, common lilac, silver buffaloberry, eastern redcedar	Black Hills spruce, blue spruce, ponderosa pine, Amur maple, common hackberry, white spruce	Eastern white pine, green ash	Silver maple, eastern cottonwood
Gotham	25	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
896C:						
Kingsley	70	Hedge cotoneaster	American cranberrybush, American plum, common chokecherry, common lilac, silver buffaloberry, eastern redcedar	Black Hills spruce, blue spruce, ponderosa pine, Amur maple, common hackberry, white spruce	Eastern white pine, green ash	Silver maple, eastern cottonwood
Gotham	25	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
945C2:						
Lester, eroded----------	50	Nanking cherry------	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash----------	Silver maple, eastern cottonwood, Siouxland cottonwood
Storden, eroded---------	30	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
945D2:						
Lester, eroded----------	60	Nanking cherry------	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash----------	Silver maple, eastern cottonwood, Siouxland cottonwood
Storden, eroded---------	20	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
956:						
Canisteo----------	65	Redosier dogwood----	Gray dogwood, silky dogwood	Northern whitecedar, black ash, tall purple willow	Black willow, golden willow, white willow	Eastern cottonwood
Glencoe, depressional---	25	Redosier dogwood----	Silky dogwood-------	Green ash, northern whitecedar	Golden willow-------	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
978:						
Cordova	60	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
Rolfe, depressional	30	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
1000:						
Arvilla, MAP >25	90	Nanking cherry, western sandcherry	Siberian peashrub, Amur maple, Harbin pear, Manchurian crabapple, bur oak, common chokecherry, eastern redcedar, northern red oak	Black Hills spruce, blue spruce, eastern white pine, red pine, Siberian elm	Green ash, silver maple, Siouxland cottonwood	Eastern cottonwood
1023C:						
Lester, eroded	50	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Malardi	35	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, ponderosa pine, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1023D:						
Lester, eroded	45	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Malardi	40	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, ponderosa pine, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
1026B:						
Lizzie, moderately wet	90	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
1035B:						
Crowfork	90	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
1035C:						
Crowfork	90	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1035D:						
Crowfork	85	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
1036B:						
Angus	85	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
1037:						
Eckvoll, MAP >25	90	Nanking cherry, western sandcherry	Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Amur maple, Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood
1038A:						
Verndale, acid substratum	90	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
1038B:						
Verndale, acid substratum	85	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1066B:						
Malardi	65	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, ponderosa pine, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Hawick	25	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
1066C:						
Malardi	60	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, ponderosa pine, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Hawick	25	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
1066E:						
Malardi	55	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, ponderosa pine, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1066E:						
Hawick	30	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---
1087B:						
Angus	55	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Malardi	30	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, ponderosa pine, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
1094B:						
Angus	60	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Cordova	30	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1110:						
Isan	90	Nanking cherry, western sandcherry	Siberian peashrub, Harbin pear, common chokecherry, eastern redcedar	Amur maple, Black Hills spruce, Manchurian crabapple, blue spruce, white spruce, common hackberry	Eastern white pine, green ash, red pine, Siberian elm	Silver maple, eastern cottonwood, Siouxland cottonwood
1156:						
Cordova	85	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
1161:						
Barry	85	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
1165:						
Lundlake, depressional	90	Redosier dogwood	Silky dogwood	Green ash, northern whitecedar	Golden willow	Eastern cottonwood
1186:						
Forestcity	75	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
Lundlake, depressional	20	Redosier dogwood	Silky dogwood	Green ash, northern whitecedar	Golden willow	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1196B:						
Lida	60	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Two Inlets	30	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
1196C:						
Lida	55	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1196C:						
Two Inlets	30	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
1196E:						
Lida	50	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Two Inlets	40	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1204B:						
Reedslake	85	---	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, Siberian peashrub, common lilac	Black Hills spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine, red pine	Green ash, honeylocust, jack pine	Silver maple, eastern cottonwood, quaking aspen, Siouxland cottonwood, Carolina poplar
1207B:						
Reedslake	60	---	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, Siberian peashrub, common lilac	Black Hills spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine, red pine	Green ash, honeylocust, jack pine	Silver maple, eastern cottonwood, quaking aspen, Siouxland cottonwood, Carolina poplar
Le Sueur	25	---	American cranberrybush, Nanking cherry, common chokecherry, redosier dogwood, sargent crabapple, American plum, common lilac	Black Hills spruce, blue spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry	Eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
1213C:						
Cokato, eroded	65	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1213C:						
Storden	20	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
1213D:						
Cokato, eroded	60	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Storden	25	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
1220C:						
Cokato, eroded	50	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
Storden	20	American plum, common lilac	Siberian peashrub, Black Hills spruce, common hackberry, eastern redcedar	Green ash, ponderosa pine, honeylocust	Eastern cottonwood	---
Hawick	15	---	American plum, common chokecherry, common lilac, sargent crabapple, silver buffaloberry	Black Hills spruce, eastern redcedar, ponderosa pine, white spruce, Austrian pine, green ash, silver maple	Eastern white pine, Scotch pine, eastern cottonwood	---

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1223:						
Sandberg, MAP >25	60	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
Arvilla, MAP >25	30	Nanking cherry, western sandcherry	Amur maple, Harbin pear, Manchurian crabapple, Siberian peashrub, bur oak, common chokecherry, eastern redcedar, northern red oak	Black Hills spruce, blue spruce, eastern white pine, red pine, Siberian elm	Green ash, silver maple, Siouxland cottonwood	Eastern cottonwood
1224:						
Hubbard	60	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
Verndale, acid substratum	30	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1231:						
Hubbard	60	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
Mosford	30	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
1255:						
Elkriver, occasionally flooded	80	Peking cotoneaster, western sandcherry	Nanking cherry, Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Amur maple, Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood
1256:						
Cantlin	90	Nanking cherry, western sandcherry	Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1257:						
Elkriver, rarely flooded	55	Peking cotoneaster, western sandcherry	Nanking cherry, Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Amur maple, Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood
Mosford, rarely flooded	35	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
1260B:						
Stonelake	55	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
Nebish, moderately wet	30	Nanking cherry, western sandcherry	Siberian peashrub, Amur maple, Harbin pear, common chokecherry	Black Hills spruce, Manchurian crabapple, blue spruce, eastern redcedar, white spruce, bur oak, northern red oak, common hackberry	Green ash, eastern white pine, red pine, Siberian elm, silver maple	Eastern cottonwood, Siouxland cottonwood
1260C:						
Stonelake	55	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1260C:						
Nebish	30	Nanking cherry, western sandcherry	Siberian peashrub, Amur maple, Harbin pear, common chokecherry	Black Hills spruce, Manchurian crabapple, blue spruce, eastern redcedar, white spruce, bur oak, northern red oak, common hackberry	Green ash, eastern white pine, red pine, Siberian elm, silver maple	Eastern cottonwood, Siouxland cottonwood
1260E:						
Stonelake	60	Nanking cherry, western sandcherry	Siberian peashrub, common chokecherry, Amur maple, Harbin pear, Manchurian crabapple, blue spruce, bur oak, eastern redcedar, northern red oak	Black Hills spruce, green ash, red pine	Eastern white pine, silver maple, Siouxland cottonwood, eastern cottonwood	Siberian elm
Nebish	25	Nanking cherry, western sandcherry	Siberian peashrub, Amur maple, Harbin pear, common chokecherry	Black Hills spruce, Manchurian crabapple, blue spruce, eastern redcedar, white spruce, bur oak, northern red oak, common hackberry	Green ash, eastern white pine, red pine, Siberian elm, silver maple	Eastern cottonwood, Siouxland cottonwood
1362B:						
Angus	85	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1368:						
Southhaven	90	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce	Norway spruce, green ash, eastern white pine, silver maple	Eastern cottonwood, Siouxland cottonwood
1377B:						
Dorset	70	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Two Inlets	20	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
1377C:						
Dorset	50	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1377C:						
Two Inlets	35	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
1377D:						
Dorset	45	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Two Inlets	40	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1377E:						
Dorset	45	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Two Inlets	45	Cotoneaster, western sandcherry	Nanking cherry, common chokecherry, common lilac, late lilac, sargent crabapple, silver buffaloberry, Amur maple, Harbin pear, Manchurian crabapple, Siberian crabapple, Siberian peashrub, blue spruce, common hackberry, eastern redcedar, northern whitecedar	American basswood, Austrian pine, Black Hills spruce, Norway spruce, Russian-olive, Scotch pine, green ash, white spruce, red pine, silver maple	Eastern white pine, jack pine, Siouxland cottonwood, eastern cottonwood	Siberian elm, imperial Carolina poplar
1379B:						
Dorset	65	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood
Almora	25	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1380A:						
Bygland, MAP >25--------	85	Peking cotoneaster, hedge cotoneaster	American cranberrybush, American plum, Siberian peashrub, common lilac, late lilac, sargent crabapple, Amur maple, bur oak, common chokecherry, gray dogwood, northern whitecedar, silver buffaloberry	Black Hills spruce, Manchurian crabapple, Russian-olive, Siberian crabapple, blue spruce, eastern redcedar, nannyberry, sugar maple, white spruce, Austrian pine, common hackberry	American basswood, Siberian elm, eastern white pine, green ash, jack pine, red pine, silver maple	Eastern cottonwood, Siouxland cottonwood, Carolina poplar
1380B:						
Bygland, MAP >25--------	70	Peking cotoneaster, hedge cotoneaster	American cranberrybush, American plum, Siberian peashrub, common lilac, late lilac, sargent crabapple, Amur maple, bur oak, common chokecherry, gray dogwood, northern whitecedar, silver buffaloberry	Black Hills spruce, Manchurian crabapple, Russian-olive, Siberian crabapple, blue spruce, eastern redcedar, nannyberry, sugar maple, white spruce, Austrian pine, common hackberry	American basswood, Siberian elm, eastern white pine, green ash, jack pine, red pine, silver maple	Eastern cottonwood, Siouxland cottonwood, Carolina poplar
1380C:						
Bygland, MAP >25--------	70	Peking cotoneaster, hedge cotoneaster	American cranberrybush, American plum, Siberian peashrub, common lilac, late lilac, sargent crabapple, Amur maple, bur oak, common chokecherry, gray dogwood, northern whitecedar, silver buffaloberry	Black Hills spruce, Manchurian crabapple, Russian-olive, Siberian crabapple, blue spruce, eastern redcedar, nannyberry, sugar maple, white spruce, Austrian pine, common hackberry	American basswood, Siberian elm, eastern white pine, green ash, jack pine, red pine, silver maple	Eastern cottonwood, Siouxland cottonwood, Carolina poplar

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1381:						
Lindaas, morainic	80	Nanking cherry	American cranberrybush, Siberian peashrub, common lilac, cotoneaster, redosier dogwood, sargent crabapple, American plum, common chokecherry, eastern redcedar, silver buffaloberry	Amur maple, Black Hills spruce, blue spruce, Austrian pine, Manchurian crabapple, Siberian crabapple, white spruce, Russian-olive, common hackberry	Norway spruce, green ash, red pine, golden willow	Silver maple, eastern cottonwood, Siouxland cottonwood, Carolina poplar
1383A:						
Shorewood, moderately wet	95	Hedge cotoneaster	American cranberrybush, Siberian peashrub, common chokecherry, common lilac, cotoneaster, American plum, silver buffaloberry	Black Hills spruce, Siberian crabapple, eastern redcedar, white spruce, Amur maple, Austrian pine, ponderosa pine, common hackberry, eastern white pine, red pine	Green ash, jack pine	Silver maple, eastern cottonwood
1388B:						
Terril, moderately wet	85	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
1408B:						
Angus	45	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1408B:						
Kilkenny	40	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
1438B:						
Braham, moderately wet	85	Peking cotoneaster, hedge cotoneaster	American cranberrybush, American plum, Siberian peashrub, common lilac, sargent crabapple, Amur maple, Siberian crabapple, common chokecherry, eastern redcedar, late lilac, silver buffaloberry	Blue spruce, nannyberry, northern whitecedar, sugar maple, Austrian pine, Black Hills spruce, Manchurian crabapple, Russian-olive, bur oak, white spruce, Norway spruce, Scotch pine, red pine	Green ash, eastern white pine, jack pine, Siberian elm	Silver maple, Siouxland cottonwood, eastern cottonwood
1443:						
Belleville	85	Nanking cherry	American cranberrybush, cotoneaster, sargent crabapple, common lilac, eastern redcedar, redosier dogwood, silver buffaloberry	American plum, blue spruce, Black Hills spruce, ponderosa pine, common hackberry	Eastern white pine, golden willow	Green ash, silver maple, Siouxland cottonwood, eastern cottonwood
1901B:						
Angus	60	Nanking cherry	American cranberrybush, common chokecherry, cotoneaster, sargent crabapple, silver buffaloberry, American plum, Amur maple, common lilac	Black Hills spruce, blue spruce, eastern redcedar, white spruce, Norway spruce, ponderosa pine, eastern white pine	Green ash	Silver maple, eastern cottonwood, Siouxland cottonwood

Table 10.--Windbreaks and Environmental Plantings--Continued

Map symbol and soil name	Pct. of map unit	Trees having predicted 20-year average height, in feet, of-- <8	8-15	16-25	26-35	>35
1901B:						
Le Sueur	30	---	American cranberrybush, Nanking cherry, common chokecherry, redosier dogwood, sargent crabapple, American plum, common lilac	Black Hills spruce, blue spruce, white spruce, eastern redcedar, ponderosa pine, Amur maple, common hackberry	Eastern white pine, northern red oak, green ash	Silver maple, eastern cottonwood, Siouxland cottonwood
1931:						
Essexville	75	Redosier dogwood	Gray dogwood, silky dogwood	Northern whitecedar, black ash, tall purple willow	Black willow, golden willow, white willow	Eastern cottonwood
1946:						
Fordum, frequently flooded	70	---	---	---	---	---
Winterfield, frequently flooded	20	Peking cotoneaster, western sandcherry	Nanking cherry, Siberian peashrub, Harbin pear, blue spruce, common chokecherry	Amur maple, Black Hills spruce, Manchurian crabapple, eastern redcedar, bur oak, common hackberry, white spruce	Northern red oak, red pine, eastern white pine, green ash	Siberian elm, silver maple, eastern cottonwood, Siouxland cottonwood
1975:						
Oylen	90	Common lilac, hedge cotoneaster, late lilac	American plum, Siberian crabapple, sargent crabapple, Amur maple, common chokecherry, eastern redcedar, silver buffaloberry	Austrian pine, Black Hills spruce, blue spruce, white spruce, eastern white pine	Green ash, silver maple	Eastern cottonwood

Table 11.--Windbreak Suitability Groups

(Suitable shrubs and trees with their mature heights are listed in table 10. Absence of an entry indicates that a windbreak suitability group is not assigned)

Map symbol and component name	Pct. of map unit	Windbreak suitability group
7A:		
Hubbard	95	7
7B:		
Hubbard	90	7
7C:		
Hubbard	80	7
8B:		
Sparta	95	7
35:		
Blue Earth, depressional	80	2K
74B:		
Dickinson	95	5
86:		
Canisteo	80	2K
106C2:		
Lester, eroded	70	3
106D2:		
Lester, eroded	80	3
106E:		
Lester	80	3
109:		
Cordova	90	2
114:		
Glencoe, depressional	90	2
138:		
Lerdal	80	4
158A:		
Zimmerman	90	7
158B:		
Zimmerman	90	7
158C:		
Zimmerman	90	7
158E:		
Zimmerman	85	7
169C:		
Braham	90	5
181:		
Litchfield	95	1

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
229:		
Waldorf	90	2
231C:		
Lester	80	3
231D:		
Lester	80	3
235:		
Nessel	85	1
239:		
Le Sueur	80	1
247:		
Linder	90	1
255:		
Mayer	85	2K
256:		
Mazaska	90	2
258B:		
Sandberg	95	7
258C:		
Sandberg	90	7
258E:		
Sandberg	85	7
260:		
Duelm	90	1
261:		
Isan, depressional	90	10
286B:		
Shorewood	95	4
294A:		
Rasset	90	6G
323:		
Shields	95	2
327A:		
Dickman	85	7
327B:		
Dickman	85	7
375:		
Forada	85	2
392:		
Biscay	90	2
406:		
Dorset	90	6G

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
414:		
Hamel	90	2
441:		
Almora	90	6G
461B:		
Koronis	85	3
461C2:		
Koronis, eroded	80	3
461E:		
Koronis	80	3
511:		
Marcellon, MAP <30	85	1
523:		
Houghton, drained	80	2H
525:		
Muskego, surface drained	75	10
539:		
Klossner, drained	80	2H
540:		
Seelyeville, surface drained	80	10
543:		
Markey, surface drained	80	10
548:		
Medo, drained	80	2H
603:		
Hanlon, occasionally flooded	80	1
611D:		
Hawick	85	7
708:		
Rushlake	85	1
740:		
Hamel	70	2
Glencoe, depressional	20	2
768:		
Mosford	85	7
771:		
Elkriver, rarely flooded	85	1

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
783C2:		
Lester, eroded	50	3
Kilkenny, eroded	30	3
792:		
Fordum, frequently flooded	90	10
799:		
Seelyeville, frequently flooded	45	10
Bowstring, frequently flooded	45	10
804B:		
Koronis	50	3
Sunburg	20	8
Hawick	15	7
804C2:		
Koronis, eroded	45	3
Sunburg	25	8
Hawick	15	7
804D2:		
Koronis, eroded	40	3
Sunburg	30	8
Hawick	15	7
804E:		
Koronis	50	3
Sunburg	20	8
Hawick	15	7
807D2:		
Koronis, eroded	65	3
Sunburg	20	8
875B:		
Estherville	60	7
Hawick	30	7
875C:		
Hawick	60	7
Estherville	25	7
896B:		
Kingsley	70	5
Gotham	25	7

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
896C:		
Kingsley	70	5
Gotham	25	7
945C2:		
Lester, eroded	50	3
Storden, eroded	30	8
945D2:		
Lester, eroded	60	3
Storden, eroded	20	8
956:		
Canisteo	65	2K
Glencoe, depressional	25	2
978:		
Cordova	60	2
Rolfe, depressional	30	2
1000:		
Arvilla, MAP >25	90	6G
1023C:		
Lester, eroded	50	3
Malardi	35	6G
1023D:		
Lester, eroded	45	3
Malardi	40	6G
1026B:		
Lizzie, moderately wet	90	3
1035B:		
Crowfork	90	7
1035C:		
Crowfork	90	7
1035D:		
Crowfork	85	7
1036B:		
Angus	85	3
1037:		
Eckvoll, MAP >25	90	1
1038A:		
Verndale, acid substratum	90	6G
1038B:		
Verndale, acid substratum	85	6G

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
1066B:		
Malardi	65	6G
Hawick	25	7
1066C:		
Malardi	60	6G
Hawick	25	7
1066E:		
Malardi	55	6G
Hawick	30	7
1075:		
Klossner, ponded	40	10
Muskego, ponded	40	10
1080:		
Klossner, ponded	30	10
Okoboji, ponded	30	10
Glencoe, ponded	30	10
1087B:		
Angus	55	3
Malardi	30	6G
1094B:		
Angus	60	3
Cordova	30	2
1099:		
Granby, very wet	85	10
1110:		
Isan	90	2
1156:		
Cordova	85	2
1161:		
Barry	85	2
1163:		
Suckercreek, frequently flooded	85	10
1165:		
Lundlake, depressional	90	2
1173:		
Muskego, frequently flooded	45	10
Klossner, frequently flooded	45	10

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
1186:		
Forestcity	75	2
Lundlake, depressional	20	2
1196B:		
Lida	60	6G
Two Inlets	30	7
1196C:		
Lida	55	6G
Two Inlets	30	7
1196E:		
Lida	50	6G
Two Inlets	40	7
1197:		
Suckercreek, occasionally flooded	80	10
1199:		
Klossner, ponded	45	10
Lundlake, ponded	45	10
1203:		
Muskego, ponded	30	10
Blue Earth, ponded	30	10
Houghton, ponded	30	10
1204B:		
Reedslake	85	3
1207B:		
Reedslake	60	3
Le Sueur	25	1
1213C:		
Cokato, eroded	65	3
Storden	20	8
1213D:		
Cokato, eroded	60	3
Storden	25	8
1220C:		
Cokato, eroded	50	3
Storden	20	8
Hawick	15	7

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
1223:		
Sandberg, MAP >25-----	60	7
Arvilla, MAP >25------	30	6G
1224:		
Hubbard----------	60	7
Verndale, acid substratum----------	30	6G
1231:		
Hubbard----------	60	7
Mosford----------	30	7
1255:		
Elkriver, occasionally flooded----------	80	1
1256:		
Cantlin----------	90	1
1257:		
Elkriver, rarely flooded----------	55	1
Mosford, rarely flooded----------	35	7
1260B:		
Stonelake----------	55	7
Nebish, moderately wet	30	3
1260C:		
Stonelake----------	55	7
Nebish----------	30	3
1260E:		
Stonelake----------	60	7
Nebish----------	25	3
1288:		
Seelyeville, ponded---	45	10
Markey, ponded--------	45	10
1362B:		
Angus----------	85	3
1368:		
Southhaven----------	90	3
1377B:		
Dorset----------	70	6G
Two Inlets----------	20	7

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
1377C:		
Dorset	50	6G
Two Inlets	35	7
1377D:		
Dorset	45	6G
Two Inlets	40	7
1377E:		
Dorset	45	6G
Two Inlets	45	7
1378:		
Fordum, occasionally flooded	85	10
1379B:		
Dorset	65	6G
Almora	25	6G
1380A:		
Bygland, MAP >25	85	4
1380B:		
Bygland, MAP >25	70	4
1380C:		
Bygland, MAP >25	70	4
1381:		
Lindaas, morainic	80	2
1383A:		
Shorewood, moderately wet	95	4
1388B:		
Terril, moderately wet	85	3
1406:		
Medo, ponded	30	10
Dassel, ponded	30	10
Biscay, ponded	30	10
1408B:		
Angus	45	3
Kilkenny	40	3
1438B:		
Braham, moderately wet	85	5
1443:		
Belleville	85	2

Table 11.--Windbreak Suitability Groups--Continued

Map symbol and component name	Pct. of map unit	Windbreak suitability group
1901B:		
Angus	60	3
Le Sueur	30	1
1931:		
Essexville	75	2K
1942:		
Forada, depressional	85	10
1946:		
Fordum, frequently flooded	70	10
Winterfield, frequently flooded	20	1
1975:		
Oylen	90	6G

Table 12a.--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	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7A:							
Hubbard	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81	Too sandy	0.81
7B:							
Hubbard	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81	Too sandy	0.81
						Slope	0.12
7C:							
Hubbard	80	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.81	Too sandy	0.81	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.81
8B:							
Sparta	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.84	Too sandy	0.84	Too sandy	0.84
						Slope	0.12
35:							
Blue Earth, depressional	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
				Depth to saturated zone	1.00		
		Ponding	1.00			Ponding	1.00
74B:							
Dickinson	95	Not limited		Not limited		Somewhat limited	
						Slope	0.12
86:							
Canisteo	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
106C2:							
Lester, eroded	70	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
106D2:							
Lester, eroded	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
106E:							
Lester	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
109:							
Cordova	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
114:							
Glencoe, depressional	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
138:							
Lerdal	80	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.99	Restricted permeability	0.94	Depth to saturated zone	0.99
		Restricted permeability	0.94	Depth to saturated zone	0.78	Restricted permeability	0.94
158A:							
Zimmerman	90	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
158B:							
Zimmerman	90	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
						Slope	0.12
158C:							
Zimmerman	90	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	1.00
158E:							
Zimmerman	85	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Slope	1.00
		Slope	1.00	Slope	1.00	Too sandy	1.00
169C:							
Braham	90	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.37	Too sandy	0.37	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.37
181:							
Litchfield	95	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Too sandy	0.92	Depth to saturated zone	1.00
		Too sandy	0.92	Depth to saturated zone	0.90	Too sandy	0.92
229:							
Waldorf	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
231C:							
Lester	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
231D:							
Lester	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
235:							
Nessel	85	Not limited		Not limited		Not limited	
239:							
Le Sueur	80	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
247:							
Linder	90	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.90	Depth to saturated zone	1.00
255:							
Mayer	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
256:							
Mazaska	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
258B:							
Sandberg	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
						Gravel content	0.78
						Slope	0.12
258C:							
Sandberg	90	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.87	Too sandy	0.87	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.87
						Gravel content	0.78
258E:							
Sandberg	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
						Gravel content	0.78
260:							
Duelm	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
261:							
Isan, depressional	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
286B:							
Shorewood	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Restricted permeability	0.60	Restricted permeability	0.60	Restricted permeability	0.60
						Slope	0.50

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
294A:							
Rasset	90	Not limited		Not limited		Somewhat limited	
						Gravel content	0.04
323:							
Shields	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
327A:							
Dickman	85	Not limited		Not limited		Not limited	
327B:							
Dickman	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
375:							
Forada	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
392:							
Biscay	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
406:							
Dorset	90	Not limited		Not limited		Not limited	
414:							
Hamel	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
441:							
Almora	90	Not limited		Not limited		Not limited	
461B:							
Koronis	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
						Gravel content	0.04
461C2:							
Koronis, eroded	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.04
461E:							
Koronis	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.04
511:							
Marcellon, MAP <30--	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
						Gravel content	0.04

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
523:							
Houghton, drained	80	Not rated		Not rated		Not rated	
525:							
Muskego, surface drained	75	Not rated		Not rated		Not rated	
539:							
Klossner, drained	80	Not rated		Not rated		Not rated	
540:							
Seelyeville, surface drained	80	Not rated		Not rated		Not rated	
543:							
Markey, surface drained	80	Not rated		Not rated		Not rated	
548:							
Medo, drained	80	Not rated		Not rated		Not rated	
603:							
Hanlon, occasionally flooded	80	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
611D:							
Hawick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.90
708:							
Rushlake	85	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
		Depth to saturated zone	0.39	Depth to saturated zone	0.19	Depth to saturated zone	0.39
						Gravel content	0.06
740:							
Hamel	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Glencoe, depressional	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
768:							
Mosford	85	Not limited		Not limited		Not limited	
771:							
Elkriver, rarely flooded	85	Very limited		Not limited		Not limited	
		Flooding	1.00				

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
783C2:							
Lester, eroded	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Kilkenny, eroded	30	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.21	Restricted permeability	0.21	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.21
792:							
Fordum, frequently flooded	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
						Gravel content	0.05
799:							
Seelyeville, frequently flooded	45	Not rated		Not rated		Not rated	
Bowstring, frequently flooded	45	Not rated		Not rated		Not rated	
804B:							
Koronis	50	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.04
Sunburg	20	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.17
Hawick	15	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.04
804C2:							
Koronis, eroded	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.04
Sunburg	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.17
Hawick	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.04
804D2:							
Koronis, eroded	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.04
Sunburg	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.17

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
804D2:							
Hawick	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.04
804E:							
Koronis	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.04
Sunburg	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.17
Hawick	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.77	Too sandy	0.77	Gravel content	0.90
						Too sandy	0.77
807D2:							
Koronis, eroded	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.04
Sunburg	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.17
875B:							
Estherville	60	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Hawick	30	Not limited		Not limited		Somewhat limited	
						Slope	0.12
						Gravel content	0.04
875C:							
Hawick	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.04
Estherville	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
896B:							
Kingsley	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.15	Restricted permeability	0.15	Slope	0.50
						Restricted permeability	0.15
						Gravel content	0.04
Gotham	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.57	Too sandy	0.57	Too sandy	0.57
						Slope	0.50
896C:							
Kingsley	70	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.15	Restricted permeability	0.15	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.15
						Gravel content	0.04

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
896C:							
Gotham	25	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.57	Too sandy	0.57	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.57
945C2:							
Lester, eroded	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Storden, eroded	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
945D2:							
Lester, eroded	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Storden, eroded	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
956:							
Canisteo	65	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Glencoe, depressional	25	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
978:							
Cordova	60	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
Rolfe, depressional	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
1000:							
Arvilla, MAP >25	90	Not limited		Not limited		Not limited	
1015:							
Udipsamments (cut and fill land)	100	Not rated		Not rated		Not rated	
1016:							
Udorthents, loamy	100	Not rated		Not rated		Not rated	
1023C:							
Lester, eroded	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Malardi	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1023D:							
Lester, eroded	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Malardi	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
1026B:							
Lizzie, moderately wet	90	Not limited		Not limited		Somewhat limited	
						Slope	0.12
1027:							
Udorthents, wet substratum	100	Not rated		Not rated		Not rated	
1030:							
Pits, gravel	80	Not rated		Not rated		Not rated	
Udipsamments	20	Not rated		Not rated		Not rated	
1035B:							
Crowfork	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.42	Too sandy	0.42	Too sandy	0.42
						Slope	0.12
1035C:							
Crowfork	90	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.42	Too sandy	0.42	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.42
1035D:							
Crowfork	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.42	Too sandy	0.42	Too sandy	0.42
1036B:							
Angus	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
1037:							
Eckvoll, MAP >25	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.98	Too sandy	0.89	Depth to saturated zone	0.98
		Too sandy	0.89	Depth to saturated zone	0.75	Too sandy	0.89
1038A:							
Verndale, acid substratum	90	Not limited		Not limited		Not limited	
1038B:							
Verndale, acid substratum	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
1066B:							
Malardi	65	Not limited		Not limited		Somewhat limited	
						Slope	0.12

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
1066B:							
Hawick	25	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Gravel content	0.04
1066C:							
Malardi	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Hawick	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
						Gravel content	0.04
1066E:							
Malardi	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Hawick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.04
1072:							
Udorthents, shallow	100	Not rated		Not rated		Not rated	
1075:							
Klossner, ponded	40	Not rated		Not rated		Not rated	
Muskego, ponded	40	Not rated		Not rated		Not rated	
1080:							
Klossner, ponded	30	Not rated		Not rated		Not rated	
Okoboji, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Restricted permeability	0.15	Restricted permeability	0.15	Restricted permeability	0.15
Glencoe, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
1087B:							
Angus	55	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Malardi	30	Not limited		Not limited		Somewhat limited	
						Slope	0.12
1094B:							
Angus	60	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Cordova	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1099:							
Granby, very wet	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Too sandy	0.89	Too sandy	0.89	Too sandy	0.89
1110:							
Isan	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1156:							
Cordova	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
1161:							
Barry	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1163:							
Suckercreek, frequently flooded	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
1165:							
Lundlake, depressional	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
1173:							
Muskego, frequently flooded	45	Not rated		Not rated		Not rated	
Klossner, frequently flooded	45	Not rated		Not rated		Not rated	
1186:							
Forestcity	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Lundlake, depressional	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
1196B:							
Lida	60	Not limited		Not limited		Somewhat limited	
						Slope	0.50
						Content of large stones	0.01

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
1196B:							
Two Inlets	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
						Slope	0.50
						Gravel content	0.22
1196C:							
Lida	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
						Content of large stones	0.01
Two Inlets	30	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.87	Too sandy	0.87	Slope	1.00
		Slope	0.37	Slope	0.37	Too sandy	0.87
						Gravel content	0.22
1196E:							
Lida	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Content of large stones	0.01
Two Inlets	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
						Gravel content	0.22
1197:							
Suckercreek, occasionally flooded	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
1199:							
Klossner, ponded	45	Not rated		Not rated		Not rated	
Lundlake, ponded	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
1203:							
Muskego, ponded	30	Not rated		Not rated		Not rated	
Blue Earth, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
Houghton, ponded	30	Not rated		Not rated		Not rated	
1204B:							
Reedslake	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
1207B:							
Reedslake	60	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Le Sueur	25	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
						Slope	0.12
1213C:							
Cokato, eroded	65	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Storden	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
1213D:							
Cokato, eroded	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Storden	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
1220C:							
Cokato, eroded	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Storden	20	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Hawick	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
						Gravel content	0.90
1223:							
Sandberg, MAP >25	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.77	Too sandy	0.77	Gravel content	0.78
						Too sandy	0.77
Arvilla, MAP >25	30	Not limited		Not limited		Not limited	
1224:							
Hubbard	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.70	Too sandy	0.70	Too sandy	0.70
Verndale, acid substratum	30	Not limited		Not limited		Not limited	
1231:							
Hubbard	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81	Too sandy	0.81
Mosford	30	Not limited		Not limited		Not limited	
1255:							
Elkriver, occasionally flooded	80	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Depth to saturated zone	0.98			Flooding	0.60

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
1256:							
Cantlin	90	Somewhat limited Too sandy	 0.96	Somewhat limited Too sandy	 0.96	Somewhat limited Too sandy	 0.96
1257:							
Elkriver, rarely flooded	55	Very limited Flooding	 1.00	Not limited		Somewhat limited Slope	 0.12
Mosford, rarely flooded	35	Very limited Flooding	 1.00	Not limited		Somewhat limited Slope	 0.12
1260B:							
Stonelake	55	Somewhat limited Too sandy	 0.50	Somewhat limited Too sandy	 0.50	Somewhat limited Too sandy Slope Gravel content	 0.50 0.12 0.04
Nebish, moderately wet	30	Not limited		Not limited		Somewhat limited Slope	 0.12
1260C:							
Stonelake	55	Somewhat limited Too sandy Slope	 0.57 0.04	Somewhat limited Too sandy Slope	 0.57 0.04	Very limited Slope Too sandy Gravel content	 1.00 0.57 0.04
Nebish	30	Somewhat limited Slope	 0.04	Somewhat limited Slope	 0.04	Very limited Slope	 1.00
1260E:							
Stonelake	60	Very limited Slope Gravel content	 1.00 0.36	Very limited Slope Gravel content	 1.00 0.36	Very limited Gravel content Slope Content of large stones	 1.00 1.00 0.01
Nebish	25	Very limited Slope	 1.00	Very limited Slope	 1.00	Very limited Slope	 1.00
1288:							
Seelyeville, ponded	45	Not rated		Not rated		Not rated	
Markey, ponded	45	Not rated		Not rated		Not rated	
1356:							
Water, miscellaneous	100	Not rated		Not rated		Not rated	
1362B:							
Angus	85	Not limited		Not limited		Somewhat limited Slope	 0.50
1368:							
Southhaven	90	Not limited		Not limited		Not limited	
1377B:							
Dorset	70	Not limited		Not limited		Somewhat limited Slope	 0.12

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1377B:							
Two Inlets----------	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
						Slope	0.50
						Gravel content	0.22
1377C:							
Dorset----------	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Two Inlets----------	35	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.87	Too sandy	0.87	Slope	1.00
		Slope	0.04	Slope	0.04	Too sandy	0.87
						Gravel content	0.22
1377D:							
Dorset----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Two Inlets----------	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
						Gravel content	0.22
1377E:							
Dorset----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Two Inlets----------	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too sandy	0.87	Too sandy	0.87	Too sandy	0.87
						Gravel content	0.22
1378:							
Fordum, occasionally flooded----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
						Gravel content	0.05
1379B:							
Dorset----------	65	Not limited		Not limited		Not limited	
Almora----------	25	Not limited		Not limited		Not limited	
1380A:							
Bygland, MAP >25----	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
1380B:							
Bygland, MAP >25----	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Restricted permeability	0.43	Restricted permeability	0.43	Restricted permeability	0.43
						Slope	0.12

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Value	Picnic areas: Rating class and limiting features	Value	Playgrounds: Rating class and limiting features	Value
1380C:							
Bygland, MAP >25----	70	Somewhat limited		Somewhat limited		Very limited	
		Restricted permeability	0.43	Restricted permeability	0.43	Slope	1.00
		Slope	0.04	Slope	0.04	Restricted permeability	0.43
1381:							
Lindaas, morainic---	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.96	Restricted permeability	0.96	Restricted permeability	0.96
1383A:							
Shorewood, moderately wet-----	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.60	Restricted permeability	0.60	Restricted permeability	0.60
1388B:							
Terril, moderately wet----------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.12
1406:							
Medo, ponded--------	30	Not rated		Not rated		Not rated	
Dassel, ponded------	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
Biscay, ponded------	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
1408B:							
Angus----------	45	Not limited		Not limited		Somewhat limited	
						Slope	0.12
Kilkenny----------	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
						Slope	0.12
1438B:							
Braham, moderately wet----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.37	Too sandy	0.37	Too sandy	0.37
						Slope	0.12

Table 12a.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Camp areas		Picnic areas		Playgrounds	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1443:							
Belleville----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.21	Restricted permeability	0.21	Restricted permeability	0.21
1901B:							
Angus----------	60	Not limited		Not limited		Somewhat limited	
						Slope	0.50
Le Sueur----------	30	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.78	Depth to saturated zone	0.99
						Slope	0.50
1931:							
Essexville----------	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1942:							
Forada, depressional	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Ponding	1.00
1946:							
Fordum, frequently flooded----------	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.40	Flooding	1.00
						Gravel content	0.05
Winterfield, frequently flooded	20	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Too sandy	0.96	Flooding	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
		Too sandy	0.96	Flooding	0.40	Too sandy	0.96
1975:							
Oylen----------	90	Not limited		Not limited		Not limited	
W:							
Water----------	100	Not rated		Not rated		Not rated	

Table 12b.--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	Pct. of map unit	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
7A:							
Hubbard	95	Somewhat limited Too sandy	0.81	Somewhat limited Too sandy	0.81	Somewhat limited Droughty	0.50
7B:							
Hubbard	90	Somewhat limited Too sandy	0.81	Somewhat limited Too sandy	0.81	Somewhat limited Droughty	0.59
7C:							
Hubbard	80	Somewhat limited Too sandy	0.81	Somewhat limited Too sandy	0.81	Somewhat limited Droughty Slope	0.83 0.04
8B:							
Sparta	95	Somewhat limited Too sandy	0.84	Somewhat limited Too sandy	0.84	Somewhat limited Droughty	0.15
35:							
Blue Earth, depressional	80	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
74B:							
Dickinson	95	Not limited		Not limited		Not limited	
86:							
Canisteo	80	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
106C2:							
Lester, eroded	70	Not limited		Not limited		Somewhat limited Slope	0.04
106D2:							
Lester, eroded	80	Not limited		Not limited		Very limited Slope	1.00
106E:							
Lester	80	Somewhat limited Slope	0.68	Not limited		Very limited Slope	1.00
109:							
Cordova	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
114:							
Glencoe, depressional	90	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

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
138:							
Lerdal	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
158A:							
Zimmerman	90	Very limited		Very limited		Somewhat limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	0.34
158B:							
Zimmerman	90	Very limited		Very limited		Somewhat limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	0.34
158C:							
Zimmerman	90	Very limited		Very limited		Somewhat limited	
		Too sandy	1.00	Too sandy	1.00	Droughty	0.34
						Slope	0.04
158E:							
Zimmerman	85	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Slope	1.00
		Slope	0.50			Droughty	0.34
169C:							
Braham	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.37	Too sandy	0.37	Slope	0.04
181:							
Litchfield	95	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.92	Too sandy	0.92	Depth to saturated zone	0.90
		Depth to saturated zone	0.78	Depth to saturated zone	0.78		
229:							
Waldorf	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
231C:							
Lester	80	Not limited		Not limited		Somewhat limited	
						Slope	0.04
231D:							
Lester	80	Not limited		Not limited		Very limited	
						Slope	1.00
235:							
Nessel	85	Not limited		Not limited		Not limited	
239:							
Le Sueur	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
247:							
Linder	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.78	Depth to saturated zone	0.78	Depth to saturated zone	0.90

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
255:							
Mayer	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
256:							
Mazaska	90	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
258B:							
Sandberg	95	Somewhat limited Too sandy	0.87	Somewhat limited Too sandy	0.87	Somewhat limited Droughty	0.79
258C:							
Sandberg	90	Somewhat limited Too sandy	0.87	Somewhat limited Too sandy	0.87	Somewhat limited Droughty Slope	0.79 0.04
258E:							
Sandberg	85	Somewhat limited Too sandy Slope	0.87 0.50	Somewhat limited Too sandy	0.87	Very limited Slope Droughty	1.00 0.79
260:							
Duelm	90	Somewhat limited Too sandy	0.87	Somewhat limited Too sandy	0.87	Somewhat limited Droughty	0.21
261:							
Isan, depressional	90	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 0.04
286B:							
Shorewood	95	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.44	Somewhat limited Depth to saturated zone	0.75
294A:							
Rasset	90	Not limited		Not limited		Not limited	
323:							
Shields	95	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
327A:							
Dickman	85	Not limited		Not limited		Somewhat limited Droughty	0.07
327B:							
Dickman	85	Not limited		Not limited		Somewhat limited Droughty	0.07
375:							
Forada	85	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
392:							
Biscay	90	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone	1.00
406:							
Dorset	90	Not limited		Not limited		Not limited	
414:							
Hamel	90	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone	1.00	Very limited: Depth to saturated zone	1.00
441:							
Almora	90	Not limited		Not limited		Not limited	
461B:							
Koronis	85	Not limited		Not limited		Not limited	
461C2:							
Koronis, eroded	80	Not limited		Not limited		Somewhat limited: Slope	0.04
461E:							
Koronis	80	Very limited: Slope	1.00	Somewhat limited: Slope	0.22	Very limited: Slope	1.00
511:							
Marcellon, MAP <30	85	Somewhat limited: Depth to saturated zone	0.44	Somewhat limited: Depth to saturated zone	0.44	Somewhat limited: Depth to saturated zone	0.75
523:							
Houghton, drained	80	Not rated		Not rated		Not rated	
525:							
Muskego, surface drained	75	Not rated		Not rated		Not rated	
539:							
Klossner, drained	80	Not rated		Not rated		Not rated	
540:							
Seelyeville, surface drained	80	Not rated		Not rated		Not rated	
543:							
Markey, surface drained	80	Not rated		Not rated		Not rated	
548:							
Medo, drained	80	Not rated		Not rated		Not rated	
603:							
Hanlon, occasionally flooded	80	Not limited		Not limited		Somewhat limited: Flooding	0.60

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
611D:							
Hawick	85	Somewhat limited		Not limited		Very limited	
		Slope	0.18			Slope	1.00
						Droughty	1.00
708:							
Rushlake	85	Very limited		Very limited		Very limited	
		Too sandy	1.00	Too sandy	1.00	Too sandy	1.00
						Droughty	0.92
						Depth to saturated zone	0.19
740:							
Hamel	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Glencoe, depressional	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
768:							
Mosford	85	Not limited		Not limited		Not limited	
771:							
Elkriver, rarely flooded	85	Not limited		Not limited		Not limited	
783C2:							
Lester, eroded	50	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Kilkenny, eroded	30	Not limited		Not limited		Somewhat limited	
						Slope	0.04
792:							
Fordum, frequently flooded	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
799:							
Seelyeville, frequently flooded	45	Not rated		Not rated		Not rated	
Bowstring, frequently flooded	45	Not rated		Not rated		Not rated	
804B:							
Koronis	50	Not limited		Not limited		Not limited	
Sunburg	20	Not limited		Not limited		Not limited	
Hawick	15	Not limited		Not limited		Somewhat limited	
						Droughty	0.91

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
804C2:							
Koronis, eroded	45	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Sunburg	25	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Hawick	15	Not limited		Not limited		Somewhat limited	
						Droughty	0.91
						Slope	0.04
804D2:							
Koronis, eroded	40	Not limited		Not limited		Very limited	
						Slope	1.00
Sunburg	30	Not limited		Not limited		Very limited	
						Slope	1.00
Hawick	15	Not limited		Not limited		Very limited	
						Slope	1.00
						Droughty	0.91
804E:							
Koronis	50	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
Sunburg	20	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
Hawick	15	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Too sandy	0.77	Slope	1.00
		Too sandy	0.77	Slope	0.22	Droughty	0.98
						Too sandy	0.50
807D2:							
Koronis, eroded	65	Not limited		Not limited		Very limited	
						Slope	1.00
Sunburg	20	Not limited		Not limited		Very limited	
						Slope	1.00
875B:							
Estherville	60	Not limited		Not limited		Somewhat limited	
						Droughty	0.12
Hawick	30	Not limited		Not limited		Somewhat limited	
						Droughty	0.91
875C:							
Hawick	60	Not limited		Not limited		Somewhat limited	
						Droughty	0.91
						Slope	0.04
Estherville	25	Not limited		Not limited		Somewhat limited	
						Droughty	0.12
						Slope	0.04

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
896B:							
Kingsley	70	Not limited		Not limited		Not limited	
Gotham	25	Somewhat limited Too sandy	0.57	Somewhat limited Too sandy	0.57	Somewhat limited Droughty	0.01
896C:							
Kingsley	70	Not limited		Not limited		Somewhat limited Slope	0.04
Gotham	25	Somewhat limited Too sandy	0.57	Somewhat limited Too sandy	0.57	Somewhat limited Slope Droughty	0.04 0.01
945C2:							
Lester, eroded	50	Not limited		Not limited		Somewhat limited Slope	0.04
Storden, eroded	30	Not limited		Not limited		Somewhat limited Slope	0.04
945D2:							
Lester, eroded	60	Not limited		Not limited		Very limited Slope	1.00
Storden, eroded	20	Not limited		Not limited		Very limited Slope	1.00
956:							
Canisteo	65	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Glencoe, depressional	25	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
978:							
Cordova	60	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00	Very limited Depth to saturated zone	1.00
Rolfe, depressional	30	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
1000:							
Arvilla, MAP >25	90	Not limited		Not limited		Somewhat limited Droughty	0.10
1015:							
Udipsamments (cut and fill land)	100	Not rated		Not rated		Not rated	
1016:							
Udorthents, loamy	100	Not rated		Not rated		Not rated	

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	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
1023C:							
Lester, eroded------	50	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Malardi----------	35	Not limited		Not limited		Somewhat limited	
						Droughty	0.06
						Slope	0.04
1023D:							
Lester, eroded------	45	Not limited		Not limited		Very limited	
						Slope	1.00
Malardi----------	40	Not limited		Not limited		Very limited	
						Slope	1.00
						Droughty	0.32
1026B:							
Lizzie, moderately wet----------	90	Not limited		Not limited		Not limited	
1027:							
Udorthents, wet substratum---------	100	Not rated		Not rated		Not rated	
1030:							
Pits, gravel--------	80	Not rated		Not rated		Not rated	
Udipsamments--------	20	Not rated		Not rated		Not rated	
1035B:							
Crowfork----------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.42	Too sandy	0.42	Droughty	0.02
1035C:							
Crowfork----------	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.42	Too sandy	0.42	Slope	0.04
						Droughty	0.02
1035D:							
Crowfork----------	85	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.42	Too sandy	0.42	Slope	1.00
						Droughty	0.02
1036B:							
Angus----------	85	Not limited		Not limited		Not limited	
1037:							
Eckvoll, MAP >25----	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.89	Too sandy	0.89	Depth to saturated zone	0.75
		Depth to saturated zone	0.44	Depth to saturated zone	0.44		
1038A:							
Verndale, acid substratum---------	90	Not limited		Not limited		Not limited	
1038B:							
Verndale, acid substratum---------	85	Not limited		Not limited		Not limited	

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1066B:							
Malardi	65	Not limited		Not limited		Somewhat limited	
						Droughty	0.06
Hawick	25	Not limited		Not limited		Somewhat limited	
						Droughty	0.91
1066C:							
Malardi	60	Not limited		Not limited		Somewhat limited	
						Droughty	0.06
						Slope	0.04
Hawick	25	Not limited		Not limited		Somewhat limited	
						Droughty	0.91
						Slope	0.16
1066E:							
Malardi	55	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	0.32
Hawick	30	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	0.91
1072:							
Udorthents, shallow	100	Not rated		Not rated		Not rated	
1075:							
Klossner, ponded	40	Not rated		Not rated		Not rated	
Muskego, ponded	40	Not rated		Not rated		Not rated	
1080:							
Klossner, ponded	30	Not rated		Not rated		Not rated	
Okoboji, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
Glencoe, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
1087B:							
Angus	55	Not limited		Not limited		Not limited	
Malardi	30	Not limited		Not limited		Somewhat limited	
						Droughty	0.06
1094B:							
Angus	60	Not limited		Not limited		Not limited	
Cordova	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	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
1099:							
Granby, very wet	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
		Too sandy	0.89	Too sandy	0.89	Droughty	0.13
1110:							
Isan	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Droughty	0.03
1156:							
Cordova	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1161:							
Barry	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1163:							
Suckercreek, frequently flooded	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00
1165:							
Lundlake, depressional	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
1173:							
Muskego, frequently flooded	45	Not rated		Not rated		Not rated	
Klossner, frequently flooded	45	Not rated		Not rated		Not rated	
1186:							
Forestcity	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Lundlake, depressional	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1196B:							
Lida	60	Not limited		Not limited		Somewhat limited	
						Droughty	0.16
						Content of large stones	0.01
Two Inlets	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.87	Too sandy	0.87	Droughty	0.80
1196C:							
Lida	55	Not limited		Not limited		Somewhat limited	
						Slope	0.37
						Droughty	0.16
						Content of large stones	0.01
Two Inlets	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.87	Too sandy	0.87	Droughty	0.80
						Slope	0.37
1196E:							
Lida	50	Somewhat limited		Not limited		Very limited	
		Slope	0.98			Slope	1.00
						Droughty	0.16
						Content of large stones	0.01
Two Inlets	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.98	Too sandy	0.87	Slope	1.00
		Too sandy	0.87			Droughty	0.76
1197:							
Suckercreek, occasionally flooded	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
1199:							
Klossner, ponded	45	Not rated		Not rated		Not rated	
Lundlake, ponded	45	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
1203:							
Muskego, ponded	30	Not rated		Not rated		Not rated	
Blue Earth, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
Houghton, ponded	30	Not rated		Not rated		Not rated	
1204B:							
Reedslake	85	Not limited		Not limited		Not limited	

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1207B:							
Reedslake	60	Not limited		Not limited		Not limited	
Le Sueur	25	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
1213C:							
Cokato, eroded	65	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Storden	20	Not limited		Not limited		Somewhat limited	
						Slope	0.04
1213D:							
Cokato, eroded	60	Not limited		Not limited		Very limited	
						Slope	1.00
Storden	25	Not limited		Not limited		Very limited	
						Slope	1.00
1220C:							
Cokato, eroded	50	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Storden	20	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Hawick	15	Not limited		Not limited		Very limited	
						Droughty	1.00
						Slope	0.04
1223:							
Sandberg, MAP >25	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.77	Too sandy	0.77	Too sandy	0.50
						Droughty	0.41
Arvilla, MAP >25	30	Not limited		Not limited		Somewhat limited	
						Droughty	0.27
1224:							
Hubbard	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.70	Too sandy	0.70	Droughty	0.85
						Too sandy	0.50
Verndale, acid substratum	30	Not limited		Not limited		Not limited	
1231:							
Hubbard	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.81	Too sandy	0.81	Droughty	0.50
Mosford	30	Not limited		Not limited		Not limited	
1255:							
Elkriver, occasionally flooded	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
						Flooding	0.60

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1256:							
Cantlin	90	Somewhat limited Too sandy	0.96	Somewhat limited Too sandy	0.96	Somewhat limited Droughty	0.57
1257:							
Elkriver, rarely flooded	55	Not limited		Not limited		Not limited	
Mosford, rarely flooded	35	Not limited		Not limited		Somewhat limited Droughty	0.01
1260B:							
Stonelake	55	Somewhat limited Too sandy	0.50	Somewhat limited Too sandy	0.50	Somewhat limited Droughty Too sandy	0.82 0.50
Nebish, moderately wet	30	Not limited		Not limited		Not limited	
1260C:							
Stonelake	55	Somewhat limited Too sandy	0.57	Somewhat limited Too sandy	0.57	Somewhat limited Droughty Slope	0.88 0.04
Nebish	30	Not limited		Not limited		Somewhat limited Slope	0.04
1260E:							
Stonelake	60	Somewhat limited Slope	0.18	Not limited		Very limited Slope Droughty Gravel content Content of large stones	1.00 0.99 0.36 0.01
Nebish	25	Somewhat limited Slope	0.18	Not limited		Very limited Slope	1.00
1288:							
Seelyeville, ponded	45	Not rated		Not rated		Not rated	
Markey, ponded	45	Not rated		Not rated		Not rated	
1356:							
Water, miscellaneous	100	Not rated		Not rated		Not rated	
1362B:							
Angus	85	Not limited		Not limited		Not limited	
1368:							
Southhaven	90	Not limited		Not limited		Not limited	
1377B:							
Dorset	70	Not limited		Not limited		Not limited	
Two Inlets	20	Somewhat limited Too sandy	0.87	Somewhat limited Too sandy	0.87	Somewhat limited Droughty	0.80

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1377C:							
Dorset	50	Not limited		Not limited		Somewhat limited	
						Slope	0.04
Two Inlets	35	Somewhat limited		Somewhat limited		Somewhat limited	
		Too sandy	0.87	Too sandy	0.87	Droughty	0.80
						Slope	0.04
1377D:							
Dorset	45	Not limited		Not limited		Very limited	
						Slope	1.00
						Droughty	0.17
Two Inlets	40	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.87	Too sandy	0.87	Slope	1.00
						Droughty	0.80
1377E:							
Dorset	45	Very limited		Not limited		Very limited	
		Slope	1.00			Slope	1.00
						Droughty	0.12
Two Inlets	45	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Too sandy	0.87	Slope	1.00
		Too sandy	0.87			Droughty	0.76
1378:							
Fordum, occasionally flooded	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
						Flooding	0.60
1379B:							
Dorset	65	Not limited		Not limited		Not limited	
Almora	25	Not limited		Not limited		Not limited	
1380A:							
Bygland, MAP >25	85	Not limited		Not limited		Not limited	
1380B:							
Bygland, MAP >25	70	Not limited		Not limited		Not limited	
1380C:							
Bygland, MAP >25	70	Not limited		Not limited		Somewhat limited	
						Slope	0.04
1381:							
Lindaas, morainic	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1383A:							
Shorewood, moderately wet	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Value	Off-road motorcycle trails: Rating class and limiting features	Value	Golf fairways: Rating class and limiting features	Value
1388B:							
Terril, moderately wet	85	Not limited		Not limited		Not limited	
1406:							
Medo, ponded	30	Not rated		Not rated		Not rated	
Dassel, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
Biscay, ponded	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
1408B:							
Angus	45	Not limited		Not limited		Not limited	
Kilkenny	40	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
1438B:							
Braham, moderately wet	85	Somewhat limited		Somewhat limited		Not limited	
		Too sandy	0.37	Too sandy	0.37		
1443:							
Belleville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1901B:							
Angus	60	Not limited		Not limited		Not limited	
Le Sueur	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.50	Depth to saturated zone	0.50	Depth to saturated zone	0.78
1931:							
Essexville	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1942:							
Forada, depressional	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
1946:							
Fordum, frequently flooded	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Depth to saturated zone	1.00

Table 12b.--Recreation--Continued

Map symbol and soil name	Pct. of map unit	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
1946:							
Winterfield, frequently flooded	20	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.96	Too sandy	0.96	Flooding	1.00
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
		Flooding	0.40	Flooding	0.40	Droughty	0.22
1975:							
Oylen	90	Not limited		Not limited		Somewhat limited	
						Droughty	0.01
W:							
Water	100	Not rated		Not rated		Not rated	

Table 13.--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 component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
7A:											
Hubbard	95	Fair	Good	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
7B:											
Hubbard	90	Fair	Good	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
7C:											
Hubbard	80	Poor	Good	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
8B:											
Sparta	95	Fair	Fair	Fair	Fair	Good	Very poor	Very poor	Good	Fair	Very poor
35:											
Blue Earth, depressional	80	Fair	Fair	Fair	Fair	Poor	Good	Good	Fair	Poor	Good
74B:											
Dickinson	95	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
86:											
Canisteo	80	Good	Good	Fair	Fair	Fair	Good	Good	Good	Fair	Good
106C2:											
Lester, eroded	70	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
106D2:											
Lester, eroded	80	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
106E:											
Lester	80	Poor	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
109:											
Cordova	90	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
114:											
Glencoe, depressional	90	Good	Good	Fair	Fair	Fair	Good	Good	Good	Fair	Good
138:											
Lerdal	80	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
158A:											
Zimmerman	90	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
158B:											
Zimmerman	90	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
158C:											
Zimmerman	90	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
158E:											
Zimmerman	85	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
169C:											
Braham	90	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
181:											
Litchfield	95	Fair	Good	Good	Good	Good	Fair	Poor	Good	Good	Poor
229:											
Waldorf	90	Good	Good	Good	Good	Good	Good	Good	Good	Fair	Good
231C:											
Lester	80	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
231D:											
Lester	80	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
235:											
Nessel	85	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
239:											
Le Sueur	80	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
247:											
Linder	90	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
255:											
Mayer	85	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
256:											
Mazaska	90	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
258B:											
Sandberg	95	Poor	Fair	Fair	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
258C:											
Sandberg	90	Poor	Fair	Fair	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
258E:											
Sandberg	85	Poor	Fair	Fair	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
260:											
Duelm	90	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
261:											
Isan, depressional	90	Very poor	Poor	Good	Poor	Poor	Good	Good	Poor	Poor	Good
286B:											
Shorewood	95	Good	Good	Good	Good	Good	Poor	Poor	Fair	Good	Poor
294A:											
Rasset	90	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
323:											
Shields	95	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
327A:											
Dickman	85	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
327B:											
Dickman	85	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
375:											
Forada	85	Good	Good	Fair	Fair	Fair	Good	Good	Good	Fair	Good
392:											
Biscay	90	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
406:											
Dorset	90	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
414:											
Hamel	90	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
441:											
Almora	90	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
461B:											
Koronis	85	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
461C2:											
Koronis, eroded	80	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
461E:											
Koronis	80	Poor	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
511:											
Marcellon, MAP <30	85	Good	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
523:											
Houghton, drained	80	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor
525:											
Muskego, surface drained	75	Poor	Poor	Good	Poor	Poor	Good	Good	Poor	Poor	Good
539:											
Klossner, drained	80	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor
540:											
Seelyeville, surface drained	80	Poor	Poor	Good	Poor	Poor	Good	Good	Poor	Poor	Good
543:											
Markey, surface drained	80	Poor	Poor	Good	Poor	Poor	Good	Good	Poor	Poor	Good
548:											
Medo, drained	80	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
603:											
Hanlon, occasionally flooded	80	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
611D:											
Hawick	85	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
708:											
Rushlake	85	Poor	Good	Good	Good	Good	Fair	Poor	Good	Good	Fair
740:											
Hamel	70	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
Glencoe, depressional	20	Good	Good	Fair	Fair	Fair	Good	Good	Good	Fair	Good
768:											
Mosford	85	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
771:											
Elkriver, rarely flooded	85	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
783C2:											
Lester, eroded	50	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Kilkenny, eroded	30	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
792:											
Fordum, frequently flooded	90	Very poor	Very poor	Good	Fair	Fair	Good	Good	Very poor	Fair	Good
799:											
Seelyeville, frequently flooded	45	Very poor	Fair	Good	Poor	Poor	Good	Good	Fair	Poor	Good
Bowstring, frequently flooded	45	Very poor	Fair	Good	Poor	Poor	Good	Good	Fair	Poor	Good
804B:											
Koronis	50	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Sunburg	20	Good	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
Hawick	15	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
804C2:											
Koronis, eroded	45	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Sunburg	25	Good	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
804C2:											
Hawick	15	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
804D2:											
Koronis, eroded	40	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Sunburg	30	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
Hawick	15	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
804E:											
Koronis	50	Poor	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Sunburg	20	Poor	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
Hawick	15	Very poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
807D2:											
Koronis, eroded	65	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Sunburg	20	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
875B:											
Estherville	60	Fair	Fair	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
Hawick	30	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
875C:											
Hawick	60	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
Estherville	25	Fair	Fair	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
896B:											
Kingsley	70	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Gotham	25	Poor	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
896C:											
Kingsley	70	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Gotham	25	Poor	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
945C2:											
Lester, eroded	50	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
945C2:											
Storden, eroded	30	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
945D2:											
Lester, eroded	60	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Storden, eroded	20	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
956:											
Canisteo	65	Good	Good	Fair	Fair	Fair	Good	Good	Good	Fair	Good
Glencoe, depressional	25	Good	Good	Fair	Fair	Fair	Good	Good	Good	Fair	Good
978:											
Cordova	60	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
Rolfe, depressional	30	Fair	Fair	Good	Fair	Poor	Good	Good	Fair	Fair	Good
1000:											
Arvilla, MAP >25	90	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1015.											
Udipsamments (cut and fill land)											
1016.											
Udorthents, loamy											
1023C:											
Lester, eroded	50	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Malardi	35	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1023D:											
Lester, eroded	45	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Malardi	40	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1026B:											
Lizzie, moderately wet	90	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1027.											
Udorthents, wet substratum											
1030:											
Pits, gravel.											
Udipsamments.											
1035B:											
Crowfork	90	Fair	Fair	Fair	Fair	Good	Very poor	Very poor	Good	Fair	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
1035C:											
Crowfork	90	Fair	Fair	Fair	Fair	Good	Very poor	Very poor	Good	Fair	Very poor
1035D:											
Crowfork	85	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
1036B:											
Angus	85	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1037:											
Eckvoll, MAP >25	90	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1038A:											
Verndale, acid substratum	90	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1038B:											
Verndale, acid substratum	85	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1066B:											
Malardi	65	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Hawick	25	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
1066C:											
Malardi	60	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Hawick	25	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
1066E:											
Malardi	55	Poor	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Hawick	30	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
1072.											
Udorthents, shallow											
1075:											
Klossner, ponded	40	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Muskego, ponded	40	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
1080:											
Klossner, ponded	30	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
1080:											
Okoboji, ponded	30	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Glencoe, ponded	30	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
1087B:											
Angus	55	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Malardi	30	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1094B:											
Angus	60	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Cordova	30	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
1099:											
Granby, very wet	85	Poor	Good	Good	Poor	Poor	Good	Good	Good	Poor	Good
1110:											
Isan	90	Poor	Fair	Good	Poor	Poor	Good	Good	Fair	Poor	Good
1156:											
Cordova	85	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
1161:											
Barry	85	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
1163:											
Suckercreek, frequently flooded	85	Poor	Fair	Good	Poor	Poor	Good	Good	Poor	Poor	Good
1165:											
Lundlake, depressional	90	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
1173:											
Muskego, frequently flooded	45	Poor	Poor	Good	Poor	Poor	Good	Good	Poor	Poor	Good
Klossner, frequently flooded	45	Poor	Poor	Good	Poor	Poor	Good	Good	Poor	Poor	Good
1186:											
Forestcity	75	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
Lundlake, depressional	20	Good	Good	Good	Fair	Fair	Good	Good	Good	Fair	Good
1196B:											
Lida	60	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Two Inlets	30	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
1196C:											
Lida	55	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Two Inlets	30	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
1196E:											
Lida	50	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Two Inlets	40	Very poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
1197:											
Suckercreek, occasionally flooded	80	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
1199:											
Klossner, ponded	45	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Lundlake, ponded	45	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
1203:											
Muskego, ponded	30	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Blue Earth, ponded	30	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Houghton, ponded	30	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
1204B:											
Reedslake	85	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1207B:											
Reedslake	60	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Le Sueur	25	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
1213C:											
Cokato, eroded	65	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Storden	20	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
1213D:											
Cokato, eroded	60	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Storden	25	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
1220C:											
Cokato, eroded	50	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Storden	20	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Hawick	15	Poor	Fair	Good	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
1223:											
Sandberg, MAP >25	60	Poor	Fair	Fair	Poor	Fair	Very poor	Very poor	Good	Fair	Very poor
Arvilla, MAP >25	30	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
1224:											
Hubbard	60	Fair	Good	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
Verndale, acid substratum	30	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1231:											
Hubbard	60	Fair	Good	Fair	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
Mosford	30	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1255:											
Elkriver, occasionally flooded	80	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1256:											
Cantlin	90	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1257:											
Elkriver, rarely flooded	55	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Mosford, rarely flooded	35	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1260B:											
Stonelake	55	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Nebish, moderately wet	30	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1260C:											
Stonelake	55	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Nebish	30	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
1260E:											
Stonelake	60	Very poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
Nebish	25	Poor	Fair	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1288:											
Seelyeville, ponded	45	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
Markey, ponded	45	Very poor	Very poor	Good	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
1356.											
Water, miscellaneous											
1362B:											
Angus	85	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1368:											
Southhaven	90	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1377B:											
Dorset	70	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Two Inlets	20	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
1377C:											
Dorset	50	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Two Inlets	35	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
1377D:											
Dorset	45	Poor	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Two Inlets	40	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
1377E:											
Dorset	45	Very poor	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Two Inlets	45	Very poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
1378:											
Fordum, occasionally flooded	85	Poor	Fair	Good	Fair	Fair	Good	Good	Fair	Fair	Good
1379B:											
Dorset	65	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Almora	25	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
1380A:											
Bygland, MAP >25--------	85	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1380B:											
Bygland, MAP >25--------	70	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1380C:											
Bygland, MAP >25--------	70	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1381:											
Lindaas, morainic-------	80	Good	Good	Good	Good	Good	Good	Good	Good	Good	Good
1383A:											
Shorewood, moderately wet----------	95	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
1388B:											
Terril, moderately wet--	85	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
1406:											
Medo, ponded----------	30	Very poor	Poor	Good	Very poor	Very poor	Good	Good	Good	Very poor	Good
Dassel, ponded----------	30	Very poor	Poor	Good	Very poor	Very poor	Good	Good	Good	Very poor	Good
Biscay, ponded----------	30	Very poor	Poor	Good	Very poor	Very poor	Good	Good	Good	Very poor	Good
1408B:											
Angus----------	45	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Kilkenny----------	40	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
1438B:											
Braham, moderately wet--	85	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
1443:											
Belleville----------	85	Fair	Good	Good	Fair	Fair	Good	Good	Fair	Fair	Good
1901B:											
Angus----------	60	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Le Sueur----------	30	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
1931:											
Essexville----------	75	Fair	Fair	Good	Fair	Fair	Good	Good	Fair	Poor	Good
1942:											
Forada, depressional----	85	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
1946:											
Fordum, frequently flooded----------	70	Very poor	Very poor	Good	Fair	Fair	Good	Good	Very poor	Fair	Good

Table 13.--Wildlife Habitat--Continued

Map symbol and component name	Pct. of map unit	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for--: Openland wildlife	Woodland wildlife	Wetland wildlife
1946:											
Winterfield, frequently flooded	20	Poor	Fair	Good	Good	Good	Fair	Fair	Fair	Good	Fair
1975:											
Oylen	90	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
W. Water											

Table 14a.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	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
7A:							
Hubbard	95	Not limited		Not limited		Not limited	
7B:							
Hubbard	90	Not limited		Not limited		Not limited	
7C:							
Hubbard	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
8B:							
Sparta	95	Not limited		Not limited		Not limited	
35:							
Blue Earth, depressional	80	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
		Content of organic matter	1.00			Content of organic matter	1.00
74B:							
Dickinson	95	Not limited		Not limited		Not limited	
86:							
Canisteo	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
106C2:							
Lester, eroded	70	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
106D2:							
Lester, eroded	80	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
106E:							
Lester	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
109:							
Cordova	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
114:							
Glencoe, depressional	90	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
138:							
Lerdal	80	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.99	Shrink-swell	1.00	Depth to saturated zone	0.99
158A:							
Zimmerman	90	Not limited		Not limited		Not limited	
158B:							
Zimmerman	90	Not limited		Not limited		Not limited	
158C:							
Zimmerman	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
158E:							
Zimmerman	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
169C:							
Braham	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Shrink-swell	0.50	Slope	1.00
				Slope	0.04		
181:							
Litchfield	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
229:							
Waldorf	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
231C:							
Lester	80	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
231D:							
Lester	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
235:							
Nessel	85	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
239:							
Le Sueur	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Shrink-swell	0.50			Shrink-swell	0.50
247:							
Linder	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
255:							
Mayer	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
256:							
Mazaska	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00			Shrink-swell	1.00
258B:							
Sandberg	95	Not limited		Not limited		Not limited	
258C:							
Sandberg	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
258E:							
Sandberg	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
260:							
Duelm	90	Not limited		Very limited		Not limited	
				Depth to saturated zone	1.00		
261:							
Isan, depressional	90	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
286B:							
Shorewood	95	Very limited		Very limited		Very limited	
		Shrink-swell	1.00	Depth to saturated zone	1.00	Shrink-swell	1.00
		Depth to saturated zone	0.98	Shrink-swell	1.00	Depth to saturated zone	0.98
294A:							
Rasset	90	Not limited		Not limited		Not limited	
323:							
Shields	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
327A:							
Dickman	85	Not limited		Not limited		Not limited	
327B:							
Dickman	85	Not limited		Not limited		Not limited	
375:							
Forada	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
392:							
Biscay	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
406:							
Dorset	90	Not limited		Not limited		Not limited	
414:							
Hamel	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
441:							
Almora	90	Not limited		Not limited		Not limited	
461B:							
Koronis	85	Not limited		Not limited		Not limited	
461C2:							
Koronis, eroded	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
461E:							
Koronis	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
511:							
Marcellon, MAP <30--	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50			Shrink-swell	0.50
523:							
Houghton, drained	80	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

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
525:							
Muskego, surface drained	75	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
539:							
Klossner, drained	80	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	Shrink-swell	0.50	Content of organic matter	1.00
540:							
Seelyeville, surface drained	80	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
543:							
Markey, surface drained	80	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
548:							
Medo, drained	80	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
603:							
Hanlon, occasionally flooded	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	1.00		
611D:							
Hawick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
708:							
Rushlake	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.39	Depth to saturated zone	1.00	Depth to saturated zone	0.39
740:							
Hamel	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
Glencoe, depressional	20	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
768:							
Mosford	85	Not limited		Not limited		Not limited	
771:							
Elkriver, rarely flooded	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.95		
783C2:							
Lester, eroded	50	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
Kilkenny, eroded	30	Somewhat limited		Very limited		Very limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
				Slope	0.04		
792:							
Fordum, frequently flooded	90	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
799:							
Seelyeville, frequently flooded	45	Very limited		Very limited		Very limited	
		Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
799:							
Bowstring, frequently flooded	45	Very limited		Very limited		Very limited	
		Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
804B:							
Koronis	50	Not limited		Not limited		Not limited	
Sunburg	20	Not limited		Not limited		Not limited	
Hawick	15	Not limited		Not limited		Not limited	
804C2:							
Koronis, eroded	45	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Sunburg	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Hawick	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
804D2:							
Koronis, eroded	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Sunburg	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Hawick	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
804E:							
Koronis	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Sunburg	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Hawick	15	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
807D2:							
Koronis, eroded	65	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Sunburg	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
875B:							
Estherville	60	Not limited		Not limited		Not limited	
Hawick	30	Not limited		Not limited		Not limited	

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
875C:							
Hawick	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Estherville	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
896B:							
Kingsley	70	Not limited		Not limited		Not limited	
Gotham	25	Not limited		Not limited		Not limited	
896C:							
Kingsley	70	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Gotham	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
945C2:							
Lester, eroded	50	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
Storden, eroded	30	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
945D2:							
Lester, eroded	60	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
Storden, eroded	20	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
956:							
Canisteo	65	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
Glencoe, depressional	25	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
978:							
Cordova	60	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
Rolfe, depressional	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1000:							
Arvilla, MAP >25	90	Not limited		Not limited		Not limited	
1015:							
Udipsamments (cut and fill land)	100	Not rated		Not rated		Not rated	
1016:							
Udorthents, loamy	100	Not rated		Not rated		Not rated	
1023C:							
Lester, eroded	50	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
Malardi	35	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
1023D:							
Lester, eroded	45	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
Malardi	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
1026B:							
Lizzie, moderately wet	90	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50
1027:							
Udorthents, wet substratum	100	Not rated		Not rated		Not rated	
1030:							
Pits, gravel	80	Not rated		Not rated		Not rated	
Udipsamments	20	Not rated		Not rated		Not rated	
1035B:							
Crowfork	90	Not limited		Not limited		Not limited	
1035C:							
Crowfork	90	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
1035D:							
Crowfork	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
1036B:							
Angus	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50
				Shrink-swell	0.50		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1037:							
Eckvoll, MAP >25	90	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Depth to saturated zone	0.98
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
1038A:							
Verndale, acid substratum	90	Not limited		Not limited		Not limited	
1038B:							
Verndale, acid substratum	85	Not limited		Not limited		Not limited	
1066B:							
Malardi	65	Not limited		Not limited		Not limited	
Hawick	25	Not limited		Not limited		Not limited	
1066C:							
Malardi	60	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Hawick	25	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.16	Slope	0.16	Slope	1.00
1066E:							
Malardi	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Hawick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
1072:							
Udorthents, shallow	100	Not rated		Not rated		Not rated	
1075:							
Klossner, ponded	40	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	Shrink-swell	0.50	Content of organic matter	1.00
Muskego, ponded	40	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
1080:							
Klossner, ponded	30	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	Shrink-swell	0.50	Content of organic matter	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1080:							
Okoboji, ponded	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
Glencoe, ponded	30	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
1087B:							
Angus	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50
Malardi	30	Not limited		Not limited		Not limited	
1094B:							
Angus	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50
Cordova	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
1099:							
Granby, very wet	85	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
1110:							
Isan	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1156:							
Cordova	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
1161:							
Barry	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
1163:							
Suckercreek, frequently flooded	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1165:							
Lundlake, depressional	90	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
1173:							
Muskego, frequently flooded	45	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
Klossner, frequently flooded	45	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Subsidence	1.00	Subsidence	1.00	Subsidence	1.00
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Content of organic matter	1.00	Shrink-swell	0.50	Content of organic matter	1.00
1186:							
Forestcity	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Lundlake, depressional	20	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
1196B:							
Lida	60	Not limited		Not limited		Not limited	
Two Inlets	30	Not limited		Not limited		Not limited	
1196C:							
Lida	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
Two Inlets	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.37	Slope	0.37	Slope	1.00
1196E:							
Lida	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Two Inlets	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1197:							
Suckercreek, occasionally flooded	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
1199:							
Klossner, ponded	45	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	Shrink-swell	0.50	Content of organic matter	1.00
Lundlake, ponded	45	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
1203:							
Muskego, ponded	30	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
Blue Earth, ponded	30	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
		Content of organic matter	1.00	Content of organic matter	1.00	Content of organic matter	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Houghton, ponded	30	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
1204B:							
Reedslake	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50
1207B:							
Reedslake	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1207B:							
Le Sueur	25	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
1213C:							
Cokato, eroded	65	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Storden	20	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
1213D:							
Cokato, eroded	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Storden	25	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
1220C:							
Cokato, eroded	50	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Storden	20	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
Hawick	15	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
1223:							
Sandberg, MAP >25	60	Not limited		Not limited		Not limited	
Arvilla, MAP >25	30	Not limited		Not limited		Not limited	
1224:							
Hubbard	60	Not limited		Not limited		Not limited	
Verndale, acid substratum	30	Not limited		Not limited		Not limited	
1231:							
Hubbard	60	Not limited		Not limited		Not limited	
Mosford	30	Not limited		Not limited		Not limited	
1255:							
Elkriver, occasionally flooded	80	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
1256:							
Cantlin	90	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.82		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1257:							
Elkriver, rarely flooded	55	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.95		
Mosford, rarely flooded	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.95		
1260B:							
Stonelake	55	Not limited		Not limited		Not limited	
Nebish, moderately wet	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50
				Shrink-swell	0.50		
1260C:							
Stonelake	55	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Nebish	30	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Slope	0.04	Slope	1.00
		Slope	0.04			Shrink-swell	0.50
1260E:							
Stonelake	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
Nebish	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
1288:							
Seelyeville, ponded	45	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
Markey, ponded	45	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
1356:							
Water, miscellaneous	100	Not rated		Not rated		Not rated	

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1362B:							
Angus	85	Somewhat limited Shrink-swell	0.50	Somewhat limited Depth to saturated zone	0.78	Somewhat limited Shrink-swell	0.50
1368:							
Southhaven	90	Not limited		Somewhat limited Depth to saturated zone	0.82	Not limited	
1377B:							
Dorset	70	Not limited		Not limited		Not limited	
Two Inlets	20	Not limited		Not limited		Not limited	
1377C:							
Dorset	50	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
Two Inlets	35	Somewhat limited Slope	0.04	Somewhat limited Slope	0.04	Very limited Slope	1.00
1377D:							
Dorset	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Two Inlets	40	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
1377E:							
Dorset	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
Two Inlets	45	Very limited Slope	1.00	Very limited Slope	1.00	Very limited Slope	1.00
1378:							
Fordum, occasionally flooded	85	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00	Very limited Flooding Depth to saturated zone	1.00 1.00
1379B:							
Dorset	65	Not limited		Not limited		Not limited	
Almora	25	Not limited		Not limited		Not limited	
1380A:							
Bygland, MAP >25	85	Very limited Shrink-swell	1.00	Very limited Depth to saturated zone Shrink-swell	1.00 0.50	Very limited Shrink-swell	1.00
1380B:							
Bygland, MAP >25	70	Very limited Shrink-swell	1.00	Somewhat limited Depth to saturated zone Shrink-swell	0.95 0.50	Very limited Shrink-swell	1.00

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1380C:							
Bygland, MAP >25	70	Somewhat limited		Somewhat limited		Very limited	
		Shrink-swell	0.50	Depth to saturated zone	0.95	Slope	1.00
		Slope	0.04	Shrink-swell	0.50	Shrink-swell	0.50
				Slope	0.04		
1381:							
Lindaas, morainic	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	0.50	Shrink-swell	1.00
1383A:							
Shorewood, moderately wet	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	1.00	Shrink-swell	1.00	Shrink-swell	1.00
1388B:							
Terril, moderately wet	85	Not limited		Somewhat limited		Not limited	
				Depth to saturated zone	0.78		
1406:							
Medo, ponded	30	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
		Shrink-swell	0.50			Shrink-swell	0.50
Dassel, ponded	30	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
Biscay, ponded	30	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
1408B:							
Angus	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78	Shrink-swell	0.50
Kilkenny	40	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Shrink-swell	0.50			Shrink-swell	0.50
1438B:							
Braham, moderately wet	85	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Shrink-swell	0.50
				Shrink-swell	0.50		

Table 14a.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Dwellings without basements: Rating class and limiting features	Value	Dwellings with basements: Rating class and limiting features	Value	Small commercial buildings: Rating class and limiting features	Value
1443:							
Belleville	85	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00
1901B:							
Angus	60	Somewhat limited Shrink-swell	 0.50	Somewhat limited Depth to saturated zone	 0.78	Somewhat limited Shrink-swell	 0.50
Le Sueur	30	Somewhat limited Depth to saturated zone Shrink-swell	 0.99 0.50	Very limited Depth to saturated zone Shrink-swell	 1.00 0.50	Very limited Depth to saturated zone Shrink-swell	 0.99 0.50
1931:							
Essexville	75	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00	Very limited Depth to saturated zone	 1.00
1942:							
Forada, depressional	85	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
1946:							
Fordum, frequently flooded	70	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 1.00
Winterfield, frequently flooded	20	Very limited Flooding Depth to saturated zone	 1.00 0.98	Very limited Flooding Depth to saturated zone	 1.00 1.00	Very limited Flooding Depth to saturated zone	 1.00 0.98
1975:							
Oylen	90	Not limited		Very limited Depth to saturated zone	 1.00	Not limited	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 14b.--Building Site Development

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the limitation. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	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
7A:							
Hubbard	95	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.50
7B:							
Hubbard	90	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.59
7C:							
Hubbard	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.83
				Slope	0.04	Slope	0.04
8B:							
Sparta	95	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.15
35:							
Blue Earth, depressional	80	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	Content of organic matter	1.00		
				Cutbanks cave	0.10		
74B:							
Dickinson	95	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
86:							
Canisteo	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
106C2:							
Lester, eroded	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
106D2:							
Lester, eroded	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
106E:							
Lester	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
109:							
Cordova	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
114:							
Glencoe, depressional	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
138:							
Lerdal	80	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Shrink-swell	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.78				
158A:							
Zimmerman	90	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.34
158B:							
Zimmerman	90	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.34
158C:							
Zimmerman	90	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.34
				Slope	0.04	Slope	0.04
158E:							
Zimmerman	85	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Droughty	0.34
169C:							
Braham	90	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Slope	0.04
				Slope	0.04		
181:							
Litchfield	95	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.90	Depth to saturated zone	1.00	Depth to saturated zone	0.90
		Frost action	0.50	Cutbanks cave	1.00		
229:							
Waldorf	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Too clayey	0.28		
		Shrink-swell	1.00	Cutbanks cave	0.10		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
231C:							
Lester	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
231D:							
Lester	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
235:							
Nessel	85	Very limited		Very limited		Not limited	
		Frost action	1.00	Depth to saturated zone	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
239:							
Le Sueur	80	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Depth to saturated zone	0.78	Cutbanks cave	0.10		
		Shrink-swell	0.50				
247:							
Linder	90	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.90
		Depth to saturated zone	0.90	Cutbanks cave	1.00		
255:							
Mayer	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
256:							
Mazaska	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.03		
258B:							
Sandberg	95	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.79
258C:							
Sandberg	90	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.79
				Slope	0.04	Slope	0.04
258E:							
Sandberg	85	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Droughty	0.79

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
260:							
Duelm	90	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.21
				Depth to saturated zone	1.00		
261:							
Isan, depressional	90	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	0.04
286B:							
Shorewood	95	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Shrink-swell	1.00	Too clayey	0.15		
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
294A:							
Rasset	90	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
323:							
Shields	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Too clayey	0.12		
		Shrink-swell	1.00	Cutbanks cave	0.10		
327A:							
Dickman	85	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.07
327B:							
Dickman	85	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.07
375:							
Forada	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
392:							
Biscay	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
		Shrink-swell	0.50				
406:							
Dorset	90	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
414:							
Hamel	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
441:							
Almora	90	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
461B:							
Koronis	85	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Cutbanks cave	0.10		
461C2:							
Koronis, eroded	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
461E:							
Koronis	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
511:							
Marcellon, MAP <30--	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Cutbanks cave	0.10		
		Shrink-swell	0.50				
523:							
Houghton, drained	80	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
525:							
Muskego, surface drained	75	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
539:							
Klossner, drained	80	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
540:							
Seelyeville, surface drained	80	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
543:							
Markey, surface drained	80	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Cutbanks cave	1.00		
		Frost action	1.00	Content of organic matter	1.00		
548:							
Medo, drained	80	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Cutbanks cave	1.00		
		Frost action	1.00	Content of organic matter	1.00		
603:							
Hanlon, occasionally flooded	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Depth to saturated zone	1.00		
				Flooding	0.60		
611D:							
Hawick	85	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Droughty	1.00
708:							
Rushlake	85	Somewhat limited		Very limited		Very limited	
		Frost action	0.50	Depth to saturated zone	1.00	Too sandy	1.00
		Depth to saturated zone	0.19	Cutbanks cave	1.00	Droughty	0.92
						Depth to saturated zone	0.19
740:							
Hamel	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	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
740:							
Glencoe, depressional	20	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
768:							
Mosford	85	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
771:							
Elkriver, rarely flooded	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
		Flooding	0.40	Depth to saturated zone	0.95		
783C2:							
Lester, eroded	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Kilkenny, eroded	30	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Slope	0.04
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Slope	0.04	Slope	0.04		
792:							
Fordum, frequently flooded	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.80		
799:							
Seelyeville, frequently flooded	45	Very limited		Very limited		Not rated	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Flooding	0.80		
		Flooding	1.00	Cutbanks cave	0.10		
Bowstring, frequently flooded	45	Very limited		Very limited		Not rated	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Cutbanks cave	1.00		
		Frost action	1.00	Content of organic matter	1.00		
		Flooding	1.00	Flooding	0.80		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
804B:							
Koronis	50	Somewhat limited Frost action	 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
Sunburg	20	Somewhat limited Frost action	 0.50	Somewhat limited Cutbanks cave	 0.10	Not limited	
Hawick	15	Not limited		Very limited Cutbanks cave	 1.00	Somewhat limited Droughty	 0.91
804C2:							
Koronis, eroded	45	Somewhat limited Frost action Slope	 0.50 0.04	Somewhat limited Cutbanks cave Slope	 0.10 0.04	Somewhat limited Slope	 0.04
Sunburg	25	Somewhat limited Frost action Slope	 0.50 0.04	Somewhat limited Cutbanks cave Slope	 0.10 0.04	Somewhat limited Slope	 0.04
Hawick	15	Somewhat limited Slope	 0.04	Very limited Cutbanks cave Slope	 1.00 0.04	Somewhat limited Droughty Slope	 0.91 0.04
804D2:							
Koronis, eroded	40	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope	 1.00
Sunburg	30	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope	 1.00
Hawick	15	Very limited Slope	 1.00	Very limited Cutbanks cave Slope	 1.00 1.00	Very limited Slope Droughty	 1.00 0.91
804E:							
Koronis	50	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope	 1.00
Sunburg	20	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope	 1.00
Hawick	15	Very limited Slope	 1.00	Very limited Slope Cutbanks cave	 1.00 1.00	Very limited Slope Droughty Too sandy	 1.00 0.98 0.50
807D2:							
Koronis, eroded	65	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope	 1.00
Sunburg	20	Very limited Slope Frost action	 1.00 0.50	Very limited Slope Cutbanks cave	 1.00 0.10	Very limited Slope	 1.00

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
875B:							
Estherville---------	60	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.12
Hawick----------	30	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.91
875C:							
Hawick----------	60	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.91
				Slope	0.04	Slope	0.04
Estherville---------	25	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.12
				Slope	0.04	Slope	0.04
896B:							
Kingsley----------	70	Not limited		Somewhat limited		Not limited	
				Cutbanks cave	0.10		
Gotham----------	25	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.01
896C:							
Kingsley----------	70	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		
Gotham----------	25	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Slope	0.04
				Slope	0.04	Droughty	0.01
945C2:							
Lester, eroded------	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Storden, eroded-----	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
945D2:							
Lester, eroded------	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Storden, eroded-----	20	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
956:							
Canisteo----------	65	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
956:							
Glencoe, depressional	25	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
		Shrink-swell	0.50				
978:							
Cordova	60	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Rolfe, depressional	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00	Too clayey	0.02		
1000:							
Arvilla, MAP >25	90	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.10
1015:							
Udipsamments (cut and fill land)	100	Not rated		Not rated		Not rated	
1016:							
Udorthents, loamy	100	Not rated		Not rated		Not rated	
1023C:							
Lester, eroded	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Malardi	35	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.06
		Slope	0.04	Slope	0.04	Slope	0.04
1023D:							
Lester, eroded	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
Malardi	40	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.32
1026B:							
Lizzie, moderately wet	90	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Depth to saturated zone	0.78		
		Shrink-swell	0.50	Cutbanks cave	0.10		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1027:							
Udorthents, wet substratum	100	Not rated		Not rated		Not rated	
1030:							
Pits, gravel	80	Not rated		Not rated		Not rated	
Udipsamments	20	Not rated		Not rated		Not rated	
1035B:							
Crowfork	90	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.02
1035C:							
Crowfork	90	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Slope	0.04
				Slope	0.04	Droughty	0.02
1035D:							
Crowfork	85	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Droughty	0.02
1036B:							
Angus	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		
1037:							
Eckvoll, MAP >25	90	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Cutbanks cave	1.00		
		Shrink-swell	0.50				
1038A:							
Verndale, acid substratum	90	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
1038B:							
Verndale, acid substratum	85	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
1066B:							
Malardi	65	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.06
Hawick	25	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.91
1066C:							
Malardi	60	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.06
		Slope	0.04	Slope	0.04	Slope	0.04
Hawick	25	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.16	Cutbanks cave	1.00	Droughty	0.91
				Slope	0.16	Slope	0.16

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1066E:							
Malardi	55	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.32
Hawick	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.91
1072:							
Udorthents, shallow	100	Not rated		Not rated		Not rated	
1075:							
Klossner, ponded	40	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
Muskego, ponded	40	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
1080:							
Klossner, ponded	30	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
Okoboji, ponded	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	1.00				
Glencoe, ponded	30	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1087B:							
Angus	55	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50				
				Cutbanks cave	0.10		
Malardi	30	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.06

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	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
1094B:							
Angus	60	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		
Cordova	30	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1099:							
Granby, very wet	85	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	Droughty	0.13
1110:							
Isan	90	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.03
1156:							
Cordova	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1161:							
Barry	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1163:							
Suckercreek, frequently flooded	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.80		
1165:							
Lundlake, depressional	90	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1173:							
Muskego, frequently flooded	45	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Flooding	0.80		
		Flooding	1.00	Cutbanks cave	0.10		
Klossner, frequently flooded	45	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Flooding	0.80		
		Flooding	1.00	Cutbanks cave	0.10		
1186:							
Forestcity	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
Lundlake, depressional	20	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1196B:							
Lida	60	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.16
						Content of large stones	0.01
Two Inlets	30	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.80
1196C:							
Lida	55	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.37	Cutbanks cave	1.00	Slope	0.37
				Slope	0.37	Droughty	0.16
						Content of large stones	0.01
Two Inlets	30	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.37	Cutbanks cave	1.00	Droughty	0.80
				Slope	0.37	Slope	0.37

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	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
1196E:							
Lida	50	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.16
						Content of large stones	0.01
Two Inlets	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.76
1197:							
Suckercreek, occasionally flooded	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Cutbanks cave	0.10		
1199:							
Klossner, ponded	45	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
Lundlake, ponded	45	Very limited		Very limited		Very limited	
		Ponding	1.00	Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1203:							
Muskego, ponded	30	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
Blue Earth, ponded	30	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	Content of organic matter	1.00		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Houghton, ponded	30	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1204B:							
Reedslake	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		
1207B:							
Reedslake	60	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		
Le Sueur	25	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Depth to saturated zone	0.78	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1213C:							
Cokato, eroded	65	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Storden	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
1213D:							
Cokato, eroded	60	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
Storden	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
1220C:							
Cokato, eroded	50	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	0.10	Slope	0.04
		Slope	0.04	Slope	0.04		
Storden	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
Hawick	15	Somewhat limited		Very limited		Very limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	1.00
				Slope	0.04	Slope	0.04
1223:							
Sandberg, MAP >25	60	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Too sandy	0.50
						Droughty	0.41
Arvilla, MAP >25	30	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.27

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1224:							
Hubbard	60	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.85
						Too sandy	0.50
Verndale, acid substratum	30	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
1231:							
Hubbard	60	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.50
Mosford	30	Not limited		Very limited		Not limited	
				Cutbanks cave	1.00		
1255:							
Elkriver, occasionally flooded	80	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.75	Cutbanks cave	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60		
1256:							
Cantlin	90	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.57
				Depth to saturated zone	0.82		
1257:							
Elkriver, rarely flooded	55	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
		Flooding	0.40	Depth to saturated zone	0.95		
Mosford, rarely flooded	35	Somewhat limited		Very limited		Somewhat limited	
		Flooding	0.40	Cutbanks cave	1.00	Droughty	0.01
				Depth to saturated zone	0.95		
1260B:							
Stonelake	55	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.82
						Too sandy	0.50
Nebish, moderately wet	30	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		
1260C:							
Stonelake	55	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.88
				Slope	0.04	Slope	0.04

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1260C:							
Nebish	30	Somewhat limited		Somewhat limited		Somewhat limited	
		Shrink-swell	0.50	Cutbanks cave	0.10	Slope	0.04
		Frost action	0.50	Slope	0.04		
		Slope	0.04				
1260E:							
Stonelake	60	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Droughty	0.99
						Gravel content	0.36
						Content of large stones	0.01
Nebish	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Frost action	0.50				
1288:							
Seelyeville, ponded	45	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Content of organic matter	1.00		
		Frost action	1.00	Cutbanks cave	0.10		
Markey, ponded	45	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Cutbanks cave	1.00		
		Frost action	1.00	Content of organic matter	1.00		
1356:							
Water, miscellaneous	100	Not rated		Not rated		Not rated	
1362B:							
Angus	85	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		
1368:							
Southhaven	90	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
				Depth to saturated zone	0.82		
1377B:							
Dorset	70	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
Two Inlets	20	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.80

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1377C:							
Dorset	50	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Slope	0.04
		Slope	0.04	Slope	0.04		
Two Inlets	35	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.04	Cutbanks cave	1.00	Droughty	0.80
				Slope	0.04	Slope	0.04
1377D:							
Dorset	45	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.17
Two Inlets	40	Very limited		Very limited		Very limited	
		Slope	1.00	Cutbanks cave	1.00	Slope	1.00
				Slope	1.00	Droughty	0.80
1377E:							
Dorset	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.12
Two Inlets	45	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Cutbanks cave	1.00	Droughty	0.76
1378:							
Fordum, occasionally flooded	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00	Flooding	0.60
		Flooding	1.00	Flooding	0.60		
1379B:							
Dorset	65	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
Almora	25	Somewhat limited		Very limited		Not limited	
		Frost action	0.50	Cutbanks cave	1.00		
1380A:							
Bygland, MAP >25	85	Very limited		Very limited		Not limited	
		Frost action	1.00	Depth to saturated zone	1.00		
		Shrink-swell	1.00	Cutbanks cave	0.10		
				Too clayey	0.04		
1380B:							
Bygland, MAP >25	70	Very limited		Somewhat limited		Not limited	
		Frost action	1.00	Depth to saturated zone	0.95		
		Shrink-swell	1.00	Cutbanks cave	0.10		
				Too clayey	0.04		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1380C:							
Bygland, MAP >25----	70	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	0.95	Slope	0.04
		Shrink-swell	0.50	Cutbanks cave	0.10		
		Slope	0.04	Too clayey	0.04		
				Slope	0.04		
1381:							
Lindaas, morainic---	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Too clayey	0.12		
		Shrink-swell	1.00	Cutbanks cave	0.10		
1383A:							
Shorewood, moderately wet-----	95	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Too clayey	0.15		
		Shrink-swell	1.00	Cutbanks cave	0.10		
1388B:							
Terril, moderately wet----------	85	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Depth to saturated zone	0.78		
				Cutbanks cave	0.10		
1406:							
Medo, ponded--------	30	Very limited		Very limited		Not rated	
		Ponding	1.00	Ponding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Subsidence	1.00	Cutbanks cave	1.00		
		Frost action	1.00	Content of organic matter	1.00		
		Shrink-swell	0.50				
Dassel, ponded------	30	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		
Biscay, ponded------	30	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		
		Shrink-swell	0.50				
1408B:							
Angus----------	45	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Value	Shallow excavations: Rating class and limiting features	Value	Lawns and landscaping: Rating class and limiting features	Value
1408B:							
Kilkenny	40	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1438B:							
Braham, moderately wet	85	Somewhat limited		Very limited		Not limited	
		Shrink-swell	0.50	Cutbanks cave	1.00		
				Depth to saturated zone	1.00		
1443:							
Belleville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
1901B:							
Angus	60	Somewhat limited		Somewhat limited		Not limited	
		Shrink-swell	0.50	Depth to saturated zone	0.78		
		Frost action	0.50	Cutbanks cave	0.10		
Le Sueur	30	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Depth to saturated zone	0.78	Cutbanks cave	0.10		
		Shrink-swell	0.50				
1931:							
Essexville	75	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	1.00		
1942:							
Forada, depressional	85	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		
1946:							
Fordum, frequently flooded	70	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Frost action	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
		Flooding	1.00	Flooding	0.80		
Winterfield, frequently flooded	20	Very limited		Very limited		Very limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	1.00
		Depth to saturated zone	0.75	Cutbanks cave	1.00	Depth to saturated zone	0.75
		Frost action	0.50	Flooding	0.80	Droughty	0.22

Table 14b.--Building Site Development--Continued

Map symbol and soil name	Pct. of map unit	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
1975:							
Oylen	90	Somewhat limited Frost action	0.50	Very limited Cutbanks cave Depth to saturated zone	1.00 1.00	Somewhat limited Droughty	0.01
W:							
Water	100	Not rated		Not rated		Not rated	

Table 15a.--Construction Materials

(The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation. The ratings given for the thickest layer are for the thickest layer above and excluding the bottom layer. The numbers in the value columns range from 0.00 to 0.99. The greater the value, the greater the likelihood that the bottom layer or thickest layer of the soil is a source of sand or gravel. See text for further explanation of ratings in this table)

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
7A:					
Hubbard	95	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.10
		Thickest layer	0.00	Bottom layer	0.86
7B:					
Hubbard	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.10
		Thickest layer	0.00	Bottom layer	0.86
7C:					
Hubbard	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.51
		Thickest layer	0.00	Bottom layer	0.58
8B:					
Sparta	95	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.10
		Thickest layer	0.00	Bottom layer	0.82
35:					
Blue Earth, depressional	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
74B:					
Dickinson	95	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.64
86:					
Canisteo	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
106C2:					
Lester, eroded	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
106D2:					
Lester, eroded	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
106E:					
Lester	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
109:					
Cordova	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
114:					
Glencoe, depressional	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
138:					
Lerdal	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
158A:					
Zimmerman	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.28
		Thickest layer	0.00	Bottom layer	0.36
158B:					
Zimmerman	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.28
		Thickest layer	0.00	Bottom layer	0.36
158C:					
Zimmerman	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.28
		Thickest layer	0.00	Bottom layer	0.36
158E:					
Zimmerman	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.28
		Thickest layer	0.00	Bottom layer	0.36
169C:					
Braham	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.08
181:					
Litchfield	95	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.02
		Thickest layer	0.00	Thickest layer	0.07
229:					
Waldorf	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
231C:					
Lester	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
231D:					
Lester	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
235:					
Nessel	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
239:					
Le Sueur	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
247:					
Linder	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.17
255:					
Mayer	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.08	Bottom layer	0.58
256:					
Mazaska	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
258B:					
Sandberg	95	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.11
		Bottom layer	0.08	Bottom layer	0.58
258C:					
Sandberg	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.11
		Bottom layer	0.08	Bottom layer	0.58
258E:					
Sandberg	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.11
		Bottom layer	0.08	Bottom layer	0.58
260:					
Duelm	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.11
		Thickest layer	0.00	Bottom layer	0.66
261:					
Isan, depressional	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.08
		Thickest layer	0.00	Bottom layer	0.66
286B:					
Shorewood	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
294A:					
Rasset	90	Poor		Fair	
		Thickest layer	0.00	Thickest layer	0.02
		Bottom layer	0.00	Bottom layer	0.86

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
323:					
Shields	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
327A:					
Dickman	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.11
		Thickest layer	0.00	Bottom layer	0.79
327B:					
Dickman	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.11
		Thickest layer	0.00	Bottom layer	0.79
375:					
Forada	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.01	Bottom layer	0.54
392:					
Biscay	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.08	Bottom layer	0.08
406:					
Dorset	90	Fair		Fair	
		Bottom layer	0.08	Thickest layer	0.08
		Thickest layer	0.08	Bottom layer	0.58
414:					
Hamel	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
441:					
Almora	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.16	Bottom layer	0.58
461B:					
Koronis	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
461C2:					
Koronis, eroded	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
461E:					
Koronis	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
511:					
Marcellon, MAP <30--	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
523:					
Houghton, drained	80	Not rated		Not rated	
525:					
Muskego, surface drained	75	Not rated		Not rated	
539:					
Klossner, drained	80	Not rated		Not rated	
540:					
Seelyeville, surface drained	80	Not rated		Not rated	
543:					
Markey, surface drained	80	Not rated		Not rated	
548:					
Medo, drained	80	Not rated		Not rated	
603:					
Hanlon, occasionally flooded	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.06
611D:					
Hawick	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
708:					
Rushlake	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.51
		Bottom layer	0.01	Bottom layer	0.57
740:					
Hamel	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Glencoe, depressional	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
768:					
Mosford	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.69
		Thickest layer	0.00	Bottom layer	0.79
771:					
Elkriver, rarely flooded	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.91
783C2:					
Lester, eroded	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
783C2:					
Kilkenny, eroded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
792:					
Fordum, frequently flooded	90	Fair		Fair	
		Bottom layer	0.16	Thickest layer	0.01
		Thickest layer	0.16	Bottom layer	0.86
799:					
Seelyeville, frequently flooded	45	Not rated		Not rated	
Bowstring, frequently flooded	45	Not rated		Not rated	
804B:					
Koronis	50	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Sunburg	20	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Hawick	15	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
804C2:					
Koronis, eroded	45	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Sunburg	25	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Hawick	15	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
804D2:					
Koronis, eroded	40	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Sunburg	30	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Hawick	15	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
804E:					
Koronis	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
804E:					
Sunburg	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hawick	15	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.58
807D2:					
Koronis, eroded	65	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Sunburg	20	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
875B:					
Estherville	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.04
		Bottom layer	0.05	Bottom layer	0.69
Hawick	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
875C:					
Hawick	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
Estherville	25	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.04
		Bottom layer	0.05	Bottom layer	0.69
896B:					
Kingsley	70	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Gotham	25	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.64
		Thickest layer	0.00	Bottom layer	0.86
896C:					
Kingsley	70	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.03
		Thickest layer	0.00	Thickest layer	0.04
Gotham	25	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.64
		Thickest layer	0.00	Bottom layer	0.86
945C2:					
Lester, eroded	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Storden, eroded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
945D2:					
Lester, eroded------	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Storden, eroded-----	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
956:					
Canisteo----------	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Glencoe, depressional-------	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
978:					
Cordova----------	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rolfe, depressional	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1000:					
Arvilla, MAP >25----	90	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.04
		Bottom layer	0.12	Bottom layer	0.53
1015:					
Udipsamments (cut and fill land)-----	100	Not rated		Not rated	
1016:					
Udorthents, loamy---	100	Not rated		Not rated	
1023C:					
Lester, eroded------	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Malardi----------	35	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.05	Bottom layer	0.86
1023D:					
Lester, eroded------	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Malardi----------	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.05	Bottom layer	0.86

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
1026B:					
Lizzie, moderately wet	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1027:					
Udorthents, wet substratum	100	Not rated		Not rated	
1030:					
Pits, gravel	80	Not rated		Not rated	
Udipsamments	20	Not rated		Not rated	
1035B:					
Crowfork	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.09
		Thickest layer	0.00	Bottom layer	0.91
1035C:					
Crowfork	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.09
		Thickest layer	0.00	Bottom layer	0.91
1035D:					
Crowfork	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.09
		Thickest layer	0.00	Bottom layer	0.91
1036B:					
Angus	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1037:					
Eckvoll, MAP >25	90	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1038A:					
Verndale, acid substratum	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.86
1038B:					
Verndale, acid substratum	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.86
1066B:					
Malardi	65	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.05	Bottom layer	0.86
Hawick	25	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
1066C:					
Malardi	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.05	Bottom layer	0.86
Hawick	25	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
1066E:					
Malardi	55	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.05	Bottom layer	0.86
Hawick	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
1072:					
Udorthents, shallow	100	Not rated		Not rated	
1075:					
Klossner, ponded	40	Not rated		Not rated	
Muskego, ponded	40	Not rated		Not rated	
1080:					
Klossner, ponded	30	Not rated		Not rated	
Okoboji, ponded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Glencoe, ponded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1087B:					
Angus	55	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Malardi	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.05	Bottom layer	0.86
1094B:					
Angus	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Cordova	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1099:					
Granby, very wet	85	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.02
		Thickest layer	0.00	Thickest layer	0.07

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1110:					
Isan	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.66
1156:					
Cordova	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1161:					
Barry	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
1163:					
Suckercreek, frequently flooded	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.07
1165:					
Lundlake, depressional	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.03
		Thickest layer	0.00	Bottom layer	0.03
1173:					
Muskego, frequently flooded	45	Not rated		Not rated	
Klossner, frequently flooded	45	Not rated		Not rated	
1186:					
Forestcity	75	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
Lundlake, depressional	20	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
1196B:					
Lida	60	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.06
		Bottom layer	0.12	Bottom layer	0.51
Two Inlets	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.91
1196C:					
Lida	55	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.06
		Bottom layer	0.12	Bottom layer	0.51
Two Inlets	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.91

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
1196E:					
Lida	50	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.06
		Bottom layer	0.12	Bottom layer	0.51
Two Inlets	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.91
1197:					
Suckercreek, occasionally flooded	80	Poor		Poor	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
1199:					
Klossner, ponded	45	Not rated		Not rated	
Lundlake, ponded	45	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
1203:					
Muskego, ponded	30	Not rated		Not rated	
Blue Earth, ponded	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Houghton, ponded	30	Not rated		Not rated	
1204B:					
Reedslake	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1207B:					
Reedslake	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Le Sueur	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1213C:					
Cokato, eroded	65	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Storden	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1213D:					
Cokato, eroded	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1213D:					
Storden	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1220C:					
Cokato, eroded	50	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Storden	20	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Hawick	15	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.08	Bottom layer	0.58
1223:					
Sandberg, MAP >25	60	Fair		Fair	
		Thickest layer	0.01	Thickest layer	0.51
		Bottom layer	0.08	Bottom layer	0.58
Arvilla, MAP >25	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.07
		Bottom layer	0.12	Bottom layer	0.53
1224:					
Hubbard	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.08
		Thickest layer	0.00	Bottom layer	0.86
Verndale, acid substratum	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.69
		Thickest layer	0.00	Bottom layer	0.86
1231:					
Hubbard	60	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.10
		Thickest layer	0.00	Bottom layer	0.86
Mosford	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.69
		Thickest layer	0.00	Bottom layer	0.79
1255:					
Elkriver, occasionally flooded	80	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.91
1256:					
Cantlin	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.08
		Thickest layer	0.00	Bottom layer	0.30

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
1257:					
Elkriver, rarely flooded	55	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.91
Mosford, rarely flooded	35	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.79
1260B:					
Stonelake	55	Fair		Fair	
		Bottom layer	0.35	Thickest layer	0.10
		Thickest layer	0.54	Bottom layer	0.82
Nebish, moderately wet	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1260C:					
Stonelake	55	Fair		Fair	
		Bottom layer	0.35	Bottom layer	0.54
		Thickest layer	0.54	Thickest layer	0.64
Nebish	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1260E:					
Stonelake	60	Fair		Fair	
		Bottom layer	0.35	Bottom layer	0.54
		Thickest layer	0.54	Thickest layer	0.64
Nebish	25	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1288:					
Seelyeville, ponded	45	Not rated		Not rated	
Markey, ponded	45	Not rated		Not rated	
1356:					
Water, miscellaneous	100	Not rated		Not rated	
1362B:					
Angus	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1368:					
Southhaven	90	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.86
1377B:					
Dorset	70	Fair		Fair	
		Bottom layer	0.08	Thickest layer	0.08
		Thickest layer	0.08	Bottom layer	0.58

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
1377B:					
Two Inlets	20	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.91
1377C:					
Dorset	50	Fair		Fair	
		Bottom layer	0.08	Thickest layer	0.08
		Thickest layer	0.08	Bottom layer	0.58
Two Inlets	35	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.91
1377D:					
Dorset	45	Fair		Fair	
		Bottom layer	0.08	Thickest layer	0.08
		Thickest layer	0.08	Bottom layer	0.86
Two Inlets	40	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.91
1377E:					
Dorset	45	Fair		Fair	
		Bottom layer	0.08	Thickest layer	0.08
		Thickest layer	0.08	Bottom layer	0.86
Two Inlets	45	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.13
		Bottom layer	0.08	Bottom layer	0.91
1378:					
Fordum, occasionally flooded	85	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.06
1379B:					
Dorset	65	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.08	Bottom layer	0.86
Almora	25	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.16	Bottom layer	0.58
1380A:					
Bygland, MAP >25	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1380B:					
Bygland, MAP >25	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1380C:					
Bygland, MAP >25	70	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel: Rating class	Value	Potential source of sand: Rating class	Value
1381:					
Lindaas, morainic	80	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1383A:					
Shorewood, moderately wet	95	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1388B:					
Terril, moderately wet	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1406:					
Medo, ponded	30	Not rated		Not rated	
Dassel, ponded	30	Poor		Fair	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.09
Biscay, ponded	30	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.08	Bottom layer	0.08
1408B:					
Angus	45	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Kilkenny	40	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1438B:					
Braham, moderately wet	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1443:					
Belleville	85	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1901B:					
Angus	60	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Le Sueur	30	Poor		Poor	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
1931:					
Essexville	75	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.36

Table 15a.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of gravel		Potential source of sand	
		Rating class	Value	Rating class	Value
1942:					
Forada, depressional	85	Fair		Fair	
		Thickest layer	0.00	Thickest layer	0.04
		Bottom layer	0.01	Bottom layer	0.54
1946:					
Fordum, frequently flooded	70	Fair		Fair	
		Bottom layer	0.16	Thickest layer	0.01
		Thickest layer	0.16	Bottom layer	0.86
Winterfield, frequently flooded	20	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.86
		Thickest layer	0.00	Thickest layer	0.86
1975:					
Oylen	90	Poor		Fair	
		Bottom layer	0.00	Bottom layer	0.58
		Thickest layer	0.00	Thickest layer	0.72
W:					
Water	100	Not rated		Not rated	

Table 15b.--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	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
7A:							
Hubbard	95	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.01
		Too sandy	0.01				
		Low content of organic matter	0.12				
		Droughty	0.81				
		Too acid	0.92				
7B:							
Hubbard	90	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.01
		Too sandy	0.01				
		Low content of organic matter	0.12				
		Droughty	0.77				
		Too acid	0.92				
7C:							
Hubbard	80	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	0.60				
		Too acid	0.92				
8B:							
Sparta	95	Poor		Good		Poor	
		Wind erosion	0.00			Too sandy	0.00
		Too sandy	0.00				
		Low content of organic matter	0.12				
		Droughty	0.64				
		Too acid	0.92				
35:							
Blue Earth, depressional	80	Fair		Poor		Poor	
		Carbonate content	0.80	Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Carbonate content	0.80
74B:							
Dickinson	95	Fair		Good		Good	
		Low content of organic matter	0.12				
		Too acid	0.84				
		Droughty	0.85				
86:							
Canisteo	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Carbonate content	0.97			Carbonate content	0.97

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
106C2:							
Lester, eroded------	70	Fair		Fair		Fair	
		Low content of organic matter	0.88	Shrink-swell	0.97	Slope	0.96
		Too acid	0.97				
		Carbonate content	0.97				
106D2:							
Lester, eroded------	80	Fair		Fair		Poor	
		Low content of organic matter	0.88	Shrink-swell	0.97	Slope	0.00
		Too acid	0.97				
		Carbonate content	0.97				
106E:							
Lester----------	80	Fair		Fair		Poor	
		Low content of organic matter	0.88	Slope	0.32	Slope	0.00
				Shrink-swell	0.98		
		Too acid	0.97				
		Carbonate content	0.97				
109:							
Cordova----------	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too clayey	0.95	Shrink-swell	0.97	Too clayey	0.94
114:							
Glencoe, depressional-------	90	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Low strength	0.00		
				Shrink-swell	0.93		
138:							
Lerdal----------	80	Poor		Fair		Poor	
		Too clayey	0.00	Depth to saturated zone	0.12	Too clayey	0.00
		Low content of organic matter	0.50			Depth to saturated zone	0.12
				Shrink-swell	0.41		
		Too acid	0.92				
		Carbonate content	0.97				
		Water erosion	0.99				
158A:							
Zimmerman----------	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Low content of organic matter	0.12				
		Too acid	0.84				
158B:							
Zimmerman----------	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Low content of organic matter	0.12				
		Too acid	0.84				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
158C:							
Zimmerman	90	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				
		Too acid	0.84				
158E:							
Zimmerman	85	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.50	Too sandy	0.00
		Wind erosion	0.00			Slope	0.00
		Low content of organic matter	0.12				
		Too acid	0.84				
169C:							
Braham	90	Poor		Fair		Fair	
		Wind erosion	0.00	Shrink-swell	0.99	Too sandy	0.30
		Low content of organic matter	0.12			Slope	0.96
		Too sandy	0.30				
		Too acid	0.95				
		Water erosion	0.99				
181:							
Litchfield	95	Poor		Fair		Poor	
		Too sandy	0.00	Depth to saturated zone	0.06	Too sandy	0.00
		Wind erosion	0.00			Depth to saturated zone	0.06
		Low content of organic matter	0.12				
		Too acid	0.95				
229:							
Waldorf	90	Fair		Poor		Poor	
		Too clayey	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Carbonate content	0.80				
		Low content of organic matter	0.08	Shrink-swell	0.19	Too clayey	0.12
231C:							
Lester	80	Fair		Fair		Fair	
		Low content of organic matter	0.88	Shrink-swell	0.91	Slope	0.96
		Too acid	0.97				
231D:							
Lester	80	Fair		Fair		Poor	
		Low content of organic matter	0.12	Shrink-swell	0.98	Slope	0.00
		Too acid	0.97				
235:							
Nessel	85	Fair		Fair		Fair	
		Low content of organic matter	0.12	Depth to saturated zone	0.89	Depth to saturated zone	0.89
		Too acid	0.92	Shrink-swell	0.97		

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
239:							
Le Sueur	80	Fair		Fair		Fair	
		Low content of organic matter	0.12	Depth to saturated zone	0.12	Depth to saturated zone	0.12
		Too acid	0.97	Shrink-swell	0.98		
		Carbonate content	0.97				
247:							
Linder	90	Fair		Fair		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.06	Rock fragments	0.00
		Too sandy	0.44			Depth to saturated zone	0.06
		Carbonate content	0.97			Too sandy	0.44
		Droughty	0.97			Hard to reclaim	0.50
						Carbonate content	0.97
255:							
Mayer	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Carbonate content	0.84			Hard to reclaim	0.68
						Carbonate content	0.84
256:							
Mazaska	90	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.12	Shrink-swell	0.56	Too clayey	0.00
		Too acid	0.68				
		Carbonate content	0.97				
258B:							
Sandberg	95	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.92
		Droughty	0.38				
		Too acid	0.92				
258C:							
Sandberg	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.92
		Droughty	0.38			Slope	0.96
		Too acid	0.92				
258E:							
Sandberg	85	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.50	Too sandy	0.00
		Wind erosion	0.00			Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.38			Hard to reclaim	0.92
		Too acid	0.92				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
260:							
Duelm	90	Poor		Fair		Poor	
		Wind erosion	0.00	Depth to saturated zone	0.89	Too sandy	0.00
		Too sandy	0.00			Depth to saturated zone	0.89
		Low content of organic matter	0.12				
		Droughty	0.93				
		Too acid	0.97				
261:							
Isan, depressional	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too sandy	0.30			Too sandy	0.30
		Droughty	0.99				
286B:							
Shorewood	95	Poor		Fair		Poor	
		Too clayey	0.00	Depth to saturated zone	0.14	Too clayey	0.00
		Too acid	0.97	Shrink-swell	0.76	Depth to saturated zone	0.14
294A:							
Rasset	90	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.97				
323:							
Shields	95	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Too clayey	0.00
		Low content of organic matter	0.50	Shrink-swell	0.12	Depth to saturated zone	0.00
		Too acid	0.92				
		Water erosion	0.99				
327A:							
Dickman	85	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Too acid	0.95				
		Droughty	0.98				
327B:							
Dickman	85	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Too acid	0.95				
		Droughty	0.98				
375:							
Forada	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
392:							
Biscay	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Hard to reclaim	0.68
406:							
Dorset	90	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too sandy	0.30			Too sandy	0.30
		Droughty	0.91			Hard to reclaim	0.50
		Too acid	0.92				
414:							
Hamel	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Shrink-swell	0.99		
441:							
Almora	90	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.41
		Too acid	0.95			Hard to reclaim	0.61
		Carbonate content	0.97				
461B:							
Koronis	85	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.95				
461C2:							
Koronis, eroded	80	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
		Too acid	0.95			Rock fragments	0.97
461E:							
Koronis	80	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
		Too acid	0.95			Rock fragments	0.97
511:							
Marcellon, MAP <30	85	Fair		Fair		Fair	
		Low content of organic matter	0.12	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Too acid	0.92			Rock fragments	0.88
523:							
Houghton, drained	80	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
525:							
Muskego, surface drained	75	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
539:							
Klossner, drained	80	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
540:							
Seelyeville, surface drained	80	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
543:							
Markey, surface drained	80	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
548:							
Medo, drained	80	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
603:							
Hanlon, occasionally flooded	80	Good		Fair		Fair	
				Depth to saturated zone	0.89	Depth to saturated zone	0.89
611D:							
Hawick	85	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.82	Too sandy	0.00
		Droughty	0.00			Slope	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.68
708:							
Rushlake	85	Poor		Fair		Poor	
		Too sandy	0.00	Depth to saturated zone	0.53	Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Depth to saturated zone	0.53
		Droughty	0.72			Hard to reclaim	0.92
740:							
Hamel	70	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Shrink-swell	0.99		
Glencoe, depressional	20	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Low strength	0.00		
				Shrink-swell	0.93		

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
768:							
Mosford	85	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Too acid	0.97				
771:							
Elkriver, rarely flooded	85	Fair		Good		Good	
		Low content of organic matter	0.05				
		Too acid	0.61				
783C2:							
Lester, eroded	50	Fair		Fair		Fair	
		Low content of organic matter	0.88	Shrink-swell	0.97	Slope	0.96
		Too acid	0.97				
		Carbonate content	0.97				
Kilkenny, eroded	30	Poor		Fair		Poor	
		Too clayey	0.00	Depth to saturated zone	0.89	Too clayey	0.00
		Low content of organic matter	0.50	Shrink-swell	0.91	Depth to saturated zone	0.89
		Too acid	0.68			Slope	0.96
792:							
Fordum, frequently flooded	90	Fair		Poor		Poor	
		Low content of organic matter	0.50	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.92			Rock fragments	0.00
		Water erosion	0.99			Hard to reclaim	0.50
799:							
Seelyeville, frequently flooded	45	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
Bowstring, frequently flooded	45	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
804B:							
Koronis	50	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.97
Sunburg	20	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.97
Hawick	15	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.26			Hard to reclaim	0.68

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
804C2:							
Koronis, eroded	45	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
						Rock fragments	0.97
Sunburg	25	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
						Rock fragments	0.97
Hawick	15	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.68
		Droughty	0.26			Slope	0.96
804D2:							
Koronis, eroded	40	Fair		Good		Poor	
		Low content of organic matter	0.12			Slope	0.00
						Rock fragments	0.97
Sunburg	30	Fair		Good		Poor	
		Low content of organic matter	0.12			Slope	0.00
						Rock fragments	0.97
Hawick	15	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Slope	0.00
						Rock fragments	0.00
		Droughty	0.26			Hard to reclaim	0.68
804E:							
Koronis	50	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.97
Sunburg	20	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.97
Hawick	15	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Droughty	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.68
807D2:							
Koronis, eroded	65	Fair		Good		Poor	
		Low content of organic matter	0.12			Slope	0.00
						Rock fragments	0.97
Sunburg	20	Fair		Good		Poor	
		Low content of organic matter	0.12			Slope	0.00
						Rock fragments	0.97

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
875B:							
Estherville---------	60	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.30			Hard to reclaim	0.82
Hawick----------	30	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.26			Hard to reclaim	0.68
875C:							
Hawick----------	60	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.26			Hard to reclaim	0.68
						Slope	0.96
Estherville---------	25	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.30			Hard to reclaim	0.82
						Slope	0.96
896B:							
Kingsley----------	70	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.88
		Too acid	0.92				
Gotham----------	25	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.97
		Low content of organic matter	0.12				
		Too acid	0.97				
896C:							
Kingsley----------	70	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.88
						Slope	0.96
		Too acid	0.92				
Gotham----------	25	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			Rock fragments	0.97
		Too acid	0.97				
945C2:							
Lester, eroded------	50	Fair		Fair		Fair	
		Low content of organic matter	0.88	Shrink-swell	0.97	Slope	0.96
		Too acid	0.97				
		Carbonate content	0.97				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
945C2:							
Storden, eroded-----	30	Fair		Fair		Fair	
		Low content of organic matter	0.50	Shrink-swell	0.90	Carbonate content	0.80
		Carbonate content	0.80			Slope	0.96
		Water erosion	0.99				
945D2:							
Lester, eroded------	60	Fair		Fair		Poor	
		Low content of organic matter	0.88	Shrink-swell	0.97	Slope	0.00
		Too acid	0.97				
		Carbonate content	0.97				
Storden, eroded-----	20	Fair		Fair		Poor	
		Low content of organic matter	0.50	Shrink-swell	0.90	Slope	0.00
		Carbonate content	0.80			Carbonate content	0.80
		Water erosion	0.99				
956:							
Canisteo----------	65	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Carbonate content	0.97			Carbonate content	0.97
Glencoe, depressional-------	25	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Low strength	0.00		
				Shrink-swell	0.93		
978:							
Cordova----------	60	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too clayey	0.95	Shrink-swell	0.97	Too clayey	0.94
Rolfe, depressional	30	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.50	Shrink-swell	0.87	Too clayey	0.00
		Too acid	0.95				
		Water erosion	0.99				
1000:							
Arvilla, MAP >25----	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.87			Hard to reclaim	0.50
1015:							
Udipsamments (cut and fill land)-----	100	Not rated		Not rated		Not rated	
1016:							
Udorthents, loamy---	100	Not rated		Not rated		Not rated	

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1023C:							
Lester, eroded------	50	Fair		Fair		Fair	
		Low content of organic matter	0.88	Shrink-swell	0.97	Slope	0.96
		Too acid	0.97				
		Carbonate content	0.97				
Malardi----------	35	Fair		Good		Fair	
		Too sandy	0.03			Too sandy	0.03
		Low content of organic matter	0.12			Rock fragments	0.28
						Hard to reclaim	0.92
		Droughty	0.75			Slope	0.96
1023D:							
Lester, eroded------	45	Fair		Fair		Poor	
		Low content of organic matter	0.88	Shrink-swell	0.97	Slope	0.00
		Too acid	0.97				
		Carbonate content	0.97				
Malardi----------	40	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Slope	0.00
						Rock fragments	0.00
		Droughty	0.48			Hard to reclaim	0.92
1026B:							
Lizzie, moderately wet----------	90	Fair		Fair		Good	
		Low content of organic matter	0.12				
		Carbonate content	0.74				
		Too acid	0.95				
		Water erosion	0.99				
1027:							
Udorthents, wet substratum---------	100	Not rated		Not rated		Not rated	
1030:							
Pits, gravel--------	80	Not rated		Not rated		Not rated	
Udipsamments--------	20	Not rated		Not rated		Not rated	
1035B:							
Crowfork----------	90	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.10
		Too sandy	0.10			Rock fragments	0.97
		Low content of organic matter	0.12				
		Too acid	0.84				
1035C:							
Crowfork----------	90	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.10
		Too sandy	0.10			Slope	0.96
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.84				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1035D:							
Crowfork	85	Poor		Good		Poor	
		Wind erosion	0.00			Slope	0.00
		Too sandy	0.10			Too sandy	0.10
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.84				
1036B:							
Angus	85	Fair		Fair		Good	
		Low content of organic matter	0.88	Shrink-swell	0.97		
		Too acid	0.97				
1037:							
Eckvoll, MAP >25	90	Poor		Fair		Fair	
		Wind erosion	0.00	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Low content of organic matter	0.12	Shrink-swell	0.98		
		Too acid	0.97				
		Water erosion	0.99				
1038A:							
Verndale, acid substratum	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.68				
		Droughty	0.98				
1038B:							
Verndale, acid substratum	85	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.97
		Too acid	0.68				
		Droughty	0.98				
1066B:							
Malardi	65	Fair		Good		Fair	
		Too sandy	0.03			Too sandy	0.03
		Low content of organic matter	0.12			Rock fragments	0.28
		Droughty	0.75			Hard to reclaim	0.92
Hawick	25	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.26			Hard to reclaim	0.68
1066C:							
Malardi	60	Fair		Good		Fair	
		Too sandy	0.03			Too sandy	0.03
		Low content of organic matter	0.12			Rock fragments	0.28
		Droughty	0.75			Hard to reclaim	0.92
						Slope	0.96

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1066C:							
Hawick	25	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.68
		Droughty	0.26			Slope	0.84
1066E:							
Malardi	55	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.00
						Rock fragments	0.00
		Droughty	0.48			Hard to reclaim	0.92
Hawick	30	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.00
						Rock fragments	0.00
		Droughty	0.26			Hard to reclaim	0.68
1072:							
Udorthents, shallow	100	Not rated		Not rated		Not rated	
1075:							
Klossner, ponded	40	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
Muskego, ponded	40	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
1080:							
Klossner, ponded	30	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
Okoboji, ponded	30	Fair		Poor		Poor	
		Too clayey	0.08	Depth to saturated zone	0.00	Depth to saturated zone	
		Water erosion	0.99				
				Shrink-swell	0.12	Too clayey	0.08
Glencoe, ponded	30	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Shrink-swell	0.93		
1087B:							
Angus	55	Fair		Fair		Good	
		Low content of organic matter	0.12	Shrink-swell	0.99		
		Too acid	0.97				
		Water erosion	0.99				
Malardi	30	Fair		Good		Fair	
		Too sandy	0.03			Too sandy	0.03
		Low content of organic matter	0.12			Rock fragments	0.28
						Hard to reclaim	0.92
		Droughty	0.75				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1094B:							
Angus	60	Fair		Fair		Good	
		Low content of organic matter	0.12	Shrink-swell	0.99		
		Too acid	0.97				
		Water erosion	0.99				
Cordova	30	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.84	Shrink-swell	0.99	Too clayey	0.94
		Too clayey	0.95				
1099:							
Granby, very wet	85	Poor		Poor		Poor	
		Wind erosion	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.00			Too sandy	0.36
		Too sandy	0.36				
		Droughty	0.77				
1110:							
Isan	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Droughty	0.99				
1156:							
Cordova	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.84	Shrink-swell	0.99	Too clayey	0.94
		Too clayey	0.95				
1161:							
Barry	85	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Rock fragments	0.99
1163:							
Suckercreek, frequently flooded	85	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
1165:							
Lundlake, depressional	90	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
1173:							
Muskego, frequently flooded	45	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1173:							
Klossner, frequently flooded	45	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
1186:							
Forestcity	75	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Shrink-swell	0.97		
Lundlake, depressional	20	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Shrink-swell	0.97		
1196B:							
Lida	60	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.82			Hard to reclaim	0.82
Two Inlets	30	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.50
						Carbonate content	0.97
		Droughty	0.17				
		Too acid	0.95				
		Carbonate content	0.97				
1196C:							
Lida	55	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Slope	0.63
		Droughty	0.82			Hard to reclaim	0.82
Two Inlets	30	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.50
						Slope	0.63
		Droughty	0.17			Carbonate content	0.97
		Too acid	0.95				
		Carbonate content	0.97				
1196E:							
Lida	50	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.02	Slope	0.00
		Low content of organic matter	0.12			Too sandy	0.00
						Rock fragments	0.00
		Droughty	0.82			Hard to reclaim	0.82

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1196E:							
Two Inlets	40	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.02	Slope	0.00
		Wind erosion	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.50
		Droughty	0.20			Carbonate content	0.97
		Too acid	0.95				
		Carbonate content	0.97				
1197:							
Suckercreek, occasionally flooded	80	Good		Poor		Poor	
				Depth to saturated zone	0.00	Depth to saturated zone	0.00
1199:							
Klossner, ponded	45	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
Lundlake, ponded	45	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
1203:							
Muskego, ponded	30	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
Blue Earth, ponded	30	Fair		Poor		Poor	
		Carbonate content	0.80	Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Shrink-swell	0.95	Content of organic matter	0.94
Houghton, ponded	30	Not rated		Not rated		Not rated	
1204B:							
Reedslake	85	Fair		Fair		Good	
		Low content of organic matter	0.12	No shrink-swell limitation	0.99		
		Carbonate content	0.97				
1207B:							
Reedslake	60	Fair		Fair		Good	
		Low content of organic matter	0.12	No shrink-swell limitation	0.99		
		Carbonate content	0.97				
Le Sueur	25	Fair		Fair		Fair	
		Too acid	0.92	Depth to saturated zone	0.12	Depth to saturated zone	0.12
		Carbonate content	0.97	Shrink-swell	0.99		

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1213C:							
Cokato, eroded------	65	Fair		Fair		Fair	
		Low content of organic matter	0.12	No shrink-swell limitation	0.99	Slope	0.96
		Carbonate content	0.97			Carbonate content	0.97
		Water erosion	0.99				
Storden----------	20	Fair		Fair		Fair	
		Low content of organic matter	0.50	Shrink-swell	0.90	Carbonate content	0.80
		Carbonate content	0.80			Slope	0.96
		Water erosion	0.99				
1213D:							
Cokato, eroded------	60	Fair		Good		Poor	
		Low content of organic matter	0.12			Slope	0.00
		Carbonate content	0.97			Carbonate content	0.97
		Water erosion	0.99				
Storden----------	25	Fair		Fair		Poor	
		Low content of organic matter	0.50	Shrink-swell	0.90	Slope	0.00
		Carbonate content	0.80			Carbonate content	0.80
		Water erosion	0.99				
1220C:							
Cokato, eroded------	50	Fair		Fair		Fair	
		Low content of organic matter	0.12	No shrink-swell limitation	0.99	Slope	0.96
		Carbonate content	0.97			Carbonate content	0.97
		Water erosion	0.99				
Storden----------	20	Fair		Fair		Fair	
		Low content of organic matter	0.50	Shrink-swell	0.90	Carbonate content	0.80
		Carbonate content	0.80			Slope	0.96
		Water erosion	0.99				
Hawick----------	15	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Droughty	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.68
						Slope	0.96
1223:							
Sandberg, MAP >25---	60	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.03
		Low content of organic matter	0.12			Hard to reclaim	0.92
		Droughty	0.66				
		Too acid	0.92				
Arvilla, MAP >25----	30	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.75			Hard to reclaim	0.50

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1224:							
Hubbard	60	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.16
		Low content of organic matter	0.12				
		Too sandy	0.16				
		Droughty	0.58				
		Too acid	0.92				
Verndale, acid substratum	30	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Too acid	0.68				
1231:							
Hubbard	60	Poor		Good		Fair	
		Wind erosion	0.00			Too sandy	0.01
		Too sandy	0.01				
		Low content of organic matter	0.12				
		Droughty	0.81				
		Too acid	0.92				
Mosford	30	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12				
		Too acid	0.97				
1255:							
Elkriver, occasionally flooded	80	Fair		Fair		Fair	
		Low content of organic matter	0.05	Depth to saturated zone	0.14	Depth to saturated zone	0.14
		Too acid	0.61				
1256:							
Cantlin	90	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00				
		Low content of organic matter	0.12				
		Too acid	0.84				
		Droughty	0.92				
1257:							
Elkriver, rarely flooded	55	Fair		Good		Good	
		Low content of organic matter	0.05				
		Too acid	0.61				
Mosford, rarely flooded	35	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.12
		Too acid	0.97				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1260B:							
Stonelake	55	Poor		Good		Poor	
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
						Too sandy	0.36
		Droughty	0.35				
		Too sandy	0.36				
		Too acid	0.92				
Nebish, moderately wet	30	Fair		Fair		Good	
		Low content of organic matter	0.88	Shrink-swell	0.98		
		Too acid	0.92				
1260C:							
Stonelake	55	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.00
						Slope	0.96
		Droughty	0.32				
		Too acid	0.92				
Nebish	30	Fair		Good		Fair	
		Low content of organic matter	0.12			Slope	0.96
		Too acid	0.92				
1260E:							
Stonelake	60	Poor		Fair		Poor	
		Too sandy	0.00	Slope	0.82	Too sandy	0.00
		Low content of organic matter	0.12			Slope	0.00
						Rock fragments	0.00
		Droughty	0.14			Hard to reclaim	0.00
		Too acid	0.84				
Nebish	25	Fair		Fair		Poor	
		Low content of organic matter	0.12	Slope	0.82	Slope	0.00
		Too acid	0.92				
1288:							
Seelyeville, ponded	45	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
Markey, ponded	45	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
1356:							
Water, miscellaneous	100	Not rated		Not rated		Not rated	
1362B:							
Angus	85	Fair		Fair		Good	
		Low content of organic matter	0.12	Shrink-swell	0.99		
		Too acid	0.97				
		Water erosion	0.99				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1368:							
Southhaven	90	Fair		Good		Good	
		Too acid	0.97				
1377B:							
Dorset	70	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too sandy	0.30			Too sandy	0.30
		Droughty	0.91			Hard to reclaim	0.50
		Too acid	0.92				
Two Inlets	20	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.50
		Droughty	0.17			Carbonate content	0.97
		Too acid	0.95				
		Carbonate content	0.97				
1377C:							
Dorset	50	Fair		Good		Poor	
		Low content of organic matter	0.12			Rock fragments	0.00
		Too sandy	0.30			Too sandy	0.30
		Droughty	0.91			Hard to reclaim	0.50
		Too acid	0.92			Slope	0.96
Two Inlets	35	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Hard to reclaim	0.50
		Droughty	0.17			Slope	0.96
		Too acid	0.95			Carbonate content	0.97
		Carbonate content	0.97				
1377D:							
Dorset	45	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
		Droughty	0.62			Slope	0.00
		Too acid	0.92			Hard to reclaim	0.50
Two Inlets	40	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Wind erosion	0.00			Rock fragments	0.00
		Low content of organic matter	0.12			Slope	0.00
		Droughty	0.17			Hard to reclaim	0.50
		Too acid	0.95			Carbonate content	0.97
		Carbonate content	0.97				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1377E:							
Dorset	45	Fair		Poor		Poor	
		Low content of organic matter	0.12	Slope	0.00	Slope	0.00
						Rock fragments	0.00
		Too sandy	0.30			Too sandy	0.30
		Droughty	0.67			Hard to reclaim	0.50
		Too acid	0.92				
Two Inlets	45	Poor		Poor		Poor	
		Too sandy	0.00	Slope	0.00	Slope	0.00
		Wind erosion	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.50
		Droughty	0.20			Carbonate content	0.97
		Too acid	0.95				
		Carbonate content	0.97				
1378:							
Fordum, occasionally flooded	85	Fair		Poor		Poor	
		Low content of organic matter	0.88	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.92			Rock fragments	0.97
		Water erosion	0.99				
1379B:							
Dorset	65	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.00
						Hard to reclaim	0.50
		Droughty	0.99				
Almora	25	Fair		Good		Fair	
		Low content of organic matter	0.12			Rock fragments	0.41
						Hard to reclaim	0.61
		Too acid	0.95				
		Carbonate content	0.97				
1380A:							
Bygland, MAP >25	85	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.71	Too clayey	0.00
		Low content of organic matter	0.12	Depth to saturated zone	0.89	Depth to saturated zone	0.89
		Water erosion	0.90				
		Too acid	0.97				
1380B:							
Bygland, MAP >25	70	Poor		Fair		Poor	
		Too clayey	0.00	Shrink-swell	0.71	Too clayey	0.00
		Low content of organic matter	0.12				
		Water erosion	0.90				
		Too acid	0.97				
1380C:							
Bygland, MAP >25	70	Fair		Fair		Fair	
		Low content of organic matter	0.12	Shrink-swell	0.75	Slope	0.96
		Water erosion	0.90				
		Too acid	0.97				

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1381:							
Lindaas, morainic	80	Fair		Poor		Poor	
		Low content of organic matter	0.88	Depth to saturated zone	0.00	Depth to saturated zone	0.00
				Shrink-swell	0.66		
1383A:							
Shorewood, moderately wet	95	Poor		Poor		Poor	
		Too clayey	0.00	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.97	Shrink-swell	0.76	Too clayey	0.00
1388B:							
Terril, moderately wet	85	Good		Good		Good	
1406:							
Medo, ponded	30	Not rated		Poor		Not rated	
				Depth to saturated zone	0.00		
Dassel, ponded	30	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
Biscay, ponded	30	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
						Hard to reclaim	0.68
1408B:							
Angus	45	Fair		Fair		Good	
		Low content of organic matter	0.12	Shrink-swell	0.99		
		Too acid	0.97				
		Water erosion	0.99				
Kilkenny	40	Poor		Fair		Poor	
		Too clayey	0.00	Depth to saturated zone	0.24	Too clayey	0.00
		Low content of organic matter	0.12	Shrink-swell	0.98	Depth to saturated zone	0.24
		Too acid	0.68				
1438B:							
Braham, moderately wet	85	Poor		Fair		Fair	
		Wind erosion	0.00	Depth to saturated zone	0.89	Too sandy	0.36
		Low content of organic matter	0.12	Shrink-swell	0.98	Depth to saturated zone	0.89
		Too sandy	0.36				
		Too acid	0.97				
		Water erosion	0.99				
1443:							
Belleville	85	Fair		Poor		Poor	
		Too sandy	0.01	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Low content of organic matter	0.12			Too sandy	0.01

Table 15b.--Construction Materials--Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material: Rating class and limiting features	Value	Potential source of roadfill: Rating class and limiting features	Value	Potential source of topsoil: Rating class and limiting features	Value
1901B:							
Angus	60	Fair		Fair		Good	
		Low content of organic matter	0.12	Shrink-swell	0.99		
		Too acid	0.97				
		Water erosion	0.99				
Le Sueur	30	Fair		Fair		Fair	
		Too acid	0.92	Depth to saturated zone	0.12	Depth to saturated zone	0.12
		Carbonate content	0.97	Shrink-swell	0.99		
1931:							
Essexville	75	Fair		Poor		Poor	
		Low content of organic matter	0.12	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Carbonate content	0.97			Carbonate content	0.97
1942:							
Forada, depressional	85	Poor		Poor		Poor	
		Too sandy	0.00	Depth to saturated zone	0.00	Too sandy	0.00
		Low content of organic matter	0.12			Depth to saturated zone	0.00
						Rock fragments	0.12
1946:							
Fordum, frequently flooded	70	Fair		Poor		Poor	
		Low content of organic matter	0.50	Depth to saturated zone	0.00	Depth to saturated zone	0.00
		Too acid	0.92			Rock fragments	0.00
		Water erosion	0.99			Hard to reclaim	0.50
Winterfield, frequently flooded	20	Poor		Fair		Poor	
		Too sandy	0.00	Depth to saturated zone	0.14	Too sandy	0.00
		Low content of organic matter	0.12			Depth to saturated zone	0.14
		Too acid	0.95			Rock fragments	0.88
1975:							
Oylen	90	Poor		Fair		Poor	
		Too sandy	0.00	Depth to saturated zone	0.89	Too sandy	0.00
		Low content of organic matter	0.12			Rock fragments	0.88
						Depth to saturated zone	0.89
W:							
Water	100	Not rated		Not rated		Not rated	

Table 16.--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	Pct. of map unit	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
7A:							
Hubbard	95	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
7B:							
Hubbard	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
7C:							
Hubbard	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
8B:							
Sparta	95	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.82	Depth to water	1.00
35:							
Blue Earth, depressional	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Content of organic matter	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Ponding	1.00		
				Depth to saturated zone	1.00		
				Piping	1.00		
74B:							
Dickinson	95	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.64	Depth to water	1.00
86:							
Canisteo	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.27		
106C2:							
Lester, eroded	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
106D2:							
Lester, eroded	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
		Slope	0.03				
106E:							
Lester	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.30	Depth to water	1.00
		Slope	0.15				
109:							
Cordova	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.02		

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
114:							
Glencoe, depressional	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.39		
138:							
Lerdal	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Hard to pack	0.07	Cutbanks cave	
158A:							
Zimmerman	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
158B:							
Zimmerman	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
158C:							
Zimmerman	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
158E:							
Zimmerman	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
		Slope	0.12				
169C:							
Braham	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.08	Depth to water	1.00
181:							
Litchfield	95	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.07		
229:							
Waldorf	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.96
						Cutbanks cave	0.10
				Hard to pack	0.07		
231C:							
Lester	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.39	Depth to water	1.00
231D:							
Lester	80	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.37	Depth to water	1.00
		Slope	0.03				
235:							
Nessel	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	0.86	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.19	Depth to water	0.06

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
239:							
Le Sueur	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.14		
247:							
Linder	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.17		
255:							
Mayer	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.58		
256:							
Mazaska	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.01		
258B:							
Sandberg	95	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
258C:							
Sandberg	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
258E:							
Sandberg	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
		Slope	0.12				
260:							
Duelm	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.86	Cutbanks cave	1.00
						Depth to water	0.06
				Seepage	0.66		
261:							
Isan, depressional	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Seepage	0.66		
286B:							
Shorewood	95	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
294A:							
Rasset	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
323:							
Shields	95	Somewhat limited		Very limited		Very limited	
		Seepage	0.57	Depth to saturated zone	1.00	Depth to water	1.00
				Hard to pack	0.03		
327A:							
Dickman	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.79	Depth to water	1.00
327B:							
Dickman	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.79	Depth to water	1.00
375:							
Forada	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.54		
392:							
Biscay	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.08		
406:							
Dorset	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
414:							
Hamel	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.01		
441:							
Almora	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
461B:							
Koronis	85	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
461C2:							
Koronis, eroded	80	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
461E:							
Koronis	80	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.50				
511:							
Marcellon, MAP <30--	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Seepage	0.03		

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
523:							
Houghton, drained	80	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
525:							
Muskego, surface drained	75	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
539:							
Klossner, drained	80	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
540:							
Seelyeville, surface drained	80	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
543:							
Markey, surface drained	80	Very limited		Not rated		Very limited	
		Seepage	1.00			Cutbanks cave	1.00
548:							
Medo, drained	80	Very limited		Not rated		Very limited	
		Seepage	1.00			Cutbanks cave	1.00
603:							
Hanlon, occasionally flooded	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.86	Cutbanks cave	1.00
						Depth to water	0.06
				Seepage	0.06		
611D:							
Hawick	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
		Slope	0.08				
708:							
Rushlake	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
						Depth to water	0.01
				Seepage	0.57		
740:							
Hamel	70	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.01		
Glencoe, depressional	20	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.39		
768:							
Mosford	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.79	Depth to water	1.00

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
771:							
Elkriver, rarely flooded	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Cutbanks cave	1.00
				Depth to saturated zone	0.46	Depth to water	0.24
783C2:							
Lester, eroded	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
Kilkenny, eroded	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Depth to saturated zone	0.86	Depth to water	1.00
				Hard to pack	0.08		
792:							
Fordum, frequently flooded	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.86		
799:							
Seelyeville, frequently flooded	45	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
Bowstring, frequently flooded	45	Very limited		Not rated		Very limited	
		Seepage	1.00			Cutbanks cave	1.00
804B:							
Koronis	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
Sunburg	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
Hawick	15	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
804C2:							
Koronis, eroded	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
Sunburg	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
Hawick	15	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
804D2:							
Koronis, eroded	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
		Slope	0.03				
Sunburg	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
		Slope	0.03				

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
804D2:							
Hawick	15	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
		Slope	0.03				
804E:							
Koronis	50	Very limited		Not limited		Very limited	
		Seepage	1.00			Depth to water	1.00
		Slope	0.50				
Sunburg	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
		Slope	0.50				
Hawick	15	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
		Slope	0.50				
807D2:							
Koronis, eroded	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
		Slope	0.03				
Sunburg	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.04	Depth to water	1.00
		Slope	0.03				
875B:							
Estherville	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.69	Depth to water	1.00
Hawick	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
875C:							
Hawick	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
Estherville	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.69	Depth to water	1.00
896B:							
Kingsley	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Seepage	0.04	Depth to water	1.00
Gotham	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
896C:							
Kingsley	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.05	Seepage	0.04	Depth to water	1.00
Gotham	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
945C2:							
Lester, eroded	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
Storden, eroded	30	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.66	Depth to water	1.00

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
945D2:							
Lester, eroded------	60	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
		Slope	0.03				
Storden, eroded-----	20	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.66	Depth to water	1.00
		Slope	0.03				
956:							
Canisteo----------	65	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.27		
Glencoe, depressional-------	25	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.39		
978:							
Cordova----------	60	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
				Piping	0.02		
Rolfe, depressional	30	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Ponding	1.00	Slow refill	0.28
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.14		
1000:							
Arvilla, MAP >25----	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.53	Depth to water	1.00
1015:							
Udipsamments (cut and fill land)-----	100	Not limited		Not rated		Not rated	
1016:							
Udorthents, loamy---	100	Not limited		Not rated		Not rated	
1023C:							
Lester, eroded------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
Malardi----------	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
1023D:							
Lester, eroded------	45	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
		Slope	0.03				
Malardi----------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.03				

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1026B:							
Lizzie, moderately wet	90	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Piping	1.00	Depth to water	0.60
				Depth to saturated zone	0.05	Cutbanks cave	0.10
1027:							
Udorthents, wet substratum	100	Not limited		Not rated		Not rated	
1030:							
Pits, gravel	80	Not rated		Not rated		Not rated	
Udipsamments	20	Not rated		Not rated		Not rated	
1035B:							
Crowfork	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
1035C:							
Crowfork	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
1035D:							
Crowfork	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
		Slope	0.03				
1036B:							
Angus	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.43	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.28
						Cutbanks cave	0.10
1037:							
Eckvoll, MAP >25	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	0.98		
1038A:							
Verndale, acid substratum	90	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
1038B:							
Verndale, acid substratum	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
1066B:							
Malardi	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
Hawick	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1066C:							
Malardi	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
Hawick	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
1066E:							
Malardi	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.28				
Hawick	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
		Slope	0.28				
1072:							
Udorthents, shallow	100	Not limited		Not rated		Not rated	
1075:							
Klossner, ponded	40	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
Muskego, ponded	40	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
1080:							
Klossner, ponded	30	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
Okoboji, ponded	30	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.05	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Hard to pack	0.72		
Glencoe, ponded	30	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	0.15		
1087B:							
Angus	55	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.29	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.30
						Cutbanks cave	0.10
Malardi	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
1094B:							
Angus	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.29	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.30
						Cutbanks cave	0.10
Cordova	30	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.09		

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1099:							
Granby, very wet	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Seepage	0.07		
1110:							
Isan	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.66		
1156:							
Cordova	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.28
				Piping	0.09	Cutbanks cave	0.10
1161:							
Barry	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Seepage	0.03		
1163:							
Suckercreek, frequently flooded	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	1.00		
				Seepage	0.07		
1165:							
Lundlake, depressional	90	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Ponding	1.00	Cutbanks cave	0.10
				Depth to saturated zone	1.00		
				Piping	0.81		
				Seepage	0.03		
1173:							
Muskego, frequently flooded	45	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
Klossner, frequently flooded	45	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
1186:							
Forestcity	75	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Seepage	0.03		

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1186:							
Lundlake, depressional	20	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	0.10
				Depth to saturated zone	1.00		
				Piping	0.84		
				Seepage	0.03		
1196B:							
Lida	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.51	Depth to water	1.00
Two Inlets	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
1196C:							
Lida	55	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.51	Depth to water	1.00
		Slope	0.01				
Two Inlets	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
		Slope	0.01				
1196E:							
Lida	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.51	Depth to water	1.00
		Slope	0.24				
Two Inlets	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
		Slope	0.24				
1197:							
Suckercreek, occasionally flooded	80	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Seepage	0.01		
1199:							
Klossner, ponded	45	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
Lundlake, ponded	45	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	0.10
				Depth to saturated zone	1.00		
				Piping	1.00		
				Seepage	0.03		
1203:							
Muskego, ponded	30	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1203:							
Blue Earth, ponded--	30	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Content of organic matter	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Ponding	1.00		
				Depth to saturated zone	1.00		
				Piping	1.00		
Houghton, ponded----	30	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
1204B:							
Reedslake----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.39	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.30
						Cutbanks cave	0.10
1207B:							
Reedslake----------	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.39	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.30
						Cutbanks cave	0.10
Le Sueur----------	25	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.28		
1213C:							
Cokato, eroded------	65	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
Storden----------	20	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.66	Depth to water	1.00
1213D:							
Cokato, eroded------	60	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
		Slope	0.03				
Storden----------	25	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.66	Depth to water	1.00
		Slope	0.03				
1220C:							
Cokato, eroded------	50	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.31	Depth to water	1.00
Storden----------	20	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.72	Piping	0.66	Depth to water	1.00
Hawick----------	15	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
1223:							
Sandberg, MAP >25---	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
Arvilla, MAP >25----	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.53	Depth to water	1.00

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1224:							
Hubbard	60	Very limited Seepage	1.00	Somewhat limited Seepage	0.86	Very limited Depth to water	1.00
Verndale, acid substratum	30	Very limited Seepage	1.00	Somewhat limited Seepage	0.86	Very limited Depth to water	1.00
1231:							
Hubbard	60	Very limited Seepage	1.00	Somewhat limited Seepage	0.86	Very limited Depth to water	1.00
Mosford	30	Very limited Seepage	1.00	Somewhat limited Seepage	0.79	Very limited Depth to water	1.00
1255:							
Elkriver, occasionally flooded	80	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.91	Very limited Cutbanks cave	1.00
1256:							
Cantlin	90	Very limited Seepage	1.00	Somewhat limited Seepage Depth to saturated zone	0.30 0.09	Very limited Cutbanks cave Depth to water	1.00 0.54
1257:							
Elkriver, rarely flooded	55	Very limited Seepage	1.00	Somewhat limited Seepage Depth to saturated zone	0.91 0.46	Very limited Cutbanks cave Depth to water	1.00 0.24
Mosford, rarely flooded	35	Very limited Seepage	1.00	Somewhat limited Seepage Depth to saturated zone	0.79 0.46	Very limited Cutbanks cave Depth to water	1.00 0.24
1260B:							
Stonelake	55	Very limited Seepage	1.00	Somewhat limited Seepage	0.82	Very limited Depth to water	1.00
Nebish, moderately wet	30	Somewhat limited Seepage	0.70	Somewhat limited Piping Depth to saturated zone	0.87 0.05	Somewhat limited Depth to water Slow refill Cutbanks cave	0.60 0.30 0.10
1260C:							
Stonelake	55	Very limited Seepage	1.00	Somewhat limited Seepage	0.64	Very limited Depth to water	1.00
Nebish	30	Somewhat limited Seepage	0.70	Somewhat limited Piping	0.92	Very limited Depth to water	1.00

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1260E:							
Stonelake	60	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.64	Depth to water	1.00
		Slope	0.08				
Nebish	25	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.70	Piping	0.92	Depth to water	1.00
		Slope	0.08				
1288:							
Seelyeville, ponded	45	Very limited		Not rated		Somewhat limited	
		Seepage	1.00			Cutbanks cave	0.10
Markey, ponded	45	Very limited		Not rated		Very limited	
		Seepage	1.00			Cutbanks cave	1.00
1356:							
Water, miscellaneous	100	Not rated		Not rated		Not rated	
1362B:							
Angus	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.29	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.30
						Cutbanks cave	0.10
1368:							
Southhaven	90	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Cutbanks cave	1.00
				Seepage	0.86	Depth to water	0.54
				Depth to saturated zone	0.09		
1377B:							
Dorset	70	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
Two Inlets	20	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
1377C:							
Dorset	50	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
Two Inlets	35	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
1377D:							
Dorset	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.03				
Two Inlets	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
		Slope	0.03				
1377E:							
Dorset	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.28				

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1377E:							
Two Inlets----------	45	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.91	Depth to water	1.00
		Slope	0.28				
1378:							
Fordum, occasionally flooded----------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.06		
1379B:							
Dorset----------	65	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
Almora----------	25	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.58	Depth to water	1.00
1380A:							
Bygland, MAP >25----	85	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Depth to saturated zone	0.86	Depth to water	1.00
1380B:							
Bygland, MAP >25----	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Depth to saturated zone	0.46	Depth to water	1.00
1380C:							
Bygland, MAP >25----	70	Somewhat limited		Somewhat limited		Very limited	
		Seepage	0.04	Depth to saturated zone	0.46	Depth to water	1.00
1381:							
Lindaas, morainic---	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.04	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Hard to pack	0.40		
1383A:							
Shorewood, moderately wet-----	95	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
1388B:							
Terril, moderately wet----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.46	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.28
						Cutbanks cave	0.10
1406:							
Medo, ponded--------	30	Very limited		Not rated		Very limited	
		Seepage	1.00			Cutbanks cave	1.00

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Value	Embankments, dikes, and levees: Rating class and limiting features	Value	Aquifer-fed excavated ponds: Rating class and limiting features	Value
1406:							
Dassel, ponded	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Seepage	0.09		
Biscay, ponded	30	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Seepage	0.08		
1408B:							
Angus	45	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.29	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.30
						Cutbanks cave	0.10
Kilkenny	40	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Slow refill	0.30
						Cutbanks cave	0.10
1438B:							
Braham, moderately wet	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Depth to saturated zone	0.86	Cutbanks cave	1.00
						Slow refill	0.30
						Depth to water	0.06
1443:							
Belleville	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	0.93		
1901B:							
Angus	60	Somewhat limited		Somewhat limited		Somewhat limited	
		Seepage	0.72	Piping	0.29	Depth to water	0.60
				Depth to saturated zone	0.05	Slow refill	0.30
						Cutbanks cave	0.10
Le Sueur	30	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.72	Depth to saturated zone	1.00	Slow refill	0.28
						Cutbanks cave	0.10
				Piping	0.28		
1931:							
Essexville	75	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	0.98		
				Seepage	0.36		
1942:							
Forada, depressional	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Seepage	0.54		

Table 16.--Water Management--Continued

Map symbol and soil name	Pct. of map unit	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
1946:							
Fordum, frequently flooded	70	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.86	Very limited Cutbanks cave	1.00
Winterfield, frequently flooded	20	Very limited Seepage	1.00	Very limited Depth to saturated zone Seepage	1.00 0.86	Very limited Cutbanks cave	1.00
1975:							
Oylen	90	Very limited Seepage	1.00	Somewhat limited Depth to saturated zone Seepage	0.86 0.72	Very limited Cutbanks cave Depth to water	1.00 0.06
W:							
Water	100	Not rated		Not rated		Not rated	

Soil Properties

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

Soil properties are determined by field examination of the soils and by laboratory index testing of some 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 grain-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 shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classification, and the physical and chemical properties of the major horizons of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 17 gives estimates of the engineering classification and of the range of index properties for the major horizons of each soil. Most soils have horizons of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each horizon 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. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 2001) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 2000).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-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, SP-SM.

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 grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3

inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and *plasticity index* (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-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 omitted in the table.

Physical and Chemical Properties

Tables 18 and 19 show estimates of some characteristics and features that affect soil behavior. These estimates are given for the major horizons 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 horizon is indicated.

In table 18, *clay* as a soil separate, or component, consists of mineral soil particles that are less than 0.002 millimeter in diameter. The estimated clay content of each major soil horizon 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 linear extensibility, 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 (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at $^1/_3$-bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In table 18, the estimated moist bulk density of each major 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 linear extensibility, 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. A bulk density of more than 1.6 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 and saturated hydraulic conductivity refer to the ability of a soil to transmit water or air. Permeability estimates indicate the rate of downward movement of water 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, irrigation systems, and septic tank absorption fields. Measured values of saturated hydraulic conductivity are used in models for site-specific use.

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 major soil horizon. The capacity varies, depending on soil properties that affect the retention of water and the depth of the root zone. 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 percent is the linear expression of the volume difference of natural soil fabric at $^1/_3$-bar or $^1/_{10}$-bar water content and oven dryness. The volume change is reported as percent change for the whole soil. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

Linear extensibility of 3 percent or more can cause damage to buildings, roads, and other structures. Special design is often needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 18, 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 or increased by returning crop residue to

the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Erosion factors are shown in table 18 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of 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 Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their susceptibility to wind erosion in cultivated areas. The soils assigned to group 1 are the most susceptible to wind erosion, and those assigned to group 8 are the least susceptible. The groups are as follows:

1. Coarse sands, sands, fine sands, and very fine sands.
2. Loamy coarse sands, loamy sands, loamy fine sands, loamy very fine sands, ash material, and sapric soil material.
3. Coarse sandy loams, sandy loams, fine sandy loams, and very fine sandy loams.

4L. Calcareous loams, silt loams, clay loams, and silty clay loams.

4. Clays, silty clays, noncalcareous clay loams, and silty clay loams that are more than 35 percent clay.
5. Noncalcareous loams and silt loams that are less than 20 percent clay and sandy clay loams, sandy clays, and hemic soil material.
6. Noncalcareous loams and silt loams that are more than 20 percent clay and noncalcareous clay loams that are less than 35 percent clay.
7. Silts, noncalcareous silty clay loams that are less than 35 percent clay, and fibric soil material.
8. Soils that are not subject to wind erosion because of rock fragments on the surface or because of surface wetness.

Wind erodibility index is a numerical value indicating the susceptibility of soil to wind erosion, or the tons per acre per year that can be expected to be lost to wind erosion. There is a close correlation between wind erosion and the texture of the surface layer, the size and durability of surface clods, rock fragments, organic matter, and a calcareous reaction. Soil moisture and frozen soil layers also influence wind erosion.

In table 19, *cation-exchange capacity* is the total amount of extractable bases that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. Soils having a low cation-exchange capacity hold fewer cations and may require more frequent applications of fertilizer than soils having a high cation-exchange capacity. The ability to retain cations reduces the hazard of ground-water pollution.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Calcium carbonate equivalent is the percent of carbonates, by weight, in the fraction of the soil less than 2 millimeters in size. The availability of plant nutrients is influenced by the amount of carbonates in the soil. Incorporating nitrogen fertilizer into calcareous soils helps to prevent nitrite accumulation and ammonium-N volatilization.

Gypsum is expressed as a percent, by weight, of hydrated calcium sulfates in the fraction of the soil less than 20 millimeters in size. Gypsum is partially soluble in water. Soils that have a high content of gypsum may collapse if the gypsum is removed by percolating water.

Water Features

Soil moisture status is an estimate of the fluctuating water content in a soil. It greatly influences vegetation type and plant growth; physical properties of soils, such as permeability, workability, strength, linear extensibility, and frost action; and chemical interactions and transport. Many other properties, qualities, and interpretations also are affected. Soil moisture status is important in the classification of soils, wetland, and habitat.

Table 20 gives estimates of soil moisture for each component of a map unit at various depths for every month of the year. The depths displayed are representative values that are indicative of conditions that occur most of the time. *Dry* indicates a moisture condition under which most plants (especially crops) cannot extract water for growth. *Moist* indicates a moisture condition under which soil water is most readily available for plant growth. *Wet* indicates a condition under which water will stand in an unlined hole or at least a condition under which the soil is too wet for the growth of most agricultural species. A moisture status of 4.0-6.7 (wet) indicates that most of the time the component is saturated at some depth between 4.0 feet and 6.7 feet during the month designated. In some years the soil may be saturated at a depth of less than 4.0 feet or more than 6.7 feet; however, field observations indicate that the soil will be saturated between these depths in most years. In the summer, the soil may show the effects of drying plus intermittent rains that result in a moist or wet layer over a dry layer that gets moist or wet again.

In table 20, *hydrologic soil groups* are groups of soils that, when saturated, have the same runoff potential under similar storm and ground cover conditions. The soil properties that affect the runoff potential are those that influence the minimum rate of infiltration in a bare soil after prolonged wetting and when the soil is not frozen. These properties include the depth to a zone in which the soil moisture status is wet, the infiltration rate, permeability after prolonged wetting, and the depth to a very slowly permeable horizon or horizons. The influences of ground cover and slope are treated independently and are not taken into account in hydrologic soil groups.

In the definitions of the hydrologic soil groups, the infiltration rate is the rate at which water enters the soil at the surface and is controlled by surface conditions. The transmission rate is the rate at which water moves through the soil and is controlled by properties of the soil horizons.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist chiefly of very 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 a moderately fine 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 horizon or horizons that impede the downward movement of water or soils that have a moderately fine 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 clayey soils that have a high linear extensibility; soils that have a zone, high in the profile, in which the soil moisture status is wet on a permanent basis; soils that have a claypan or clay horizon or horizons at or near the surface; and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas.

Flooding, the temporary covering of the soil surface by flowing water, is caused by overflow from streams or by runoff from adjacent slopes. Shallow water standing or flowing for short periods after rainfall or snowmelt is not considered flooding. Standing water in marshes and swamps or in closed depressions is considered to be ponding.

Table 21 gives estimates of the frequency and duration of flooding for every month of the year. Flooding frequency is the annual probability of a flood event expressed as a class. *None* indicates no reasonable possibility of flooding (the chance of flooding is nearly 0 percent in any year, or flooding is likely less than once in 500 years). *Very rare* indicates that flooding is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year, or flooding is likely less than once in 100 years but more than once in 500 years). *Rare* indicates that flooding is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year, or flooding is likely 1 to 5 times in 100 years). *Occasional* indicates that flooding occurs infrequently under usual weather conditions (the chance of flooding is 5 to 50 percent in any year, or flooding is likely 5 to 50 times in 100 years). *Frequent* indicates that flooding is likely to occur often under usual weather conditions (the chance of flooding is more than 50 percent in any year, or flooding is likely more than 50 times in 100 years; but the chance of flooding is less than 50 percent in all months in any year). *Very frequent* indicates that flooding is likely to occur very often under usual weather conditions (the chance of flooding is more than 50 percent in all months of any year).

Flooding duration is the average duration of

inundation per flood occurrence expressed as a class. *Extremely brief* is 0.1 hour to 4.0 hours; *very brief* is 4 to 48 hours; *brief* is 2 to 7 days; *long* is 7 to 30 days; and *very long* is more than 30 days. About two-thirds to three-fourths of all flooding occurs during the stated period.

The information on flooding 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 level 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.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation.

Table 22 gives estimates of the frequency, duration, and depth of ponding for every month of the year. The depths displayed are representative values that are indicative of conditions that occur most of the time.

Ponding frequency is the number of times ponding occurs over a period of time. *None* indicates no reasonable possibility of ponding (the chance of ponding is nearly 0 percent in any year). *Rare* indicates that ponding is unlikely but possible under unusual weather conditions (the chance of ponding ranges from nearly 0 percent to 5 percent in any year, or ponding is likely 0 to 5 times in 100 years). *Occasional* indicates that ponding is expected infrequently under usual weather conditions (the chance of ponding ranges from 5 to 50 percent in any one year, or ponding is likely 5 to 50 times in 100 years). *Frequent* indicates that ponding is likely to occur under usual weather conditions (the chance of ponding is more than 50 percent in any year, or ponding is likely more than 50 times in 100 years).

Ponding duration is the average length of time of the ponding occurrence. It is expressed as *very brief* (less than 2 days), *brief* (2 to 7 days), *long* (7 to 30 days), and *very long* (more than 30 days).

Soil Features

Table 23 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

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 a zone in which the soil moisture status is wet 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 saturated zone high in the profile during the 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.

Table 17.--Engineering Index Properties

(Absence of an entry indicates that the data were not estimated)

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
7A:													
Hubbard---------	95	0-20	Loamy sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-80	10-25	0-20	NP-4
		20-32	Sand, coarse sand, loamy sand	SP-SM	A-1, A-2-4, A-3	0	0	98-100	95-100	25-75	5-12	0-20	NP-4
		32-80	Sand, coarse sand	SP, SW	A-1, A-2, A-3	0	0	95-100	85-100	20-70	2-5	0-15	NP
7B:													
Hubbard---------	90	0-18	Loamy sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-80	10-25	0-20	NP-4
		18-23	Sand, coarse sand, loamy sand	SP-SM	A-1, A-2-4, A-3	0	0	98-100	95-100	25-75	5-12	0-20	NP-4
		23-80	Sand, coarse sand	SP, SW	A-1, A-2, A-3	0	0	95-100	85-100	20-70	2-5	0-15	NP
7C:													
Hubbard---------	80	0-12	Loamy sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-80	10-25	0-20	NP-4
		12-33	Sand, coarse sand, loamy sand	SP-SM	A-1, A-2-4, A-3	0	0	98-100	95-100	25-75	5-12	0-20	NP-4
		33-80	Sand, coarse sand	SP, SW	A-1, A-2, A-3	0	0	95-100	85-100	20-70	2-5	0-15	NP
8B:													
Sparta----------	95	0-16	Loamy sand	SM	A-2, A-4	0	0	85-100	85-100	35-95	15-50	0-14	NP
		16-29	Loamy fine sand, fine sand, loamy sand	SM, SP-SM	A-2, A-3, A-4	0	0	85-100	85-100	50-95	5-50	0-14	NP
		29-60	Sand, fine sand	SM, SP-SM, SP	A-2, A-3	0	0	85-100	85-100	50-95	2-30	0-14	NP
35:													
Blue Earth, depressional---	80	0-10	Mucky silty clay loam	OL, ML	A-5	0	0	95-100	95-100	85-95	80-95	41-50	2-8
		10-68	Mucky silty clay loam, clay loam, mucky silt loam	ML, OL	A-5	0	0	95-100	80-100	80-95	80-95	41-50	2-8
		68-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
74B:													
Dickinson-------	95	0-18	Fine sandy loam	SC, SC-SM, SM	A-2, A-4	0	0	100	100	85-95	30-50	15-30	NP-10
		18-30	Fine sandy loam, sandy loam	SC, SC-SM, SM	A-4	0	0	100	100	85-95	35-50	15-30	NP-10
		30-36	Sand, loamy fine sand, loamy sand	SM	A-2, A-3	0	0	100	100	70-90	5-20	---	NP
		36-60	Sand, loamy fine sand, loamy sand	SM	A-2, A-3	0	0	100	100	70-90	4-20	---	NP
86:													
Canisteo--------	80	0-18	Clay loam	OL, CL	A-6	0	0	95-100	95-100	85-100	60-100	40-50	15-20
		18-39	Clay loam, loam	CL	A-6	0-1	0-2	95-100	80-98	75-90	50-75	30-40	12-20
		39-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
106C2:													
Lester, eroded--	70	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		7-38	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		38-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
106D2:													
Lester, eroded--	80	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		7-38	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		38-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
106E:													
Lester----------	80	0-5	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		5-34	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		34-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
109:													
Cordova---------	90	0-18	Clay loam	MH, ML, CL, OH	A-6, A-7	0	0	95-100	95-100	90-100	70-85	40-60	15-25
		18-38	Silty clay loam, clay loam	CL	A-6	0	0	90-100	90-100	85-95	65-90	40-50	20-30
		38-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
114:													
Glencoe, depressional---	90	0-10	Clay loam	CL, ML, OL	A-6, A-7	0	0	95-100	90-100	75-100	60-90	40-50	15-20
		10-35	Silty clay loam, clay loam, loam	CL, OL, ML	A-6, A-7	0	0	95-100	90-100	75-100	60-90	30-50	10-20
		35-48	Loam, clay loam, silty clay loam	CL, ML	A-6	0	0	95-100	90-100	75-100	60-90	30-40	5-20
		48-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
138:													
Lerdal----------	80	0-7	Silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	80-95	60-90	35-50	10-22
		7-9	Silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	80-95	60-90	35-50	10-22
		9-47	Silty clay loam, clay loam	CL, ML, CH, MH	A-7	0	0	95-100	90-100	80-95	70-90	45-70	20-35
		47-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
158A:													
Zimmerman-------	90	0-7	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	95-100	10-20	0-20	NP-4
		7-80	Fine sand, loamy fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	95-100	70-100	4-20	0-20	NP-4
158B:													
Zimmerman-------	90	0-7	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	95-100	10-20	0-20	NP-4
		7-80	Fine sand, loamy fine sand	SP, SP-SM, SM	A-2, A-3	0	0	100	95-100	70-100	4-20	0-20	NP-4
158C:													
Zimmerman-------	90	0-7	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	95-100	10-20	0-20	NP-4
		7-80	Fine sand, loamy fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	95-100	70-100	4-20	0-20	NP-4
158E:													
Zimmerman-------	85	0-3	Fine sand	SM, SP-SM	A-2	0	0	100	95-100	95-100	10-20	0-20	NP-4
		3-80	Fine sand, loamy fine sand	SM, SP, SP-SM	A-2, A-3	0	0	100	95-100	70-100	4-20	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
169C:													
Braham----------	90	0-8	Loamy fine sand	SM	A-2	0	0	100	90-100	55-70	20-35	0-20	NP-4
		8-28	Loamy fine sand, loamy sand, fine sand	SM, SP-SM	A-2	0	0	100	90-100	65-90	10-20	0-20	NP-4
		28-48	Sandy clay loam, fine sandy loam, clay loam	CL, ML, SC	A-6, A-7	0-1	0-3	95-100	85-95	80-95	45-70	28-43	5-21
		48-80	Sandy clay loam, loam, clay loam	SC, CL, ML	A-6, A-7	0-1	0-3	95-100	85-95	80-95	45-70	28-43	5-21
181:													
Litchfield------	95	0-20	Loamy fine sand	SM	A-2	0	0	100	100	80-95	15-35	15-20	NP-4
		20-33	Fine sand	SM	A-2	0	0	100	100	80-95	20-35	15-20	NP-4
		33-40	Very fine sandy loam	ML, CL-ML	A-4	0	0	100	95-100	90-100	80-95	0-25	NP-5
		40-80	Loamy fine sand, loamy sand, sand	SM	A-2, A-3	0	0	100	100	70-95	5-30	15-20	NP-4
229:													
Waldorf---------	90	0-20	Silty clay loam	ML, MH	A-7	0	0	100	100	95-100	90-100	45-65	14-30
		20-53	Silty clay, silty clay loam	MH, ML	A-7	0	0	100	100	95-100	95-100	45-70	20-35
		53-80	Silty clay loam, silty clay, silt loam	ML, MH, CL	A-6, A-7	0	0	100	100	95-100	90-100	35-65	11-30
231C:													
Lester----------	80	0-9	Fine sandy loam	SM	A-4	0	0-5	95-100	95-100	75-90	35-50	15-25	NP-10
		9-53	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		53-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
231D:													
Lester----------	80	0-6	Fine sandy loam	SM	A-4	0	0-5	95-100	95-100	75-90	35-50	15-25	NP-10
		6-34	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		34-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
235:													
Nessel----------	85	0-6	Loam	CL	A-4, A-6	0	0-2	95-100	95-100	85-95	50-80	20-35	2-12
		6-38	Loam, clay loam	CL	A-6, A-7	0	2-5	90-100	85-100	80-95	55-75	35-50	15-25
		38-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
239:													
Le Sueur--------	80	0-17	Clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	90-100	75-90	35-50	10-25
		17-37	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	85-100	60-80	35-50	15-25
		37-46	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		46-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
247:													
Linder----------	90	0-13	Loam	SC	A-4, A-6	0	0	100	95-100	80-95	48-80	25-40	8-15
		13-24	Sandy loam	SC, SC-SM	A-2, A-4	0	0	95-100	80-100	45-75	30-45	20-30	5-10
		24-60	Stratified gravelly coarse sand to coarse sand to loamy coarse sand, gravelly loamy sand, loamy coarse sand	SP-SM, SW	A-1	0	0-5	75-95	30-95	25-50	2-12	0-14	NP
255:													
Mayer----------	85	0-18	Loam	CL	A-4, A-6	0	0-2	95-100	85-100	70-90	50-85	30-35	9-20
		18-33	Sandy clay loam, silt loam, clay loam	CL, SM, SC	A-4, A-6	0	0-2	80-95	80-85	70-85	35-50	30-35	3-20
		33-80	Gravelly coarse sand, sand, coarse sand	SP-SM, SW, SP	A-1	0-1	0-10	50-95	45-85	20-45	2-10	0-20	NP-4
256:													
Mazaska---------	90	0-15	Silty clay loam	CL, CH	A-6, A-7	0	0	95-100	95-100	85-100	70-95	35-55	12-28
		15-42	Clay, silty clay loam	CH, CL	A-7	0	0	90-100	85-100	75-95	60-90	40-65	15-35
		42-80	Loam, clay loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
258B:													
Sandberg--------	95	0-12	Loamy sand	SP-SM, SM	A-1, A-2	0	0-1	85-100	80-95	40-75	10-25	0-20	NP-4
		12-19	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SP-SM, SP	A-2, A-3, A-1	0-3	0-5	75-95	50-95	35-70	4-25	0-20	NP-4
		19-80	Gravelly coarse sand, coarse sand, sand	SP, SW, SP-SM	A-1, A-2, A-3	0-3	0-5	60-95	50-90	30-65	2-10	0-15	NP
258C:													
Sandberg--------	90	0-12	Loamy sand	SP-SM, SM	A-1, A-2	0	0-1	85-100	80-95	40-75	10-25	0-20	NP-4
		12-19	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SP-SM, SP	A-2, A-3, A-1	0-3	0-5	75-95	50-95	35-70	4-25	0-20	NP-4
		19-80	Gravelly coarse sand, coarse sand, sand	SP, SW, SP-SM	A-1, A-2, A-3	0-3	0-5	60-95	50-90	30-65	2-10	0-15	NP
258E:													
Sandberg--------	85	0-12	Loamy sand	SP-SM, SM	A-1, A-2	0	0-1	85-100	80-95	40-75	10-25	0-20	NP-4
		12-19	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SP-SM, SP	A-2, A-3, A-1	0-3	0-5	75-95	50-95	35-70	4-25	0-20	NP-4
		19-80	Gravelly coarse sand, coarse sand, sand	SP, SW, SP-SM	A-3, A-1, A-2	0-3	0-5	60-95	50-90	30-65	2-10	0-15	NP
260:													
Duelm----------	90	0-16	Loamy sand	SM, SP-SM	A-1, A-2	0	0	90-100	85-100	35-75	10-25	15-20	NP-4
		16-30	Loamy sand, coarse sand, sand	SM, SP-SM	A-1, A-2, A-3	0	0	90-100	85-100	35-75	5-25	15-20	NP-4
		30-80	Coarse sand, sand	SM, SP, SP-SM	A-1, A-2, A-3	0	0	85-100	75-100	35-75	3-15	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
261:													
Isan, depressional---	90	0-14	Sandy loam	SC-SM, SM	A-2	0	0	95-100	92-100	50-75	15-35	0-30	NP-7
		14-34	Sand, loamy sand	SM, SP-SM	A-2	0	0	95-100	92-100	50-75	10-30	0-20	NP-4
		34-80	Sand, coarse sand	SM, SP	A-1, A-2, A-3	0	0	85-100	85-100	35-70	2-15	0-20	NP-4
286B:													
Shorewood-------	95	0-17	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	90-100	85-100	35-50	12-20
		17-39	Silty clay, silty clay loam	CH, MH	A-7	0	0	100	100	90-100	85-100	55-75	20-45
		39-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
294A:													
Rasset----------	90	0-15	Sandy loam	SC-SM, SC, SM	A-2, A-4	0	0-5	90-100	75-100	50-70	30-50	0-30	NP-10
		15-28	Sandy loam, loam	SC, SC-SM, SM	A-4, A-6	0	0-5	90-100	75-100	50-80	35-50	0-35	NP-15
		28-36	Loamy sand, loamy coarse sand, gravelly sand	SM, SP-SM, SP	A-1, A-2, A-3	0-1	0-5	75-100	50-100	40-80	2-15	0-20	NP-4
		36-80	Sand, coarse sand, gravelly sand	SP-SM, SP, SW	A-1, A-2, A-3	0-1	0-5	60-100	50-100	25-75	2-8	0-20	NP-4
323:													
Shields---------	95	0-8	Silty clay loam	CL, ML	A-6, A-7	0	0	95-100	95-100	90-100	85-95	35-50	12-20
		8-41	Silty clay, silty clay, clay, clay	CL, CH, MH	A-7	0	0	95-100	95-100	90-100	85-95	45-70	20-35
		41-80	Silty clay loam, silty clay loam, clay loam, clay loam, clay, clay	MH, CL, ML	A-6, A-7	0	0	95-100	90-100	85-100	80-95	35-65	12-30

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
327A:													
Dickman---------	85	0-12	Sandy loam	SM	A-2, A-4	0	0	95-100	95-100	55-95	25-40	20-30	2-8
		12-19	Sandy loam, fine sandy loam, loamy sand	SC-SM, SM	A-2, A-4	0	0	95-100	85-100	55-95	25-45	15-25	2-8
		19-33	Sand, coarse sand, loamy sand	SP-SM	A-1, A-2-4, A-3	0	0	98-100	95-100	45-75	4-12	0-20	NP-4
		33-80	Fine sand, coarse sand, sand	SP-SM	A-2, A-3	0	0	95-100	75-100	45-80	5-10	0-14	NP
327B:													
Dickman---------	85	0-12	Sandy loam	SM	A-2, A-4	0	0	95-100	95-100	55-95	25-40	20-30	2-8
		12-19	Sandy loam, fine sandy loam, loamy sand	SC-SM, SM	A-2, A-4	0	0	95-100	85-100	55-95	25-45	15-25	2-8
		19-33	Sand, coarse sand, loamy sand	SP-SM	A-1, A-2-4, A-3	0	0	98-100	95-100	45-75	4-12	0-20	NP-4
		33-80	Fine sand, coarse sand, sand	SP-SM	A-2, A-3	0	0	95-100	75-100	45-80	5-10	0-14	NP
375:													
Forada----------	85	0-16	Loam	CL-ML, CL	A-4	0	0	95-100	85-100	70-90	50-70	25-35	5-20
		16-28	Sandy loam, loam, fine sandy loam	SM, ML, CL-ML	A-2, A-4	0	0	95-100	85-100	55-85	30-60	15-30	NP-10
		28-60	Coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	50-100	50-100	40-70	4-30	---	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
392:													
Biscay----------	90	0-20	Loam	ML, CL	A-7, A-6	0	0	95-100	95-100	70-95	50-80	35-50	10-25
		20-28	Loam, clay loam, sandy clay loam	ML, CL	A-6, A-7	0	0	95-100	90-100	70-90	50-75	30-50	10-20
		28-36	Gravelly loam, sandy loam, gravelly sandy loam	SM, SC-SM, SC	A-4	0	0-5	95-100	70-95	50-80	35-50	0-30	NP-10
		36-60	Stratified gravelly coarse sand to loamy sand	GP, SP, SP-SM, GP-GM	A-1	0	0-5	45-95	35-95	20-45	2-10	0-20	NP-4
406:													
Dorset----------	90	0-11	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	85-100	50-70	25-50	0-25	NP-5
		11-19	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		19-32	Gravelly loamy sand, gravelly coarse sand, coarse sand	GM, SC-SM, SM	A-1, A-2	0	0-5	50-90	50-75	20-50	10-25	0-20	NP-7
		32-80	Gravelly coarse sand, gravelly sand, coarse sand	GP-GM, GP, SP-SM, SP	A-1	0	0-5	50-90	50-75	15-40	0-10	0-20	NP-4
414:													
Hamel----------	90	0-24	Loam	CL, ML	A-4, A-6	0	0	100	95-100	85-100	60-85	30-40	5-20
		24-46	Clay loam, loam, silty clay loam	CH, CL	A-6	0	0	95-100	95-100	85-95	65-80	40-55	25-35
		46-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
441:													
Almora----------	90	0-10	Loam	CL-ML, SC-SM, SC	A-4	0	0	95-100	85-100	45-85	45-75	23-30	6-11
		10-14	Sandy loam, fine sandy loam, loam	CL-ML, SC-SM, SC	A-4	0	0	95-100	85-100	45-85	35-65	23-30	6-11
		14-36	Sandy clay loam, gravelly sandy clay loam, loam	CL, SC	A-4, A-6	0	0-5	95-100	60-98	40-80	40-75	34-39	9-18
		36-41	Gravelly loamy coarse sand, sand, loamy sand	SM, SC-SM, SP-SM	A-1-a, A-1-b, A-3	0	0-5	50-90	30-85	20-70	5-20	0-20	NP-6
		41-80	Gravelly coarse sand, sand, coarse sand	SP, SP-SM, SW	A-1-a, A-1-b	0	0-5	45-90	30-80	5-30	0-10	0-20	NP-4
461B:													
Koronis---------	85	0-8	Loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	80-95	75-90	50-70	25-35	5-14
		8-31	Sandy clay loam, loam, fine sandy loam	CL, SC	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		31-80	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
461C2:													
Koronis, eroded	80	0-8	Loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	80-95	75-90	50-70	25-35	5-14
		8-31	Sandy clay loam, loam, fine sandy loam	CL, SC	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		31-80	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
461E:													
Koronis---------	80	0-7	Loam	CL-ML, CL	A-4, A-6	0-1	0-5	85-100	80-95	75-90	50-70	25-35	5-14
		7-28	Sandy clay loam, loam, fine sandy loam	CL, SC	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		28-80	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
511:													
Marcellon,													
MAP <30--------	85	0-13	Loam	CL	A-4, A-6	0	0-5	85-100	75-100	55-95	45-80	20-30	6-11
		13-32	Loam, clay loam, sandy clay loam	SC, CL	A-2, A-6	0	0-9	85-100	75-95	60-95	25-80	30-35	11-14
		32-60	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
523:													
Houghton,													
drained--------	80	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-80	Muck	PT	A-8	0	0	---	---	---	---	---	---
525:													
Muskego, surface													
drained--------	75	0-9	Muck	PT	A-8	0	0	---	---	---	---	---	---
		9-36	Muck	PT	A-8	0	0	---	---	---	---	---	---
		36-60	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
539:													
Klossner,													
drained--------	80	0-26	Muck	PT	A-8	0	0	---	---	---	---	---	---
		26-36	Mucky silt loam, mucky silty clay loam, silt loam	MH	A-7	0	0	100	95-100	90-100	85-95	60-90	10-30
		36-48	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	80-100	60-90	35-65	20-30
		48-80	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0-5	90-100	85-100	60-95	55-80	30-55	10-25
540:													
Seelyeville,													
surface drained	80	0-10	Muck	PT	A-8	0	0	---	---	---	---	---	---
		10-80	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
543:													
Markey, surface drained--------	80	0-36	Muck	PT	A-8	---	---	---	---	---	---	---	---
		36-42	Fine sand, loamy sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	0-20	NP-4
		42-80	Fine sand, sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	0-20	NP-4
548:													
Medo, drained---	80	0-27	Muck	PT	A-8	---	---	---	---	---	---	---	---
		27-35	Sandy clay loam, mucky loam, silt loam	CL, ML	A-6, A-7	0	0	85-100	75-100	55-95	45-85	35-50	7-22
		35-39	Sandy clay loam	CL, SC	A-6, A-7	0	0	85-100	75-100	55-95	45-85	30-65	8-16
		39-80	Sand, gravelly coarse sand, gravelly loamy coarse sand, fine sand	SP, SP-SM, SM	A-1, A-2, A-3, A-4	0-2	0-5	75-95	60-95	20-75	2-40	0-20	NP-4
603:													
Hanlon, occasionally flooded--------	80	0-40	Fine sandy loam	SM, SC, SC-SM	A-4	0	0	100	100	75-80	35-50	25-35	5-10
		40-63	Fine sandy loam, sandy loam	SM, SC, SC-SM	A-4	0	0	100	100	75-80	35-50	25-35	5-10
		63-70	Sandy loam, fine sandy loam, loamy fine sand	SC, SC-SM	A-2, A-4	0	0	100	100	75-80	25-40	15-25	5-10
		70-80	Stratified sand to loamy fine sand to fine sandy loam, sandy loam, loamy sand	SP-SM, CL, SC, SC-SM	A-2, A-4	0	0	100	100	80-90	5-60	15-35	3-10
611D:													
Hawick----------	85	0-10	Gravelly sandy loam	SP-SM, SP	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	4-35	0-14	NP-4
		10-60	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
708:													
Rushlake--------	85	0-9	Coarse sand	SM, SP, SP-SM	A-1-b, A-2-4, A-3	0	0	95-100	75-100	10-55	2-15	---	NP
		9-80	Gravelly sand, gravelly loamy sand, coarse sand	SP, SP-SM	A-1-b, A-3	0	0-3	55-95	50-90	15-60	2-10	---	NP
740:													
Hamel----------	70	0-24	Loam	CL, ML	A-4, A-6	0	0	100	95-100	85-100	60-85	30-40	5-20
		24-46	Clay loam, loam, silty clay loam	CH, CL	A-6	0	0	95-100	95-100	85-95	65-80	40-55	25-35
		46-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Glencoe, depressional---	20	0-10	Clay loam	CL, ML, OL	A-6, A-7	0	0	95-100	90-100	75-100	60-90	40-50	15-20
		10-35	Silty clay loam, clay loam, loam	CL, OL, ML	A-6, A-7	0	0	95-100	90-100	75-100	60-90	30-50	10-20
		35-48	Loam, clay loam, silty clay loam	CL, ML	A-6	0	0	95-100	90-100	75-100	60-90	30-40	5-20
		48-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
768:													
Mosford---------	85	0-13	Sandy loam	SM	A-2-4, A-4	0	0	100	85-100	50-85	25-55	0-25	NP-6
		13-16	Sandy loam, coarse sandy loam, fine sandy loam	SM	A-4, A-2-4	0	0	100	85-100	55-85	25-55	0-25	NP-6
		16-35	Coarse sand, sand, loamy sand	SP, SP-SM	A-2-4, A-3	0	0	100	85-100	45-65	4-30	0-20	NP-4
		35-80	Coarse sand, sand, gravelly coarse sand	SP, SP-SM, SW	A-1, A-3	0	0	95-100	50-100	45-75	4-15	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
771:													
Elkriver, rarely flooded--------	85	0-10	Fine sandy loam	ML, SM	A-4	0	0	100	85-100	50-95	30-65	0-25	NP-4
		10-35	Fine sandy loam, very fine sandy loam, loam	ML, SM	A-4	0	0	100	85-100	65-95	35-75	0-30	NP-6
		35-39	Very fine sandy loam, fine sandy loam, loam	ML, SM	A-4	0	0	100	85-100	65-95	35-75	0-30	NP-6
		39-80	Fine sand, sand, gravelly sand	SM, SP-SM, SP	A-1-b, A-2-4, A-3	0	0	95-100	65-100	40-75	4-15	0-20	NP-4
783C2:													
Lester, eroded--	50	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		7-38	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		38-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Kilkenny, eroded	30	0-9	Clay loam	ML, CL	A-6, A-7	0	0	95-100	95-100	80-95	70-85	35-50	10-25
		9-53	Clay loam, clay, silty clay loam	CH, MH	A-7	0	0	95-100	90-100	80-95	65-80	50-70	25-35
		53-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
792:													
Fordum, frequently flooded--------	90	0-7	Fine sandy loam	SC-SM, CL-ML, SM	A-1, A-2, A-4	0	0-5	80-100	75-100	45-95	20-65	0-30	NP-7
		7-28	Silt loam, sandy loam, gravelly loam	CL, ML, SC, SM	A-1, A-2, A-4	0	0-5	30-100	25-100	20-100	10-90	15-30	3-10
		28-80	Sand, very gravelly loamy fine sand	GP, SM, SP	A-1, A-2, A-3	0	0-5	30-100	25-100	7-95	1-50	0-20	NP-4
799:													
Seelyeville, frequently flooded--------	45	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	---
		12-80	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
799:													
Bowstring, frequently flooded--------	45	0-38	Muck	PT	A-8	0	0	---	---	---	---	---	---
		38-47	Stratified fine sand to fine sandy loam	SC-SM, SM, SP-SM	A-2	0	0	100	100	50-85	10-35	15-20	NP-5
		47-80	Muck	PT	A-8	0	0	---	---	---	---	---	---
804B:													
Koronis---------	50	0-8	Sandy loam	SM	A-4, A-6	0-1	0-5	85-100	80-95	75-90	45-70	25-35	3-14
		8-25	Sandy clay loam, sandy loam, fine sandy loam	SC, CL	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		25-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Sunburg---------	20	0-7	Sandy loam	SC-SM, SC, SM	A-2, A-4	0-1	0-5	85-95	75-95	50-80	30-50	15-30	2-10
		7-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Hawick----------	15	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP
804C2:													
Koronis, eroded	45	0-8	Sandy loam	SM	A-4, A-6	0-1	0-5	85-100	80-95	75-90	45-70	25-35	3-14
		8-25	Sandy clay loam, sandy loam, fine sandy loam	SC, CL	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		25-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
804C2:													
Sunburg---------	25	0-7	Sandy loam	SC-SM, SC, SM	A-2, A-4	0-1	0-5	85-95	75-95	50-80	30-50	15-30	2-10
		7-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Hawick----------	15	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP
804D2:													
Koronis, eroded	40	0-8	Sandy loam	SM	A-4, A-6	0-1	0-5	85-100	80-95	75-90	45-70	25-35	3-14
		8-25	Sandy clay loam, sandy loam, fine sandy loam	SC, CL	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		25-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Sunburg---------	30	0-7	Sandy loam	SC-SM, SC, SM	A-2, A-4	0-1	0-5	85-95	75-95	50-80	30-50	15-30	2-10
		7-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Hawick----------	15	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
804E:													
Koronis---------	50	0-5	Fine sandy loam	SM	A-4, A-6	0-1	0-5	85-100	80-95	75-90	45-70	25-35	3-14
		5-21	Sandy clay loam, sandy loam, fine sandy loam	SC, CL	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		21-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Sunburg---------	20	0-4	Fine sandy loam	SC-SM, SC, SM	A-2, A-4	0-1	0-5	85-95	75-95	50-80	30-50	15-30	2-10
		4-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Hawick----------	15	0-11	Gravelly loamy coarse sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	4-35	0-14	NP-4
		11-16	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		16-60	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP
807D2:													
Koronis, eroded	65	0-8	Sandy loam	SM	A-4, A-6	0-1	0-5	85-100	80-95	75-90	45-70	25-35	3-14
		8-25	Sandy clay loam, sandy loam, fine sandy loam	SC, CL	A-6	0-1	0-5	85-100	80-95	70-90	35-70	30-40	10-20
		25-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
Sunburg---------	20	0-7	Sandy loam	SC-SM, SC, SM	A-2, A-4	0-1	0-5	85-95	75-95	50-80	30-50	15-30	2-10
		7-60	Sandy loam, fine sandy loam, loam	SC-SM, SC	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
875B:													
Estherville-----	60	0-13	Sandy loam	SM, SC-SM, SC	A-2, A-4	0	0-5	90-100	80-100	50-75	25-50	20-30	2-10
		13-18	Sandy loam, loam, coarse sandy loam	SC-SM, SM, SC	A-1, A-2, A-4	0	0-5	85-100	80-95	40-75	15-45	20-30	2-8
		18-23	Coarse sand, gravelly coarse sand, loamy coarse sand	SP-SM, SP, SM	A-2	0	0-10	55-90	50-85	10-40	2-25	0-14	NP
		23-60	Coarse sand, gravelly coarse sand, loamy coarse sand	GP, SP-SM, SM, SP	A-1	0	0-10	55-90	50-85	10-40	2-25	0-14	NP
Hawick----------	30	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP
875C:													
Hawick----------	60	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
875C:													
Estherville-----	25	0-13	Sandy loam	SC, SC-SM, SM	A-2, A-4	0	0-5	90-100	80-100	50-75	25-50	20-30	2-10
		13-18	Sandy loam, loam, coarse sandy loam	SC-SM, SM, SC	A-1, A-2, A-4	0	0-5	85-100	80-95	40-75	15-45	20-30	2-8
		18-23	Coarse sand, gravelly coarse sand, loamy coarse sand	SP-SM, SP, SM	A-2	0	0-10	55-90	50-85	10-40	2-25	0-14	NP
		23-60	Coarse sand, gravelly coarse sand, loamy coarse sand	GP, SM, SP, SP-SM	A-1	0	0-10	55-90	50-85	10-40	2-25	0-14	NP
896B:													
Kingsley--------	70	0-6	Sandy loam	SC-SM, SM	A-2, A-4	0	0-5	90-100	75-100	50-85	30-45	15-20	NP-5
		6-18	Sandy loam, fine sandy loam, loamy sand	SM, SC-SM	A-2, A-4	0	0-5	90-100	75-100	40-75	20-45	10-20	NP-5
		18-45	Sandy loam, coarse sandy loam	SC-SM, SM, SC	A-2, A-4	0	0-5	90-100	75-95	50-75	25-45	15-25	3-9
		45-80	Sandy loam, coarse sandy loam	SM, SC-SM	A-2, A-4	0	0-5	90-100	75-95	50-75	25-40	15-20	NP-5
Gotham----------	25	0-9	Loamy sand	SM	A-1, A-2, A-4	0	0	100	95-100	45-95	15-50	0-14	NP
		9-18	Loamy fine sand, loamy sand	SP-SM, SM	A-1, A-2, A-4	0	0	95-100	75-100	40-95	12-50	0-14	NP
		18-40	Sand, loamy fine sand, loamy sand	SP-SM, SM, SP	A-1, A-2, A-4	0	0	95-100	75-100	40-95	4-50	0-14	NP
		40-80	Fine sand, loamy sand, sand	SP-SM, SP	A-1, A-2, A-3	0	0	95-100	75-100	40-80	1-35	0-14	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
896C:													
Kingsley--------	70	0-6	Sandy loam	SC-SM, SM	A-2, A-4	0	0-5	90-100	75-100	50-85	30-45	15-20	NP-5
		6-18	Sandy loam, fine sandy loam, loamy sand	SM, SC-SM	A-2, A-4	0	0-5	90-100	75-100	40-75	20-45	10-20	NP-5
		18-45	Sandy loam, coarse sandy loam	SC-SM, SM, SC	A-2, A-4	0	0-5	90-100	75-95	50-75	25-45	15-25	3-9
		45-80	Sandy loam, coarse sandy loam	SM, SC-SM	A-2, A-4	0	0-5	90-100	75-95	50-75	25-40	15-20	NP-5
Gotham----------	25	0-9	Loamy sand	SM	A-1, A-2, A-4	0	0	100	95-100	45-95	15-50	0-14	NP
		9-18	Loamy fine sand, loamy sand	SP-SM, SM	A-1, A-2, A-4	0	0	95-100	75-100	40-95	12-50	0-14	NP
		18-40	Sand, loamy fine sand, loamy sand	SP-SM, SM, SP	A-1, A-2, A-4	0	0	95-100	75-100	40-95	4-50	0-14	NP
		40-80	Fine sand, loamy sand, sand	SP-SM, SP	A-1, A-2, A-3	0	0	95-100	75-100	40-80	1-35	0-14	NP
945C2:													
Lester, eroded--	50	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		7-38	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		38-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Storden, eroded	30	0-7	Loam	CL	A-6	0	0-5	95-100	95-98	75-95	60-75	28-36	9-15
		7-55	Loam, clay loam	CL	A-6	0	0-5	95-100	90-98	70-95	55-70	28-39	9-18
		55-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
945D2:													
Lester, eroded--	60	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		7-38	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		38-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Storden, eroded	20	0-7	Loam	CL	A-6	0	0-5	95-100	95-98	75-95	60-75	28-36	9-15
		7-55	Loam, clay loam	CL	A-6	0	0-5	95-100	90-98	70-95	55-70	28-39	9-18
		55-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
956:													
Canisteo--------	65	0-18	Clay loam	OL, CL	A-6	0	0	95-100	95-100	85-100	60-100	40-50	15-20
		18-39	Clay loam, loam	CL	A-6	0-1	0-2	95-100	80-98	75-90	50-75	30-40	12-20
		39-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Glencoe, depressional---	25	0-10	Clay loam	OL, CL, ML	A-6, A-7	0	0	95-100	90-100	75-100	60-90	40-50	15-20
		10-35	Silty clay loam, clay loam, loam	CL, OL, ML	A-6, A-7	0	0	95-100	90-100	75-100	60-90	30-50	10-20
		35-48	Loam, clay loam, silty clay loam	CL, ML	A-6	0	0	95-100	90-100	75-100	60-90	30-40	5-20
		48-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
978:													
Cordova---------	60	0-18	Clay loam	MH, ML, CL, OH	A-6, A-7	0	0	95-100	95-100	90-100	70-85	40-60	15-25
		18-38	Silty clay loam, clay loam	CL	A-6	0	0	90-100	90-100	85-95	65-90	40-50	20-30
		38-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Rolfe, depressional---	30	0-12	Silt loam	CL, ML, OL	A-4, A-6	0	0	100	95-100	90-100	80-95	30-40	5-15
		12-20	Silt loam, clay loam	ML, CL	A-6, A-4	0	0	100	95-100	90-100	75-95	30-40	5-35
		20-35	Silty clay	CH	A-7	0	0	100	95-100	90-100	90-100	50-65	25-35
		35-51	Clay loam, loam	CL	A-6, A-7	0	0	95-100	90-100	80-90	55-75	30-45	10-20
		51-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1000:													
Arvilla, MAP >25	90	0-14	Sandy loam	SC, SC-SM, SM	A-2, A-4, A-6	0	0	95-100	90-100	50-80	20-45	15-30	NP-15
		14-20	Sandy loam, loam, coarse sandy loam	SC, SC-SM, SM	A-2, A-4, A-6	0	0	90-100	85-100	50-80	20-45	15-40	NP-15
		20-80	Gravelly coarse sand, coarse sand, very gravelly coarse sand	GP, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0	35-100	25-100	10-60	0-15	---	NP
1015. Udipsamments (cut and fill land)													

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1016. Udorthents, loamy													
1023C:													
Lester, eroded--	50	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		7-38	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		38-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Malardi---------	35	0-10	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-75	25-50	0-25	NP-5
		10-15	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		15-29	Coarse sand, loamy coarse sand, gravelly coarse sand	SC-SM, SM, SP-SM	A-1, A-2, A-3	0	0-5	75-90	70-85	20-65	5-25	0-20	NP-7
		29-80	Sand, coarse sand, gravelly sand	SP-SM, SP	A-1, A-1-b	0	0-10	55-90	55-85	20-60	2-10	0-20	NP-4
1023D:													
Lester, eroded--	45	0-7	Loam	CL-ML, CL	A-4, A-6	0	0-2	95-100	90-100	80-95	50-85	25-40	5-15
		7-38	Clay loam, loam	CL	A-6	0-1	0-3	95-100	90-100	80-95	55-75	35-40	15-20
		38-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		60-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Malardi---------	40	0-9	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-75	25-50	0-25	NP-5
		9-14	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-4	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		14-21	Coarse sand, loamy coarse sand, gravelly coarse sand, gravelly loamy coarse sand	SC-SM, SM, SP-SM	A-1, A-2, A-3	0	0-5	75-90	70-85	20-65	5-25	0-20	NP-7
		21-80	Sand, coarse sand, gravelly sand	SP, GP, SP-SM	A-1, A-1-b	0	0-10	55-90	55-85	20-60	2-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1026B:													
Lizzie, moderately wet	90	0-12	Silt loam	CL, CL-ML	A-4, A-6	0	0	100	97-100	85-100	60-90	28-32	6-13
		12-36	Silt loam, silty clay loam, loam	CL	A-4, A-6	0	0	100	97-100	80-100	75-95	28-43	9-21
		36-40	Silt loam, loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	100	97-100	85-100	60-90	15-30	NP-11
		40-80	Very fine sandy loam, silt loam, loamy very fine sand	CL-ML, SC-SM, SM	A-2-4, A-4	0	0	100	97-100	65-95	15-90	15-26	NP-8
1027. Udorthents, wet substratum													
1030:													
Pits, gravel.													
Udipsamments.													
1035B:													
Crowfork--------	90	0-11	Loamy sand	SM	A-1, A-2	0	0	95-100	85-100	40-100	15-30	0-20	NP-4
		11-20	Fine sand, loamy fine sand, loamy sand	SP-SM, SM	A-2, A-3	0	0	95-100	85-100	40-100	5-20	0-20	NP-4
		20-76	Fine sand, loamy sand, sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	95-100	75-100	40-75	0-15	0-20	NP-4
		76-80	Sand, coarse sand	SP	A-1, A-2	0	0	95-100	75-100	40-75	0-15	0-20	NP
1035C:													
Crowfork--------	90	0-11	Loamy sand	SM	A-1, A-2	0	0	95-100	85-100	40-100	15-30	0-20	NP-4
		11-20	Fine sand, loamy fine sand, loamy sand	SP-SM, SM	A-2, A-3	0	0	95-100	85-100	40-100	5-20	0-20	NP-4
		20-76	Fine sand, loamy sand, sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	95-100	75-100	40-75	0-15	0-20	NP-4
		76-80	Sand, coarse sand	SP	A-1, A-2	0	0	95-100	75-100	40-75	0-15	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1035D:													
Crowfork--------	85	0-11	Loamy sand	SM	A-1, A-2	0	0	95-100	85-100	40-100	15-30	0-20	NP-4
		11-20	Fine sand, loamy fine sand, loamy sand	SM, SP-SM	A-2, A-3	0	0	95-100	85-100	40-100	5-20	0-20	NP-4
		20-76	Fine sand, loamy sand, sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	95-100	75-100	40-75	0-15	0-20	NP-4
		76-80	Sand, coarse sand	SP	A-1, A-2	0	0	95-100	75-100	40-75	0-15	0-15	NP
1036B:													
Angus----------	85	0-9	Fine sandy loam	SM	A-4	0	0-5	95-100	95-100	75-90	35-50	15-25	NP-10
		9-46	Clay loam, loam	CL	A-6	0-1	0-5	95-100	90-100	80-95	55-75	35-40	15-20
		46-58	Loam, clay loam	CL	A-6	0-1	0-5	95-100	90-100	75-90	50-75	32-39	13-18
		58-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1037:													
Eckvoll, MAP >25	90	0-9	Loamy fine sand	SC-SM, SM	A-2, A-4	0	0-2	90-100	85-100	45-80	25-40	15-20	NP-7
		9-24	Fine sand, sand, loamy fine sand	SM, SP-SM	A-1, A-2, A-3	0	0-2	90-100	85-100	45-75	5-30	15-20	NP-4
		24-45	Clay loam, sandy clay loam, loam	CL, SC	A-7, A-4, A-6	0	0-5	90-100	85-98	65-95	45-75	25-50	7-25
		45-80	Loam, clay loam, fine sandy loam	CL	A-4, A-6, A-7	0	0-5	90-100	85-98	70-95	50-80	25-45	7-20
1038A:													
Verndale, acid substratum-----	90	0-10	Sandy loam	SM	A-2, A-4	0	0	100	85-100	60-85	25-45	0-20	NP-6
		10-19	Sandy loam, fine sandy loam, loam	SC-SM, SM	A-2-4, A-4	0	0	98-100	85-100	60-85	25-45	15-30	4-7
		19-28	Sand, coarse sand, loamy coarse sand	SM, SW	A-2-4, A-3	0	0	98-100	85-100	50-65	4-20	0-20	NP-4
		28-80	Sand, coarse sand	SP-SM, SW, SP	A-1-b, A-2-4, A-3	0	0	96-100	75-100	45-60	3-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1038B:													
Verndale, acid substratum-----	85	0-10	Sandy loam	SM	A-2, A-4	0	0	100	85-100	60-85	25-45	0-20	NP-6
		10-19	Sandy loam, fine sandy loam, loam	SC-SM, SM	A-2-4, A-4	0	0	98-100	85-100	60-85	25-45	15-30	4-7
		19-28	Sand, coarse sand, loamy coarse sand	SM, SW	A-2-4, A-3	0	0	98-100	85-100	50-65	4-20	0-20	NP-4
		28-80	Sand, coarse sand	SP-SM, SP, SW	A-1-b, A-2-4, A-3	0	0	96-100	75-100	45-60	3-10	0-20	NP-4
1066B:													
Malardi---------	65	0-10	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-75	25-50	0-25	NP-5
		10-15	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		15-29	Coarse sand, loamy coarse sand, gravelly coarse sand	SC-SM, SM, SP-SM	A-1, A-2, A-3	0	0-5	75-90	70-85	20-65	5-25	0-20	NP-7
		29-80	Sand, coarse sand, gravelly sand	SP-SM, SP	A-1, A-1-b	0	0-10	55-90	55-85	20-60	2-10	0-20	NP-4
Hawick----------	25	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1066C:													
Malardi---------	60	0-10	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-75	25-50	0-25	NP-5
		10-15	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		15-29	Coarse sand, loamy coarse sand, gravelly coarse sand	SC-SM, SM, SP-SM	A-1, A-2, A-3	0	0-5	75-90	70-85	20-65	5-25	0-20	NP-7
		29-80	Sand, coarse sand, gravelly sand	SP-SM, SP	A-1, A-1-b	0	0-10	55-90	55-85	20-60	2-10	0-20	NP-4
Hawick----------	25	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP
1066E:													
Malardi---------	55	0-9	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-75	25-50	0-25	NP-5
		9-14	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-6, A-4	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		14-21	Coarse sand, loamy coarse sand, gravelly coarse sand, gravelly loamy coarse sand	SC-SM, SM, SP-SM	A-3, A-1, A-2	0	0-5	75-90	70-85	20-65	5-25	0-20	NP-7
		21-80	Sand, coarse sand, gravelly sand	SP, GP, SP-SM	A-1, A-1-b	0	0-10	55-90	55-85	20-60	2-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1066E:													
Hawick----------	30	0-7	Sandy loam	SM	A-2	0-2	0-5	85-100	80-95	50-65	25-35	0-20	NP-4
		7-11	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	5-25	0-15	NP
		11-80	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP
1072. Udorthents, shallow													
1075:													
Klossner, ponded	40	0-26	Muck	PT	A-8	0	0	---	---	---	---	---	---
		26-33	Silt loam, silty clay loam	MH	A-7	0	0	100	95-100	90-100	85-95	60-90	10-30
		33-40	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	80-100	60-90	35-65	20-30
		40-80	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0-5	90-100	85-100	60-95	55-80	30-55	10-25
Muskego, ponded	40	0-9	Muck	PT	A-8	0	0	---	---	---	---	---	---
		9-36	Muck	PT	A-8	0	0	---	---	---	---	---	---
		36-60	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
1080:													
Klossner, ponded	30	0-26	Muck	PT	A-8	0	0	---	---	---	---	---	---
		26-33	Silt loam, silty clay loam	MH	A-7	0	0	100	95-100	90-100	85-95	60-90	10-30
		33-40	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	80-100	60-90	35-65	20-30
		40-80	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0-5	90-100	85-100	60-95	55-80	30-55	10-25

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1080:													
Okoboji, ponded	30	0-10	Mucky silty clay loam	MH	A-7	0	0	100	100	95-100	90-95	60-90	10-30
		10-52	Silty clay loam, silty clay	CH	A-7	0	0	100	100	90-100	80-95	55-65	30-40
		52-60	Silty clay loam, silty clay	CH	A-7	0	0	95-100	95-100	90-100	80-95	55-65	30-40
Glencoe, ponded	30	0-42	Silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	75-100	60-90	30-55	10-25
		42-50	Loam, clay loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	75-100	60-90	30-50	10-25
		50-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1087B:													
Angus----------	55	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	50-85	30-40	11-15
		8-35	Clay loam, loam	CL	A-6	0-1	0-5	95-100	90-100	80-95	55-75	35-40	15-20
		35-40	Loam, clay loam	CL	A-6	0-1	0-5	95-100	90-100	75-90	50-75	32-39	13-18
		40-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Malardi---------	30	0-10	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	80-100	50-75	25-50	0-25	NP-5
		10-15	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		15-29	Coarse sand, loamy coarse sand, gravelly coarse sand	SM, SP-SM, SC-SM	A-2, A-3, A-1	0	0-5	75-90	70-85	20-65	5-25	0-20	NP-7
		29-80	Sand, coarse sand, gravelly sand	SP-SM, SP	A-1, A-1-b	0	0-10	55-90	55-85	20-60	2-10	0-20	NP-4
1094B:													
Angus----------	60	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	50-85	30-40	11-15
		8-35	Clay loam, loam	CL	A-6	0-1	0-5	95-100	90-100	80-95	55-75	35-40	15-20
		35-40	Loam, clay loam	CL	A-6	0-1	0-5	95-100	90-100	75-90	50-75	32-39	13-18
		40-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Cordova---------	30	0-13	Loam	CL	A-4, A-6	0	0	95-100	95-100	90-100	70-85	25-40	8-20
		13-33	Silty clay loam, clay loam	CL	A-7	0	0	90-100	90-100	85-95	65-90	40-50	20-30
		33-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1099:													
Granby, very wet	85	0-12	Loamy fine sand	SM	A-2	0	0	100	100	50-80	15-35	0-14	NP
		12-24	Sand, loamy fine sand, loamy sand	SM, SP-SM	A-3, A-1, A-2	0	0	100	95-100	45-80	5-35	0-14	NP
		24-60	Coarse sand, fine sand, loamy fine sand	SP-SM, SM	A-1, A-2, A-3	0	0	100	95-100	45-80	5-35	0-14	NP
1110:													
Isan----------	90	0-18	Sandy loam	SC-SM, SM	A-2	0	0	95-100	92-100	50-75	15-35	0-30	NP-7
		18-29	Sand, loamy sand	SM, SP-SM	A-2	0	0	95-100	92-100	50-75	10-30	0-20	NP-4
		29-80	Sand, coarse sand	SM, SP	A-1, A-2, A-3	0	0	85-100	85-100	35-70	2-15	0-20	NP-4
1156:													
Cordova---------	85	0-13	Loam	CL	A-4, A-6	0	0	95-100	95-100	90-100	70-85	25-40	8-20
		13-33	Silty clay loam, clay loam	CL	A-7	0	0	90-100	90-100	85-95	65-90	40-50	20-30
		33-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1161:													
Barry----------	85	0-11	Loam	CL, SC	A-4, A-6	0	2-5	95-98	90-95	60-80	40-70	25-35	8-15
		11-33	Loam, sandy clay loam	CL	A-6	0	5-7	90-95	85-95	60-80	50-75	28-35	10-15
		33-60	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-2, A-4	0-2	0-5	85-100	80-95	50-85	25-50	20-30	5-10
1163:													
Suckercreek, frequently flooded--------	85	0-22	Loam	CL-ML, CL	A-4	0	0	100	100	85-95	50-85	15-30	5-10
		22-80	Loam, sandy loam, loamy fine sand	SM, SC	A-2, A-4	0	0	95-100	85-100	65-90	20-70	0-30	NP-10

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1165:													
Lundlake, depressional---	90	0-12	Silty clay loam	CL	A-6, A-7	0-1	0-3	95-99	90-95	65-90	50-80	37-43	16-21
		12-36	Loam, clay loam, silty clay loam	SC, CL	A-6	0-1	1-3	95-99	90-95	65-90	45-80	30-39	11-18
		36-72	Loam, sandy clay loam, sandy loam	SC, CL	A-4, A-6	0-1	3-5	90-95	85-95	60-85	45-60	28-36	9-15
		72-80	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-4	0-4	3-6	90-95	85-95	60-75	35-55	21-26	4-8
1173:													
Muskego, frequently flooded--------	45	0-9	Muck	PT	A-8	0	0	---	---	---	---	---	---
		9-36	Muck	PT	A-8	0	0	---	---	---	---	---	---
		36-60	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
Klossner, frequently flooded--------	45	0-26	Muck	PT	A-8	0	0	---	---	---	---	---	---
		26-33	Silt loam, silty clay loam	MH	A-7	0	0	100	95-100	90-100	85-95	60-90	10-30
		33-40	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	80-100	60-90	35-65	20-30
		40-80	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0-5	90-100	85-100	60-95	55-80	30-55	10-25
1186:													
Forestcity------	75	0-22	Fine sandy loam	SM, SC-SM	A-2, A-4	0-1	0-2	98-100	90-98	55-75	25-50	20-30	3-9
		22-43	Loam, sandy clay loam, clay loam	CL	A-6	0-4	2-5	95-98	90-95	75-90	50-75	30-40	10-15
		43-60	Loam, sandy clay loam, clay loam	SC, CL	A-4, A-6	0-4	3-6	95-98	85-95	60-90	35-70	20-40	5-15
		60-80	Fine sandy loam, sandy loam	SC, SC-SM	A-4	0-4	3-6	90-95	85-95	60-75	35-55	20-30	4-8

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1186:													
Lundlake, depressional---	20	0-20	Loam	CL	A-6	0-1	1-3	95-99	90-95	65-90	50-80	30-36	11-15
		20-46	Loam, clay loam, silty clay loam	SC, CL	A-6	0-1	1-3	95-99	90-95	65-90	45-80	30-39	11-18
		46-54	Loam, sandy clay loam, sandy loam	SC, CL	A-4, A-6	0-1	3-5	90-95	85-95	60-85	45-60	28-36	9-15
		54-60	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-4	0-4	3-6	90-95	85-95	60-75	35-55	21-26	4-8
1196B:													
Lida----------	60	0-6	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0-10	85-100	85-100	30-85	15-55	0-28	NP-9
		6-8	Loamy sand, loamy coarse sand, sandy loam	SP-SM, SM	A-2-4, A-4	0	0-10	85-100	85-100	30-85	10-55	0-25	NP-7
		8-17	Coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SC-SM, SC, SM	A-2-4, A-4	0	0-5	85-100	50-85	30-75	15-55	20-28	NP-9
		17-25	Loamy sand, gravelly loamy coarse sand, gravelly loamy sand	GP-GM, SP-SM, SP	A-1, A-2-4	0	0-5	50-85	50-85	20-65	4-25	---	NP
		25-80	Gravelly coarse sand, sand, gravelly sand	GP-GM, GP, GW, SP	A-1, A-2-4, A-3	0	0-5	50-85	50-85	20-60	2-10	---	NP
Two Inlets------	30	0-9	Loamy sand	SM	A-2-4	0	0-1	90-100	80-100	35-75	15-30	0-20	NP-4
		9-19	Gravelly loamy sand, loamy coarse sand, loamy sand	SM, SP-SM	A-2, A-2-4, A-3	0	0-5	80-100	50-90	30-65	5-30	0-25	NP-7
		19-80	Gravelly coarse sand, gravelly sand, sand	SP-SM, SP, SW	A-3, A-1	0	0-5	50-95	50-75	30-55	2-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1196C:													
Lida----------	55	0-6	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0-10	85-100	85-100	30-85	15-55	0-28	NP-9
		6-8	Loamy sand, loamy coarse sand, sandy loam	SP-SM, SM	A-2-4, A-4	0	0-10	85-100	85-100	30-85	10-55	0-25	NP-7
		8-17	Coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SC-SM, SC, SM	A-2-4, A-4	0	0-5	85-100	50-85	30-75	15-55	20-28	NP-9
		17-25	Loamy sand, gravelly loamy coarse sand, gravelly loamy sand	GP-GM, SP-SM, SP	A-1, A-2-4	0	0-5	50-85	50-85	20-65	4-25	---	NP
		25-80	Gravelly coarse sand, sand, gravelly sand	GP-GM, GP, GW, SP	A-1, A-2-4, A-3	0	0-5	50-85	50-85	20-60	2-10	---	NP
Two Inlets------	30	0-9	Loamy sand	SM	A-2-4	0	0-1	90-100	80-100	35-75	15-30	0-20	NP-4
		9-19	Gravelly loamy sand, loamy coarse sand, loamy sand	SM, SP-SM	A-2, A-2-4, A-3	0	0-5	80-100	50-90	30-65	5-30	0-25	NP-7
		19-80	Gravelly coarse sand, gravelly sand, sand	SP-SM, SP, SW	A-3, A-1	0	0-5	50-95	50-75	30-55	2-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1196E:													
Lida----------	50	0-6	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0-10	85-100	85-100	30-85	15-55	0-28	NP-9
		6-8	Loamy sand, loamy coarse sand, sandy loam	SP-SM, SM	A-2-4, A-4	0	0-10	85-100	85-100	30-85	10-55	0-25	NP-7
		8-17	Coarse sandy loam, gravelly sandy loam, gravelly coarse sandy loam	SC-SM, SC, SM	A-2-4, A-4	0	0-5	85-100	50-85	30-75	15-55	20-28	NP-9
		17-25	Loamy sand, gravelly loamy coarse sand, gravelly loamy sand	GP-GM, SP-SM, SP	A-1, A-2-4	0	0-5	50-85	50-85	20-65	4-25	---	NP
		25-80	Gravelly coarse sand, sand, gravelly sand	GP-GM, GP, GW, SP	A-1, A-2-4, A-3	0	0-5	50-85	50-85	20-60	2-10	---	NP
Two Inlets------	40	0-8	Loamy sand	SM	A-2-4	0	0-1	90-100	80-100	35-75	15-30	0-20	NP-4
		8-20	Gravelly loamy sand, loamy coarse sand, loamy sand	SM, SP-SM	A-2-4, A-3, A-2	0	0-5	80-100	50-90	30-65	5-30	0-25	NP-7
		20-80	Gravelly coarse sand, gravelly sand, sand	SP-SM, SP, SW	A-3, A-1	0	0-5	50-95	50-75	30-55	2-10	0-20	NP-4
1197:													
Suckercreek, occasionally flooded--------	80	0-12	Fine sandy loam	CL-ML, SM	A-4	0	0	100	100	85-95	45-85	15-25	NP-7
		12-80	Loam, fine sandy loam, loamy fine sand	SC, SM	A-2, A-4	0	0	95-100	85-100	65-90	20-70	0-30	NP-10

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1199:													
Klossner, ponded	45	0-26	Muck	PT	A-8	0	0	---	---	---	---	---	---
		26-33	Silt loam, silty clay loam	MH	A-7	0	0	100	95-100	90-100	85-95	60-90	10-30
		33-40	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	90-100	80-100	60-90	35-65	20-30
		40-80	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0-5	90-100	85-100	60-95	55-80	30-55	10-25
Lundlake, ponded	45	0-8	Mucky loam	CL	A-6	0-1	1-3	95-99	90-95	65-90	50-80	30-36	11-15
		8-26	Loam, clay loam, silty clay loam	CL	A-6	0-1	1-3	95-100	90-100	65-95	50-90	30-36	11-15
		26-80	Sandy loam, fine sandy loam, loam	SC, SC-SM	A-4	0-4	3-6	90-95	85-95	60-75	35-55	21-26	4-8
1203:													
Muskego, ponded	30	0-9	Muck	PT	A-8	0	0	---	---	---	---	---	---
		9-36	Muck	PT	A-8	0	0	---	---	---	---	---	---
		36-60	Coprogenous earth	OL	A-5	0	0	95-100	95-100	85-100	75-96	40-50	2-8
Blue Earth, ponded---------	30	0-50	Silt loam	OL	A-5	0	0	95-100	95-100	85-95	80-95	41-50	2-8
		50-60	Silty clay loam, clay loam, silt loam	OL	A-5	0	0	95-100	80-100	80-95	80-95	41-50	2-8
Houghton, ponded	30	0-80	Muck	PT	A-8	0	0	---	---	---	---	---	---
1204B:													
Reedslake-------	85	0-12	Loam	CL, CL-ML	A-6	0	0-2	95-100	90-98	80-95	60-75	25-40	5-15
		12-26	Clay loam, loam	CL	A-6, A-7	0	0-2	95-100	90-98	80-95	60-80	32-45	12-25
		26-48	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		48-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1207B:													
Reedslake-------	60	0-12	Loam	CL, CL-ML	A-6	0	0-2	95-100	90-98	80-95	60-75	25-40	5-15
		12-26	Clay loam, loam	CL	A-6, A-7	0	0-2	95-100	90-98	80-95	60-80	32-45	12-25
		26-48	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		48-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Le Sueur--------	25	0-14	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	70-85	20-40	5-15
		14-40	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	85-100	60-80	35-50	15-25
		40-55	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		55-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1213C:													
Cokato, eroded--	65	0-8	Loam	CL	A-6	0	0-2	95-100	90-98	80-95	60-70	32-36	13-15
		8-23	Clay loam, loam, sandy clay loam	CL	A-6, A-7	0	0-5	95-100	90-98	80-95	65-80	34-43	14-21
		23-48	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		48-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Storden---------	20	0-7	Loam	CL	A-6	0	0-5	95-100	95-98	75-95	60-75	28-36	9-15
		7-55	Loam, clay loam	CL	A-6	0	0-5	95-100	90-98	70-95	55-70	28-39	9-18
		55-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1213D:													
Cokato, eroded--	60	0-8	Loam	CL	A-6	0	0-2	95-100	90-98	80-95	60-70	32-36	13-15
		8-20	Clay loam, loam, sandy clay loam	CL	A-6, A-7	0	0-5	95-100	90-98	80-95	65-80	34-43	14-21
		20-40	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		40-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Storden---------	25	0-7	Loam	CL	A-6	0	0-5	95-100	95-98	75-95	60-75	28-36	9-15
		7-55	Loam, clay loam	CL	A-6	0	0-5	95-100	90-98	70-95	55-70	28-39	9-18
		55-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1220C:													
Cokato, eroded--	50	0-8	Loam	CL	A-6	0	0-2	95-100	90-98	80-95	60-70	32-36	13-15
		8-23	Clay loam, loam, sandy clay loam	CL	A-6, A-7	0	0-5	95-100	90-98	80-95	65-80	34-43	14-21
		23-48	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		48-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1220C:													
Storden---------	20	0-7	Loam	CL	A-6	0	0-5	95-100	95-98	75-95	60-75	28-36	9-15
		7-55	Loam, clay loam	CL	A-6	0	0-5	95-100	90-98	70-95	55-70	28-39	9-18
		55-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Hawick----------	15	0-10	Gravelly sandy loam	SP-SM, SP	A-1, A-2, A-3	0-2	0-5	75-95	60-95	35-70	4-35	0-14	NP-4
		10-60	Gravelly coarse sand, coarse sand, sand	SP, SP-SM	A-1, A-2, A-3	0-2	0-5	50-95	50-95	30-65	2-10	0-15	NP
1223:													
Sandberg, MAP >25--------	60	0-11	Loamy coarse sand	SP-SM, SM	A-1, A-2	0	0-1	85-100	80-95	40-75	10-25	0-20	NP-4
		11-35	Gravelly loamy coarse sand, gravelly coarse sand, loamy sand	SP-SM, SP	A-2, A-3, A-1	0-3	0-5	75-95	50-95	35-70	4-25	0-20	NP-4
		35-80	Gravelly coarse sand, coarse sand, sand	SP, SW, SP-SM	A-1, A-2, A-3	0-3	0-5	60-95	50-90	30-65	2-10	0-15	NP
Arvilla, MAP >25	30	0-14	Coarse sandy loam	SC, SC-SM, SM	A-2, A-4, A-6	0	0	95-100	90-100	50-80	20-45	15-30	NP-15
		14-17	Sandy loam, loam, coarse sandy loam	SC, SC-SM, SM	A-2, A-4, A-6	0	0	90-100	85-100	50-80	20-45	15-40	NP-15
		17-80	Gravelly coarse sand, coarse sand, very gravelly coarse sand	GP, GP-GM, SM, SP-SM	A-1, A-2, A-3	0	0	35-100	25-100	10-60	0-15	---	NP
1224:													
Hubbard---------	60	0-11	Loamy coarse sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-80	10-25	0-20	NP-4
		11-27	Sand, coarse sand, loamy sand	SP-SM	A-1, A-2-4, A-3	0	0	98-100	95-100	25-75	5-12	0-20	NP-4
		27-80	Sand, coarse sand	SP, SW	A-1, A-2, A-3	0	0	95-100	85-100	20-70	2-5	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1224:													
Verndale, acid substratum-----	30	0-10	Coarse sandy loam	SM	A-2, A-4	0	0	100	85-100	60-85	25-45	0-20	NP-6
		10-16	Coarse sandy loam, fine sandy loam, loam	SC-SM, SM	A-2-4, A-4	0	0	98-100	85-100	60-85	25-45	15-30	4-7
		16-45	Sand, coarse sand, loamy coarse sand	SM, SW	A-2-4, A-3	0	0	98-100	85-100	50-65	4-20	0-20	NP-4
		45-80	Sand, coarse sand	SP-SM, SW, SP	A-1-b, A-2-4, A-3	0	0	96-100	75-100	45-60	3-10	0-20	NP-4
1231:													
Hubbard---------	60	0-20	Loamy sand	SM, SP-SM	A-2	0	0	98-100	95-100	50-80	10-25	0-20	NP-4
		20-32	Sand, coarse sand, loamy sand	SP-SM	A-1, A-2-4, A-3	0	0	98-100	95-100	25-75	5-12	0-20	NP-4
		32-80	Sand, coarse sand	SP, SW	A-1, A-2, A-3	0	0	95-100	85-100	20-70	2-5	0-15	NP
Mosford---------	30	0-13	Sandy loam	SM	A-2-4, A-4	0	0	100	85-100	50-85	25-55	0-25	NP-6
		13-16	Sandy loam, coarse sandy loam, fine sandy loam	SM	A-4, A-2-4	0	0	100	85-100	55-85	25-55	0-25	NP-6
		16-35	Coarse sand, sand, loamy sand	SP, SP-SM	A-2-4, A-3	0	0	100	85-100	45-65	4-30	0-20	NP-4
		35-80	Coarse sand, sand, gravelly coarse sand	SP, SP-SM, SW	A-1, A-3	0	0	95-100	50-100	45-75	4-15	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1255:													
Elkriver, occasionally flooded--------	80	0-10	Fine sandy loam	ML, SM	A-4	0	0	100	85-100	50-95	30-65	0-25	NP-4
		10-26	Fine sandy loam, very fine sandy loam, loam	ML, SM	A-4	0	0	100	85-100	65-95	35-75	0-30	NP-6
		26-32	Very fine sandy loam, fine sandy loam, loam	ML, SM	A-4	0	0	100	85-100	65-95	35-75	0-30	NP-6
		32-80	Loamy fine sand, sand, gravelly sand	SP, SM, SP-SM	A-1-b, A-2-4, A-3	0	0	95-100	65-100	35-70	4-15	0-20	NP-4
1256:													
Cantlin---------	90	0-8	Loamy fine sand	SM	A-2	0	0	100	100	95-100	15-30	15-20	NP
		8-22	Fine sand, loamy fine sand	SM, SP-SM	A-2	0	0	100	100	95-100	12-25	15-20	NP
		22-80	Fine sand, sand	SM, SP, SP-SM	A-2, A-3	0	0	100	100	90-100	2-20	15-20	NP
1257:													
Elkriver, rarely flooded--------	55	0-10	Fine sandy loam	ML, SM	A-4	0	0	100	85-100	50-95	30-65	0-25	NP-4
		10-35	Fine sandy loam, very fine sandy loam, loam	ML, SM	A-4	0	0	100	85-100	65-95	35-75	0-30	NP-6
		35-39	Very fine sandy loam, fine sandy loam, loam	ML, SM	A-4	0	0	100	85-100	65-95	35-75	0-30	NP-6
		39-80	Fine sand, sand, gravelly sand	SM, SP-SM, SP	A-1-b, A-2-4, A-3	0	0	95-100	65-100	40-75	4-15	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1257:													
Mosford, rarely flooded--------	35	0-11	Fine sandy loam	SM	A-2-4, A-4	0	0	100	85-100	50-85	25-55	0-25	NP-6
		11-16	Sandy loam, coarse sandy loam, fine sandy loam	SM	A-4, A-2-4	0	0	100	85-100	55-85	25-55	0-25	NP-6
		16-25	Coarse sand, fine sand, loamy sand	SP, SP-SM	A-2-4, A-3	0	0	100	85-100	45-65	4-30	0-20	NP-4
		25-80	Coarse sand, sand, gravelly coarse sand	SP, SP-SM, SW	A-1, A-3	0	0	95-100	50-100	45-75	4-15	0-20	NP-4
1260B:													
Stonelake-------	55	0-8	Loamy coarse sand	SP-SM	A-1, A-2	0	0-5	85-100	80-95	40-70	10-25	0-20	NP-4
		8-30	Very gravelly coarse sand, very gravelly loamy coarse sand	GP, GW, SP, SW	A-1	0	0-10	20-60	15-45	5-25	0-5	0-25	NP-7
		30-80	Very gravelly coarse sand, gravelly sand, coarse sand	GP, GW, SP, SW	A-1	0	0-10	20-85	15-85	5-25	0-10	---	NP
Nebish, moderately wet	30	0-6	Fine sandy loam	SC-SM, SM	A-2-4, A-4	0	0-3	95-100	85-100	55-85	30-50	20-35	NP-7
		6-9	Loamy fine sand, fine sandy loam, sandy loam	SC-SM, SM	A-2-4, A-4	0	0-3	95-100	85-100	50-85	30-50	15-25	NP-6
		9-43	Loam, clay loam	CL, ML	A-6, A-7	0	0-3	95-100	85-100	70-95	55-80	30-50	10-20
		43-80	Loam, clay loam, sandy clay loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	85-100	70-95	50-80	20-40	5-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1260C:													
Stonelake-------	55	0-7	Loamy sand	SP-SM	A-1, A-2	0	0-5	85-100	80-95	40-70	10-25	0-20	NP-4
		7-20	Very gravelly coarse sand, gravelly coarse sand, loamy coarse sand	GW, SP-SM, SW	A-1	0	0-10	35-75	15-45	15-30	0-10	---	NP-4
		20-42	Very gravelly coarse sand, very gravelly loamy coarse sand	GP, GW, SP, SW	A-1	0	0-10	20-60	15-45	5-25	0-5	0-25	NP-7
		42-80	Very gravelly coarse sand, gravelly sand, coarse sand	GP, GW, SP, SP-SM	A-1	0	0-10	20-85	15-85	5-25	0-10	---	NP
Nebish----------	30	0-3	Fine sandy loam	SM, SC-SM	A-4, A-2-4	0	0-3	95-100	85-100	55-85	30-50	20-35	NP-7
		3-10	Loamy fine sand, fine sandy loam, sandy loam	SC-SM, SM	A-2-4, A-4	0	0-3	95-100	85-100	50-85	30-50	15-25	NP-6
		10-29	Loam, clay loam	CL, ML	A-6, A-7	0	0-3	95-100	85-100	70-95	55-80	30-50	10-20
		29-80	Loam, clay loam, sandy clay loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	85-100	70-95	50-80	20-40	5-20
1260E:													
Stonelake-------	60	0-5	Gravelly coarse sandy loam	SM, SP	A-1, A-2-4	0	0-10	55-90	55-70	10-60	0-35	15-20	NP-4
		5-11	Very gravelly coarse sand, gravelly coarse sand, gravelly loamy coarse sand	SP, SW, GW	A-1	0	0-10	35-75	15-45	15-30	0-10	---	NP-4
		11-20	Very gravelly coarse sand, very gravelly loamy coarse sand	GP, GW, SP, SW	A-1	0	0-10	20-60	15-45	5-25	0-5	0-25	NP-7
		20-80	Very gravelly coarse sand, gravelly sand, coarse sand	GP, GW, SP, SP-SM	A-1	0	0-10	20-85	15-85	5-25	0-10	---	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1260E:													
Nebish----------	25	0-5	Fine sandy loam	SC-SM, SM	A-2-4, A-4	0	0-3	95-100	85-100	55-85	30-50	20-35	NP-7
		5-9	Loamy fine sand, fine sandy loam, sandy loam	SC-SM, SM	A-2-4, A-4	0	0-3	95-100	85-100	50-85	30-50	15-25	NP-6
		9-27	Loam, clay loam	CL, ML	A-6, A-7	0	0-3	95-100	85-100	70-95	55-80	30-50	10-20
		27-80	Loam, clay loam, sandy clay loam	CL, CL-ML	A-4, A-6	0	0-3	95-100	85-100	70-95	50-80	20-40	5-20
1288:													
Seelyeville, ponded---------	45	0-15	Muck	PT	A-8	0	0	---	---	---	---	---	---
		15-80	Muck, mucky peat	PT	A-8	0	0	---	---	---	---	---	---
Markey, ponded--	45	0-27	Muck	PT	A-8	---	---	---	---	---	---	---	---
		27-32	Fine sand, loamy sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	0-20	NP-4
		32-80	Fine sand, sand, coarse sand	SM, SP, SP-SM	A-2, A-3	0	0	100	75-100	60-75	0-20	0-20	NP-4
1356.													
Water, miscellaneous													
1362B:													
Angus----------	85	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	50-85	30-40	11-15
		8-35	Clay loam, loam	CL	A-6	0-1	0-5	95-100	90-100	80-95	55-75	35-40	15-20
		35-40	Loam, clay loam	CL	A-6	0-1	0-5	95-100	90-100	75-90	50-75	32-39	13-18
		40-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1368:													
Southhaven------	90	0-48	Loam	CL-ML	A-4, A-6	0	0	95-100	95-100	85-100	60-90	25-35	5-15
		48-62	Sandy clay loam, loam, sandy loam	CL-ML	A-4, A-6	0	0	90-100	85-100	45-85	35-65	25-40	5-20
		62-66	Loamy coarse sand, loamy sand	SM	A-1, A-2, A-3	0	0	90-100	85-100	35-75	5-25	0-20	NP-4
		66-80	Sand, coarse sand	SW, SP	A-1-a, A-1-b	0	0	85-100	45-100	5-30	2-12	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1377B:													
Dorset----------	70	0-11	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	85-100	50-70	25-50	0-25	NP-5
		11-19	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		19-32	Gravelly loamy sand, gravelly coarse sand, coarse sand	GM, SC-SM, SM	A-1, A-2	0	0-5	50-90	50-75	20-50	10-25	0-20	NP-7
		32-80	Gravelly coarse sand, gravelly sand, coarse sand	GP-GM, GP, SP-SM, SP	A-1	0	0-5	50-90	50-75	15-40	0-10	0-20	NP-4
Two Inlets------	20	0-9	Loamy sand	SM	A-2-4	0	0-1	90-100	80-100	35-75	15-30	0-20	NP-4
		9-19	Gravelly loamy sand, loamy coarse sand, loamy sand	SM, SP-SM	A-2, A-2-4, A-3	0	0-5	80-100	50-90	30-65	5-30	0-25	NP-7
		19-80	Gravelly coarse sand, gravelly sand, sand	SP-SM, SP, SW	A-3, A-1	0	0-5	50-95	50-75	30-55	2-10	0-20	NP-4
1377C:													
Dorset----------	50	0-11	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	85-100	50-70	25-50	0-25	NP-5
		11-19	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		19-32	Gravelly loamy sand, gravelly coarse sand, coarse sand	GM, SC-SM, SM	A-1, A-2	0	0-5	50-90	50-75	20-50	10-25	0-20	NP-7
		32-80	Gravelly coarse sand, gravelly sand, coarse sand	GP-GM, GP, SP-SM, SP	A-1	0	0-5	50-90	50-75	15-40	0-10	0-20	NP-4
Two Inlets------	35	0-9	Loamy sand	SM	A-2-4	0	0-1	90-100	80-100	35-75	15-30	0-20	NP-4
		9-19	Gravelly loamy sand, loamy coarse sand, loamy sand	SM, SP-SM	A-2, A-2-4, A-3	0	0-5	80-100	50-90	30-65	5-30	0-25	NP-7
		19-80	Gravelly coarse sand, gravelly sand, sand	SP-SM, SP, SW	A-3, A-1	0	0-5	50-95	50-75	30-55	2-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1377D:													
Dorset----------	45	0-9	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	85-100	50-70	25-50	0-25	NP-5
		9-14	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		14-25	Gravelly loamy sand, gravelly coarse sand, coarse sand	GM, SC-SM, SM	A-1, A-2	0	0-5	50-90	50-75	20-50	10-25	0-20	NP-7
		25-80	Gravelly coarse sand, gravelly sand, coarse sand	GP-GM, GP, SP-SM, SP	A-1	0	0-5	50-90	50-75	15-40	0-10	0-20	NP-4
Two Inlets------	40	0-9	Loamy sand	SM	A-2-4	0	0-1	90-100	80-100	35-75	15-30	0-20	NP-4
		9-19	Gravelly loamy sand, loamy coarse sand, loamy sand	SM, SP-SM	A-2, A-2-4, A-3	0	0-5	80-100	50-90	30-65	5-30	0-25	NP-7
		19-80	Gravelly coarse sand, gravelly sand, sand	SP-SM, SP, SW	A-3, A-1	0	0-5	50-95	50-75	30-55	2-10	0-20	NP-4
1377E:													
Dorset----------	45	0-9	Sandy loam	SC-SM, SM	A-2, A-4	0	0	90-100	85-100	50-70	25-50	0-25	NP-5
		9-14	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		14-27	Gravelly loamy sand, gravelly coarse sand, loamy sand	GM, SC-SM, SM	A-1, A-2	0	0-5	50-90	50-75	20-50	10-25	0-20	NP-7
		27-80	Gravelly coarse sand, gravelly sand, coarse sand	GP-GM, GP, SP-SM, SP	A-1	0	0-5	50-90	50-75	15-40	0-10	0-20	NP-4
Two Inlets------	45	0-8	Loamy sand	SM	A-2-4	0	0-1	90-100	80-100	35-75	15-30	0-20	NP-4
		8-20	Gravelly loamy sand, loamy coarse sand, loamy sand	SM, SP-SM	A-2, A-2-4, A-3	0	0-5	80-100	50-90	30-65	5-30	0-25	NP-7
		20-80	Gravelly coarse sand, gravelly sand, sand	SP-SM, SP, SW	A-3, A-1	0	0-5	50-95	50-75	30-55	2-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1378:													
Fordum, occasionally flooded--------	85	0-9	Loam	CL, SC, SC-SM	A-4, A-6	0	0-5	80-100	75-100	55-100	45-85	20-35	5-15
		9-38	Silt loam, sandy loam, loam	ML, SM, SC, CL	A-1, A-2, A-4	0	0-5	80-100	75-100	45-100	20-90	15-30	3-10
		38-80	Stratified sand to silt loam	SP-SM, SP, SM, ML	A-1, A-2, A-4	0	0-5	80-100	75-100	35-100	4-50	0-30	NP-6
1379B:													
Dorset----------	65	0-9	Loam	SC-SM, SM	A-4	0	0	90-100	85-100	75-90	45-90	15-30	3-14
		9-21	Loam, sandy loam, coarse sandy loam	CL, CL-ML, SC, SC-SM	A-4, A-6	0	0	90-100	85-100	50-90	35-75	15-30	4-14
		21-26	Gravelly loamy sand, gravelly coarse sand, coarse sand	GM, SC-SM, SM	A-1, A-2	0	0-5	50-90	50-75	20-50	10-25	0-20	NP-7
		26-80	Gravelly coarse sand, gravelly sand, coarse sand	GP-GM, GP, SP-SM, SP	A-1	0	0-5	50-90	50-75	15-40	0-10	0-20	NP-4
Almora----------	25	0-10	Loam	CL-ML, SC-SM, SC	A-4	0	0	95-100	85-100	45-85	45-75	23-30	6-11
		10-14	Sandy loam, fine sandy loam, loam	CL-ML, SC-SM, SC	A-4	0	0	95-100	85-100	45-85	35-65	23-30	6-11
		14-36	Sandy clay loam, gravelly sandy clay loam, loam	CL, SC	A-4, A-6	0	0-5	95-100	60-98	40-80	40-75	34-39	9-18
		36-41	Gravelly loamy coarse sand, sand, loamy sand	SM, SC-SM, SP-SM	A-1-a, A-1-b, A-3	0	0-5	50-90	30-85	20-70	5-20	0-20	NP-6
		41-80	Gravelly coarse sand, sand, coarse sand	SP, SP-SM, SW	A-1-a, A-1-b	0	0-5	45-90	30-80	5-30	0-10	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1380A:													
Bygland, MAP >25	85	0-9	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	30-35	7-15
		9-23	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-70	20-45
		23-27	Silty clay loam, silt loam, silty clay	CL, CH	A-6, A-7	0	0	100	100	90-100	80-95	25-55	10-30
		27-80	Stratified silt loam to silty clay loam	CL, CH	A-6, A-7	0	0	100	100	90-100	80-95	25-55	10-30
1380B:													
Bygland, MAP >25	70	0-9	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	30-35	7-15
		9-23	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-70	20-45
		23-27	Silty clay loam, silt loam, silty clay	CL, CH	A-6, A-7	0	0	100	100	90-100	80-95	25-55	10-30
		27-80	Stratified silt loam to silty clay loam	CL, CH	A-6, A-7	0	0	100	100	90-100	80-95	25-55	10-30
1380C:													
Bygland, MAP >25	70	0-7	Silt loam	ML, CL	A-4, A-6	0	0	100	100	95-100	80-95	30-35	7-15
		7-20	Silty clay, clay, silty clay loam	CH, CL	A-7	0	0	100	100	95-100	85-100	45-70	20-45
		20-26	Silty clay loam, silt loam, silty clay	CL, CH	A-6, A-7	0	0	100	100	90-100	80-95	25-55	10-30
		26-80	Stratified silt loam to silty clay loam	CL, CH	A-6, A-7	0	0	100	100	90-100	80-95	25-55	10-30

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1381:													
Lindaas, morainic-------	80	0-16	Silt loam	CL	A-6	0	0	100	100	95-100	85-95	40-45	20-25
		16-32	Clay, silty clay	CH, CL	A-7	0	0	100	100	95-100	85-95	45-75	30-50
		32-80	Silt loam, silty clay loam	CL	A-6	0	0	100	100	95-100	85-95	40-55	20-35
1383A:													
Shorewood, moderately wet	95	0-17	Silty clay loam	CL, ML	A-6, A-7	0	0	100	100	90-100	85-100	35-50	12-20
		17-39	Silty clay, silty clay loam	CH, MH	A-7	0	0	100	100	90-100	85-100	55-75	20-45
		39-60	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1388B:													
Terril, moderately wet	85	0-27	Loam	CL	A-6	0	0-2	95-100	95-100	70-90	60-80	30-40	10-20
		27-40	Loam, clay loam	CL	A-6	0	0-3	95-100	90-100	70-90	60-80	30-40	5-20
		40-63	Clay loam, loam	CL, CL-ML	A-6	0	0-2	95-100	90-100	65-95	50-85	20-40	5-20
		63-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1406:													
Medo, ponded----	30	0-20	Muck	PT	A-8	---	---	---	---	---	---	---	---
		20-34	Loam, sandy clay loam, mucky loam, silt loam	CL, ML	A-6, A-7	0	0	85-100	75-100	55-95	45-85	35-50	7-22
		34-60	Sand, gravelly coarse sand, gravelly loamy coarse sand, fine sand	SP, SP-SM, SM	A-1, A-2, A-3, A-4	0-2	0-5	75-95	60-95	20-75	2-40	0-20	NP-4
Dassel, ponded--	30	0-23	Fine sandy loam	SM	A-4	0	0	100	95-100	70-85	40-50	0-30	NP-4
		23-31	Stratified loamy fine sand to fine sandy loam	SM	A-2, A-4	0	0	100	95-100	55-80	25-50	0-30	NP-4
		31-60	Stratified coarse sand to loamy sand	SM, SP-SM, SP	A-2	0	0	100	80-100	45-90	4-55	0-15	NP

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1406:													
Biscay, ponded--	30	0-24	Loam	CL, ML	A-6, A-7	0	0	95-100	95-100	70-90	50-75	35-50	10-25
		24-29	Loam, clay loam, sandy clay loam	CL, ML	A-6, A-7	0	0	95-100	90-100	70-90	50-75	30-50	10-20
		29-60	Stratified gravelly coarse sand to loamy sand	GP, GP-GM, SP, SP-SM	A-1	0	0-5	45-95	35-95	20-45	2-10	0-20	NP-4
1408B:													
Angus----------	45	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	50-85	30-40	11-15
		8-35	Clay loam, loam	CL	A-6	0-1	0-5	95-100	90-100	80-95	55-75	35-40	15-20
		35-40	Loam, clay loam	CL	A-6	0-1	0-5	95-100	90-100	75-90	50-75	32-39	13-18
		40-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Kilkenny--------	40	0-11	Clay loam	ML, CL	A-6, A-7	0	0	95-100	95-100	80-95	70-85	35-50	10-25
		11-35	Clay loam, clay, silty clay loam	CH, MH	A-7	0	0	95-100	90-100	80-95	65-80	50-70	25-35
		35-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1438B:													
Braham, moderately wet	85	0-8	Loamy fine sand	SM	A-2	0	0	100	90-100	55-70	20-35	0-20	NP-4
		8-24	Loamy fine sand, loamy sand, fine sand	SM, SP-SM	A-2	0	0	100	90-100	65-90	10-20	0-20	NP-4
		24-42	Sandy clay loam, fine sandy loam, clay loam	CL, ML, SC	A-6, A-7	0-1	0-3	95-100	85-95	80-95	45-70	28-43	5-21
		42-60	Sandy clay loam, loam, clay loam	SC, CL, ML	A-6, A-7	0-1	0-3	95-100	85-95	80-95	45-70	28-43	5-21
1443:													
Belleville------	85	0-11	Sandy loam	SM	A-4	0	0	100	95-100	60-90	35-50	0-25	NP-5
		11-27	Loamy sand, fine sand, sand	SC-SM, SM, SP-SM	A-1-b, A-2-4, A-3, A-4	0	0	90-100	80-100	40-85	5-45	0-25	NP-5
		27-48	Loam, clay loam, silty clay loam	CL	A-6	0-1	0-2	95-100	90-98	80-95	55-90	20-40	10-25
		48-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
		In				Pct	Pct					Pct	
1901B:													
Angus----------	60	0-8	Loam	CL	A-6	0	0-5	95-100	90-100	80-95	50-85	30-40	11-15
		8-35	Clay loam, loam	CL	A-6	0-1	0-5	95-100	90-100	80-95	55-75	35-40	15-20
		35-40	Loam, clay loam	CL	A-6	0-1	0-5	95-100	90-100	75-90	50-75	32-39	13-18
		40-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
Le Sueur--------	30	0-14	Loam	CL, CL-ML	A-4, A-6	0	0	95-100	95-100	90-100	70-85	20-40	5-15
		14-40	Clay loam, loam, silty clay loam	CL	A-6, A-7	0	0	95-100	95-100	85-100	60-80	35-50	15-25
		40-55	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
		55-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1931:													
Essexville------	75	0-15	Sandy loam	SC-SM, SM	A-4	0	0	100	95-100	60-90	35-50	0-25	NP-5
		15-30	Loamy fine sand, fine sand, sand	SP-SM, SM	A-1-b, A-2-4, A-3, A-4	0	0	90-100	80-100	40-85	5-45	0-25	NP-5
		30-80	Clay loam, loam	CL	A-6	0-1	0-2	95-100	90-98	75-90	50-75	30-40	12-20
1942:													
Forada, depressional---	85	0-10	Mucky loam	ML	A-4	0	0	95-100	85-100	70-90	50-70	25-35	NP-10
		10-21	Sandy loam, loam, fine sandy loam	SM, ML, CL-ML	A-2, A-4	0	0	95-100	85-100	55-85	30-60	15-30	NP-10
		21-60	Coarse sand, gravelly coarse sand, loamy sand	SM, SP-SM, SP	A-1, A-2, A-3	0	0	50-100	50-100	40-70	4-30	---	NP
1946:													
Fordum, frequently flooded--------	70	0-7	Fine sandy loam	SC-SM, CL-ML, SM	A-1, A-2, A-4	0	0-5	80-100	75-100	45-95	20-65	0-30	NP-7
		7-28	Silt loam, sandy loam, gravelly loam	CL, ML, SC, SM	A-1, A-2, A-4	0	0-5	30-100	25-100	20-100	10-90	15-30	3-10
		28-80	Sand, very gravelly loamy fine sand	GP, SM, SP	A-1, A-2, A-3	0	0-5	30-100	25-100	7-95	1-50	0-20	NP-4

Table 17.--Engineering Index Properties--Continued

Map symbol and component name	Pct. of map unit	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
		In				Pct	Pct					Pct	
1946:													
Winterfield, frequently flooded--------	20	0-8	Loamy fine sand	SC-SM, SM	A-2-4, A-4	0	0	100	95-100	50-90	15-45	0-25	NP-7
		8-20	Sand, coarse sand, loamy sand, loamy fine sand	SC-SM, SM, SP, SP-SM	A-2-4, A-3, A-4	0	0	100	95-100	50-90	2-45	0-25	NP-7
		20-80	Sand, gravelly sand, loamy fine sand	SM, SP, SP-SM	A-1-b, A-2-4, A-3	0	0	85-100	70-100	35-80	0-35	0-20	NP-4
1975:													
Oylen----------	90	0-10	Sandy loam	SC-SM, SM	A-2-4, A-4	0	0	100	85-100	60-85	25-45	15-20	3-6
		10-18	Loam, sandy loam	SC-SM, SC, CL-ML, CL	A-4	0	0	100	85-100	60-85	35-60	20-30	5-10
		18-38	Loamy sand, sand, coarse sand	SM, SP-SM	A-2-4, A-3	0	0	90-100	70-100	35-65	5-20	---	NP
		38-80	Sand, coarse sand, gravelly coarse sand	SP-SM, SP	A-1-b, A-2-4, A-3	0	0	90-100	60-100	35-55	3-10	---	NP
W. Water													

Table 18.--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	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
7A:													
Hubbard----------	95	0-20	4-10	1.45-1.60	6.00-20	0.08-0.12	0.0-2.9	2.0-4.0	.15	.15	5	2	134
		20-32	1-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
		32-80	0-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
7B:													
Hubbard----------	90	0-18	4-10	1.45-1.60	6.00-20	0.08-0.12	0.0-2.9	2.0-4.0	.15	.15	5	2	134
		18-23	1-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
		23-80	0-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
7C:													
Hubbard----------	80	0-12	4-10	1.45-1.60	6.00-20	0.08-0.12	0.0-2.9	2.0-4.0	.15	.15	5	2	134
		12-33	1-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
		33-80	0-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
8B:													
Sparta----------	95	0-16	3-10	1.20-1.40	2.00-6.00	0.09-0.12	0.0-2.9	1.0-2.0	.17	.17	5	2	134
		16-29	1-8	1.40-1.60	6.00-20	0.05-0.11	0.0-2.9	0.1-1.0	.15	.15			
		29-60	0-5	1.50-1.70	6.00-20	0.04-0.07	0.0-2.9	0.0-0.5	.15	.15			
35:													
Blue Earth, depressional---------	80	0-10	18-32	0.20-0.80	0.57-1.98	0.18-0.24	3.0-5.9	10-25	.28	.28	5	6	48
		10-68	18-32	0.20-0.80	0.57-1.98	0.18-0.24	0.0-2.9	10-20	.28	.28			
		68-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
74B:													
Dickinson----------	95	0-18	10-18	1.50-1.55	2.00-6.00	0.12-0.15	0.0-2.9	1.0-2.0	.20	.20	4	3	86
		18-30	10-15	1.45-1.55	2.00-6.00	0.12-0.15	0.0-2.9	0.5-1.0	.20	.20			
		30-36	4-10	1.60-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.15	.15			
		36-60	4-10	1.60-1.70	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.15	.15			
86:													
Canisteo----------	80	0-18	27-35	1.25-1.35	0.57-1.98	0.18-0.22	3.0-5.9	4.0-7.0	.24	.24	5	4L	86
		18-39	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.5-1.0	.32	.32			
		39-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
106C2:													
Lester, eroded--------	70	0-7	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		7-38	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		38-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
106D2:													
Lester, eroded--------	80	0-7	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		7-38	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		38-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
106E:													
Lester----------	80	0-5	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	4.0-8.0	.28	.28	5	6	48
		5-34	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		34-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
109:													
Cordova----------	90	0-18	27-30	1.25-1.45	0.20-0.60	0.18-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
		18-38	28-35	1.35-1.50	0.20-0.60	0.15-0.19	3.0-5.9	1.0-4.0	.28	.28			
		38-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
114:													
Glencoe, depressional	90	0-10	27-35	1.35-1.45	0.14-1.98	0.18-0.22	3.0-5.9	5.0-10	.28	.28	5	6	48
		10-35	25-35	1.35-1.45	0.14-1.98	0.18-0.22	3.0-5.9	2.0-5.0	.28	.28			
		35-48	25-35	1.35-1.50	0.14-1.98	0.15-0.19	3.0-5.9	0.5-2.0	.28	.28			
		48-60	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
138:													
Lerdal----------	80	0-7	27-32	1.15-1.25	0.14-1.98	0.18-0.22	3.0-5.9	2.0-4.0	.37	.37	5	7	38
		7-9	27-32	1.15-1.25	0.14-1.98	0.18-0.22	3.0-5.9	0.2-1.5	.37	.37			
		9-47	35-55	1.25-1.35	0.0000-0.14	0.13-0.19	6.0-8.9	0.2-0.8	.32	.32			
		47-60	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
158A:													
Zimmerman----------	90	0-7	2-6	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-2.0	.17	.17	5	1	220
		7-80	1-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.15	.15			
158B:													
Zimmerman----------	90	0-7	2-6	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-2.0	.17	.17	5	1	220
		7-80	1-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.15	.15			
158C:													
Zimmerman----------	90	0-7	2-6	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-2.0	.17	.17	5	1	220
		7-80	1-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.15	.15			
158E:													
Zimmerman----------	85	0-3	2-6	1.45-1.65	6.00-20	0.07-0.09	0.0-2.9	0.5-2.0	.17	.17	5	1	220
		3-80	1-10	1.50-1.70	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.15	.15			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
169C:													
Braham----------	90	0-8	2-8	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		8-28	2-8	1.45-1.60	6.00-20	0.08-0.10	0.0-2.9	0.0-0.5	.17	.17			
		28-48	18-30	1.50-1.70	0.20-2.00	0.15-0.18	3.0-5.9	0.0-0.5	.37	.37			
		48-80	16-30	1.55-1.75	0.60-2.00	0.15-0.18	3.0-5.9	0.0-0.5	.37	.37			
181:													
Litchfield----------	95	0-20	5-10	1.30-1.50	6.00-20	0.10-0.12	0.0-2.9	1.5-3.0	.17	.17	4	2	134
		20-33	5-10	1.40-1.65	2.00-6.00	0.07-0.16	0.0-2.9	0.5-1.0	.17	.17			
		33-40	10-20	1.15-1.30	0.60-2.00	0.22-0.24	0.0-2.9	0.2-0.8	.32	.32			
		40-80	1-8	1.45-1.65	6.00-20	0.08-0.10	0.0-2.9	0.1-0.5	.17	.17			
229:													
Waldorf----------	90	0-20	35-40	1.20-1.30	0.20-0.60	0.18-0.25	6.0-8.9	6.0-8.0	.28	.28	5	4	86
		20-53	35-55	1.25-1.35	0.06-0.60	0.13-0.16	6.0-8.9	0.5-1.0	.32	.32			
		53-80	24-45	1.25-1.45	0.06-0.60	0.20-0.22	3.0-5.9	0.0-0.5	.32	.32			
231C:													
Lester----------	80	0-9	8-15	1.35-1.45	2.00-6.00	0.12-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
		9-53	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		53-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
231D:													
Lester----------	80	0-6	8-15	1.35-1.45	2.00-6.00	0.12-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
		6-34	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		34-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
235:													
Nessel----------	85	0-6	10-25	1.35-1.55	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		6-38	18-30	1.50-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-0.5	.32	.32			
		38-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
239:													
Le Sueur----------	80	0-17	28-30	1.50-1.70	0.60-2.00	0.17-0.20	3.0-5.9	3.0-7.0	.24	.24	5	6	48
		17-37	24-35	1.30-1.45	0.60-2.00	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
		37-46	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		46-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
247:													
Linder----------	90	0-13	14-20	1.40-1.45	0.57-1.98	0.20-0.22	0.0-2.9	3.0-4.0	.24	.24	4	5	56
		13-24	10-18	1.45-1.55	1.98-5.95	0.15-0.17	0.0-2.9	0.0-0.5	.24	.24			
		24-60	2-8	1.55-1.75	20-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.20			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
255:													
Mayer----------	85	0-18	18-30	1.25-1.35	0.60-2.00	0.20-0.22	0.0-2.9	4.0-8.0	.24	.24	4	4L	86
		18-33	18-30	1.25-1.35	0.60-2.00	0.16-0.19	0.0-2.9	0.5-1.0	.28	.28			
		33-80	1-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.15	.15			
256:													
Mazaska----------	90	0-15	27-40	1.15-1.30	0.20-0.60	0.17-0.22	6.0-8.9	4.0-7.0	.28	.28	5	7	38
		15-42	35-50	1.25-1.40	0.06-0.20	0.10-0.16	6.0-8.9	0.5-2.0	.28	.28			
		42-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
258B:													
Sandberg----------	95	0-12	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	5	2	134
		12-19	0-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.5-1.0	.05	.10			
		19-80	0-5	1.50-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.05	.10			
258C:													
Sandberg----------	90	0-12	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	5	2	134
		12-19	0-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.5-1.0	.05	.10			
		19-80	0-5	1.50-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.05	.10			
258E:													
Sandberg----------	85	0-12	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	5	2	134
		12-19	0-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.5-1.0	.05	.10			
		19-80	0-5	1.50-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.05	.10			
260:													
Duelm----------	90	0-16	2-10	1.40-1.60	6.00-20	0.08-0.12	0.0-2.9	2.0-6.0	.17	.17	5	2	134
		16-30	1-8	1.55-1.65	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.15	.15			
		30-80	0-6	1.55-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
261:													
Isan, depressional----	90	0-14	5-14	1.30-1.55	2.00-6.00	0.10-0.15	0.0-2.9	3.0-10	.20	.20	3	3	86
		14-34	2-8	1.50-1.65	6.00-20	0.06-0.10	0.0-2.9	0.5-3.0	.17	.17			
		34-80	1-5	1.55-1.70	6.00-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.15			
286B:													
Shorewood----------	95	0-17	30-40	1.20-1.40	0.14-0.57	0.18-0.22	3.0-5.9	4.0-8.0	.28	.28	5	4	86
		17-39	36-55	1.20-1.35	0.0000-0.57	0.13-0.16	6.0-8.9	1.0-4.0	.32	.32			
		39-60	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
294A:													
Rasset----------	90	0-15	6-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	4	3	86
		15-28	10-18	1.40-1.60	2.00-6.00	0.12-0.19	0.0-2.9	1.0-2.0	.20	.20			
		28-36	2-10	1.45-1.65	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		36-80	1-5	1.50-1.70	6.00-40	0.02-0.07	0.0-2.9	0.0-0.5	.10	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
323:													
Shields----------	95	0-8	27-40	1.15-1.25	0.60-2.00	0.18-0.22	3.0-5.9	2.0-4.0	.37	.37	5	7	38
		8-41	40-60	1.25-1.35	0.06-0.20	0.10-0.16	6.0-8.9	0.5-2.0	.37	.37			
		41-80	27-50	1.35-1.45	0.20-2.00	0.11-0.19	6.0-8.9	0.0-0.5	.37	.37			
327A:													
Dickman----------	85	0-12	6-18	1.30-1.40	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		12-19	6-18	1.35-1.50	2.00-6.00	0.12-0.14	0.0-2.9	0.0-1.0	.20	.20			
		19-33	1-8	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
		33-80	1-6	1.50-1.60	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
327B:													
Dickman----------	85	0-12	6-18	1.30-1.40	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		12-19	6-18	1.35-1.50	2.00-6.00	0.12-0.14	0.0-2.9	0.0-1.0	.20	.20			
		19-33	1-8	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
		33-80	1-6	1.50-1.60	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
375:													
Forada----------	85	0-16	10-22	1.20-1.40	0.60-2.00	0.20-0.22	0.0-2.9	5.0-9.0	.24	.24	4	5	56
		16-28	8-18	1.30-1.50	0.60-6.00	0.12-0.19	0.0-2.9	0.5-1.0	.28	.28			
		28-60	0-5	1.50-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.15	.17			
392:													
Biscay----------	90	0-20	18-30	1.20-1.30	0.60-2.00	0.20-0.22	3.0-5.9	4.0-8.0	.28	.28	4	6	48
		20-28	18-30	1.25-1.35	0.60-2.00	0.17-0.19	3.0-5.9	0.5-1.0	.28	.28			
		28-36	10-28	1.35-1.55	2.00-6.00	0.11-0.17	0.0-2.9	0.5-1.0	.28	.32			
		36-60	1-6	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
406:													
Dorset----------	90	0-11	4-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	3.0-5.0	.20	.20	3	3	86
		11-19	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.5-2.0	.28	.28			
		19-32	5-10	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.10	.17			
		32-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
414:													
Hamel----------	90	0-24	20-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	5.0-7.0	.28	.28	5	6	48
		24-46	24-35	1.45-1.60	0.20-0.60	0.16-0.19	3.0-5.9	1.0-4.0	.28	.28			
		46-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
441:													
Almora----------	90	0-10	12-20	1.30-1.55	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.24	.24	4	5	56
		10-14	12-20	1.30-1.55	0.60-2.00	0.12-0.19	0.0-2.9	1.0-2.0	.28	.28			
		14-36	16-22	1.30-1.55	0.60-2.00	0.14-0.19	2.0-5.9	0.5-1.0	.32	.32			
		36-41	3-12	1.55-1.65	6.00-20	0.02-0.11	0.0-2.9	0.0-0.5	.10	.15			
		41-80	1-4	1.55-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.10	.15			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
461B:													
Koronis----------	85	0-8	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-4.0	.28	.28	5	5	56
		8-31	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.2-1.0	.28	.28			
		31-80	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.1-0.5	.28	.28			
461C2:													
Koronis, eroded-------	80	0-8	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	5	5	56
		8-31	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.2-1.0	.28	.28			
		31-80	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.1-0.5	.28	.28			
461E:													
Koronis----------	80	0-7	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-4.0	.28	.28	5	5	56
		7-28	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.2-1.0	.28	.28			
		28-80	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.1-0.5	.28	.28			
511:													
Marcellon, MAP <30----	85	0-13	13-20	1.25-1.35	0.60-2.00	0.17-0.24	0.0-2.9	3.0-7.0	.24	.24	5	5	56
		13-32	20-27	1.45-1.55	0.60-2.00	0.12-0.18	3.0-5.9	0.0-1.0	.32	.32			
		32-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.1-0.5	.28	.28			
523:													
Houghton, drained-----	80	0-10	---	0.15-0.25	0.20-6.00	0.35-0.45	---	70-99	---	---	3	2	134
		10-80	---	0.15-0.25	0.20-6.00	0.35-0.45	---	70-99	---	---			
525:													
Muskego, surface drained----------	75	0-9	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---	1	2	134
		9-36	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---			
		36-60	18-35	0.30-1.10	0.06-0.20	0.18-0.24	3.0-5.9	6.0-20	.28	.28			
539:													
Klossner, drained-----	80	0-26	---	0.25-0.55	0.20-6.00	0.35-0.48	---	25-60	---	---	2	2	134
		26-36	22-35	1.10-1.25	0.60-2.00	0.22-0.26	3.0-5.9	10-20	.37	.37			
		36-48	22-35	1.30-1.40	0.20-2.00	0.18-0.22	3.0-5.9	5.0-10	.28	.28			
		48-80	15-32	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.0-5.0	.28	.28			
540:													
Seelyeville, surface drained----------	80	0-10	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	2	134
		10-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
543:													
Markey, surface drained----------	80	0-36	---	0.15-0.45	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		36-42	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	1.0-4.0	.15	.15			
		42-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
548:													
Medo, drained---------	80	0-27	---	0.25-0.45	0.20-6.00	0.35-0.45	---	55-85	---	---	2	2	134
		27-35	15-30	1.15-1.65	0.60-6.00	0.13-0.20	3.0-5.9	5.0-20	.24	.24			
		35-39	15-30	1.15-1.65	0.60-6.00	0.13-0.20	3.0-5.9	0.5-2.0	.24	.24			
		39-80	0-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-0.5	.10	.10			
603:													
Hanlon, occasionally flooded----------	80	0-40	12-18	1.45-1.55	2.00-6.00	0.16-0.18	0.0-2.9	2.0-3.0	.20	.20	5	3	86
		40-63	12-18	1.45-1.55	2.00-6.00	0.16-0.18	0.0-2.9	1.0-2.0	.20	.20			
		63-70	5-10	1.55-1.70	2.00-6.00	0.11-0.13	0.0-2.9	1.0-2.0	.20	.20			
		70-80	2-18	1.55-1.70	2.00-6.00	0.12-0.19	0.0-2.9	0.0-1.0	.24	.24			
611D:													
Hawick----------	85	0-10	2-12	1.50-1.65	2.00-20	0.03-0.13	0.0-2.9	1.0-3.0	.10	.15	3	8	0
		10-60	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
708:													
Rushlake----------	85	0-9	1-5	1.50-1.70	5.95-20	0.04-0.07	0.0-2.9	0.5-4.0	.15	.15	5	1	160
		9-80	1-10	1.50-1.70	5.95-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.10			
740:													
Hamel----------	70	0-24	20-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	5.0-7.0	.28	.28	5	6	48
		24-46	24-35	1.45-1.60	0.20-0.60	0.16-0.19	3.0-5.9	1.0-4.0	.28	.28			
		46-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Glencoe, depressional	20	0-10	27-35	1.35-1.45	0.14-1.98	0.18-0.22	3.0-5.9	5.0-10	.28	.28	5	6	48
		10-35	25-35	1.35-1.45	0.14-1.98	0.18-0.22	3.0-5.9	2.0-5.0	.28	.28			
		35-48	25-35	1.35-1.50	0.14-1.98	0.15-0.19	3.0-5.9	0.5-2.0	.28	.28			
		48-60	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
768:													
Mosford----------	85	0-13	7-18	1.50-1.70	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		13-16	7-18	1.50-1.70	2.00-6.00	0.12-0.17	0.0-2.9	0.5-2.0	.24	.24			
		16-35	2-6	1.45-1.60	6.00-20	0.03-0.11	0.0-2.9	0.0-0.5	.15	.15			
		35-80	2-4	1.45-1.60	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.05	.10			
771:													
Elkriver, rarely flooded----------	85	0-10	5-18	1.45-1.55	0.60-6.00	0.16-0.20	0.0-2.9	1.5-3.0	.20	.20	4	3	86
		10-35	5-18	1.45-1.55	0.60-6.00	0.15-0.20	0.0-2.9	1.5-3.0	.20	.20			
		35-39	5-18	1.45-1.55	0.60-6.00	0.15-0.19	0.0-2.9	0.5-2.0	.15	.15			
		39-80	1-10	1.60-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.10	.15			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
783C2:													
Lester, eroded--------	50	0-7	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		7-38	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		38-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Kilkenny, eroded------	30	0-9	27-30	1.15-1.25	0.20-0.60	0.17-0.19	3.0-5.9	1.0-3.0	.28	.28	5	6	48
		9-53	35-45	1.25-1.35	0.20-0.60	0.15-0.19	3.0-5.9	0.2-1.0	.28	.28			
		53-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
792:													
Fordum, frequently flooded----------	90	0-7	5-12	1.35-1.50	0.60-6.00	0.11-0.18	0.0-2.9	6.0-15	.20	.20	4	3	86
		7-28	1-6	1.40-1.50	0.60-6.00	0.10-0.22	0.0-2.9	1.0-10	.37	.37			
		28-80	1-5	1.55-1.70	6.00-20	0.04-0.10	0.0-2.9	0.5-2.0	.15	.15			
799:													
Seelyeville, frequently flooded---	45	0-12	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	2	134
		12-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Bowstring, frequently flooded----------	45	0-38	0-5	0.15-0.30	0.14-5.95	0.35-0.45	---	40-90	---	---	3	2	134
		38-47	1-12	1.40-1.60	0.57-20	0.08-0.14	0.0-2.9	2.0-10	---	---			
		47-80	0-5	0.15-0.30	0.14-5.95	0.35-0.45	---	40-90	---	---			
804B:													
Koronis----------	50	0-8	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-4.0	.24	.24	5	3	86
		8-25	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.28	.28			
		25-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Sunburg----------	20	0-7	12-20	1.35-1.55	2.00-6.00	0.16-0.18	0.0-2.9	1.0-4.0	.24	.24	5	3	86
		7-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Hawick----------	15	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
804C2:													
Koronis, eroded-------	45	0-8	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-3.0	.24	.24	5	3	86
		8-25	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.28	.28			
		25-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
804C2:													
Sunburg----------	25	0-7	12-20	1.35-1.55	2.00-6.00	0.16-0.18	0.0-2.9	1.0-4.0	.24	.24	5	3	86
		7-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Hawick----------	15	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
804D2:													
Koronis, eroded-------	40	0-8	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-3.0	.24	.24	5	3	86
		8-25	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.28	.28			
		25-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Sunburg----------	30	0-7	12-20	1.35-1.55	2.00-6.00	0.16-0.18	0.0-2.9	1.0-4.0	.24	.24	5	3	86
		7-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Hawick----------	15	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
804E:													
Koronis----------	50	0-5	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-5.0	.24	.24	5	3	86
		5-21	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.28	.28			
		21-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Sunburg----------	20	0-4	12-20	1.35-1.55	2.00-6.00	0.16-0.18	0.0-2.9	1.0-4.0	.24	.24	5	3	86
		4-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Hawick----------	15	0-11	2-10	1.50-1.65	2.00-20	0.03-0.13	0.0-2.9	1.0-3.0	.10	.15	5	8	0
		11-16	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		16-60	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
807D2:													
Koronis, eroded-------	65	0-8	10-20	1.20-1.40	2.00-6.00	0.20-0.22	0.0-2.9	1.0-3.0	.24	.24	5	3	86
		8-25	18-24	1.30-1.50	0.60-6.00	0.15-0.19	0.0-2.9	0.0-2.0	.28	.28			
		25-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
Sunburg----------	20	0-7	12-20	1.35-1.55	2.00-6.00	0.16-0.18	0.0-2.9	1.0-4.0	.24	.24	5	3	86
		7-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.0-1.0	.28	.28			
875B:													
Estherville----------	60	0-13	5-15	1.25-1.35	1.98-5.95	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		13-18	10-18	1.35-1.60	1.98-5.95	0.13-0.18	0.0-2.9	0.0-0.5	.20	.20			
		18-23	0-8	1.50-1.65	5.95-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
		23-60	0-8	1.50-1.65	5.95-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea- bility	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi- bility group	Wind erodi- bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
875B:													
Hawick----------	30	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
875C:													
Hawick----------	60	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
Estherville----------	25	0-13	5-15	1.25-1.35	1.98-5.95	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		13-18	10-18	1.35-1.60	1.98-5.95	0.13-0.18	0.0-2.9	0.0-0.5	.20	.20			
		18-23	0-8	1.50-1.65	5.95-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
		23-60	0-8	1.50-1.65	5.95-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.10			
896B:													
Kingsley----------	70	0-6	3-10	1.40-1.60	0.60-2.00	0.10-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		6-18	3-10	1.45-1.65	0.60-2.00	0.10-0.15	0.0-2.9	0.0-0.5	.20	.20			
		18-45	6-18	1.60-1.70	0.20-0.60	0.13-0.16	0.0-2.9	0.0-0.5	.20	.20			
		45-80	5-10	1.60-1.70	0.20-0.60	0.11-0.14	0.0-2.9	0.0-0.5	.28	.28			
Gotham----------	25	0-9	2-4	1.35-1.55	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		9-18	2-8	1.40-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		18-40	2-8	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.17	.17			
		40-80	1-3	1.50-1.70	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.17	.17			
896C:													
Kingsley----------	70	0-6	3-10	1.40-1.60	0.60-2.00	0.10-0.18	0.0-2.9	2.0-4.0	.20	.20	5	3	86
		6-18	3-10	1.45-1.65	0.60-2.00	0.10-0.15	0.0-2.9	0.0-0.5	.20	.20			
		18-45	6-18	1.60-1.70	0.20-0.60	0.13-0.16	0.0-2.9	0.0-0.5	.20	.20			
		45-80	5-10	1.60-1.70	0.20-0.60	0.11-0.14	0.0-2.9	0.0-0.5	.28	.28			
Gotham----------	25	0-9	2-4	1.35-1.55	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		9-18	2-8	1.40-1.60	6.00-20	0.06-0.11	0.0-2.9	0.5-1.0	.17	.17			
		18-40	2-8	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.17	.17			
		40-80	1-3	1.50-1.70	6.00-20	0.05-0.10	0.0-2.9	0.0-0.5	.17	.17			
945C2:													
Lester, eroded--------	50	0-7	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		7-38	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		38-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Storden, eroded-------	30	0-7	18-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	5	4L	86
		7-55	18-30	1.35-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37			
		55-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
945D2:													
Lester, eroded--------	60	0-7	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		7-38	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		38-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Storden, eroded-------	20	0-7	18-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	5	4L	86
		7-55	18-30	1.35-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37			
		55-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
956:													
Canisteo----------	65	0-18	27-35	1.25-1.35	0.57-1.98	0.18-0.22	3.0-5.9	4.0-7.0	.24	.24	5	4L	86
		18-39	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.5-1.0	.32	.32			
		39-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Glencoe, depressional	25	0-10	27-35	1.35-1.45	0.14-1.98	0.18-0.22	3.0-5.9	5.0-10	.28	.28	5	6	48
		10-35	25-35	1.35-1.45	0.14-1.98	0.18-0.22	3.0-5.9	2.0-5.0	.28	.28			
		35-48	25-35	1.35-1.50	0.14-1.98	0.15-0.19	3.0-5.9	0.5-2.0	.28	.28			
		48-60	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
978:													
Cordova----------	60	0-18	27-30	1.25-1.45	0.20-0.60	0.18-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
		18-38	28-35	1.35-1.50	0.20-0.60	0.15-0.19	3.0-5.9	1.0-4.0	.28	.28			
		38-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Rolfe, depressional---	30	0-12	22-27	1.35-1.40	0.60-2.00	0.22-0.24	0.0-2.9	3.0-5.0	.37	.37	5	6	48
		12-20	22-27	1.40-1.50	0.60-2.00	0.22-0.24	0.0-2.9	1.0-2.0	.28	.28			
		20-35	39-45	1.50-1.60	0.06-0.20	0.11-0.13	6.0-8.9	1.0-2.0	.28	.28			
		35-51	25-35	1.50-1.60	0.20-2.00	0.14-0.16	3.0-5.9	0.0-1.0	.28	.28			
		51-60	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1000:													
Arvilla, MAP >25------	90	0-14	6-18	1.40-1.60	1.98-5.95	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		14-20	6-18	1.40-1.60	1.98-5.95	0.11-0.14	0.0-2.9	1.0-2.0	.20	.20			
		20-80	2-10	1.40-1.60	5.95-20	0.02-0.05	0.0-2.9	0.0-0.5	.10	.20			
1015.													
Udipsamments (cut and fill land)													
1016.													
Udorthents, loamy													

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1023C:													
Lester, eroded--------	50	0-7	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		7-38	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		38-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Malardi----------	35	0-10	5-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-15	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.0-1.0	.20	.20			
		15-29	1-8	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.05	.10			
		29-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1023D:													
Lester, eroded--------	45	0-7	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	1.0-3.0	.28	.28	5	6	48
		7-38	24-32	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		38-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		60-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Malardi----------	40	0-9	5-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		9-14	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.0-1.0	.20	.20			
		14-21	1-8	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.05	.10			
		21-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1026B:													
Lizzie, moderately wet	90	0-12	18-22	1.20-1.40	0.60-2.00	0.20-0.24	3.0-5.9	2.0-5.0	.28	.28	5	5	56
		12-36	18-35	1.20-1.40	0.60-2.00	0.15-0.22	3.0-5.9	0.0-0.5	.37	.37			
		36-40	8-20	1.20-1.40	0.60-2.00	0.15-0.22	0.0-2.9	0.0-0.5	.32	.32			
		40-80	3-16	1.30-1.65	0.60-6.00	0.08-0.22	0.0-2.9	0.0-0.5	.32	.32			
1027.													
Udorthents, wet substratum													
1030:													
Pits, gravel.													
Udipsamments.													
1035B:													
Crowfork----------	90	0-11	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		11-20	2-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		20-76	2-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		76-80	0-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1035C:													
Crowfork----------	90	0-11	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		11-20	2-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		20-76	2-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		76-80	0-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
1035D:													
Crowfork----------	85	0-11	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		11-20	2-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		20-76	2-10	1.50-1.70	6.00-20	0.06-0.11	0.0-2.9	0.0-0.5	.17	.17			
		76-80	0-5	1.50-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.15	.15			
1036B:													
Angus----------	85	0-9	8-15	1.35-1.45	2.00-6.00	0.12-0.15	0.0-2.9	1.0-3.0	.24	.24	5	3	86
		9-46	24-35	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		46-58	24-35	1.55-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.37	.37			
		58-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1037:													
Eckvoll, MAP >25------	90	0-9	5-9	1.30-1.70	5.95-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		9-24	2-9	1.30-1.70	5.95-20	0.06-0.08	0.0-2.9	0.5-1.0	.15	.15			
		24-45	18-35	1.40-1.70	0.14-1.98	0.16-0.18	3.0-5.9	0.0-0.5	.37	.37			
		45-80	16-32	1.30-1.70	0.14-1.98	0.17-0.19	3.0-5.9	0.0-0.5	.37	.37			
1038A:													
Verndale, acid substratum----------	90	0-10	7-12	1.50-1.70	2.00-6.00	0.13-0.17	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-19	7-18	1.60-1.70	0.60-2.00	0.14-0.18	0.0-2.9	0.5-1.0	.24	.24			
		19-28	2-6	1.45-1.60	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.10			
		28-80	0-4	1.45-1.60	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.10			
1038B:													
Verndale, acid substratum----------	85	0-10	7-12	1.50-1.70	2.00-6.00	0.13-0.17	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-19	7-18	1.60-1.70	0.60-2.00	0.14-0.18	0.0-2.9	0.5-1.0	.24	.24			
		19-28	2-6	1.45-1.60	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.10			
		28-80	0-4	1.45-1.60	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.10			
1066B:													
Malardi----------	65	0-10	5-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-15	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.0-1.0	.20	.20			
		15-29	1-8	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.05	.10			
		29-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1066B:													
Hawick----------	25	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
1066C:													
Malardi----------	60	0-10	5-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-15	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.0-1.0	.20	.20			
		15-29	1-8	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.05	.10			
		29-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Hawick----------	25	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
1066E:													
Malardi----------	55	0-9	5-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	4.0-8.0	.20	.20	3	3	86
		9-14	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.0-1.0	.20	.20			
		14-21	1-8	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.05	.10			
		21-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
Hawick----------	30	0-7	5-15	1.35-1.55	2.00-6.00	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		7-11	1-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-1.0	.10	.15			
		11-80	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
1072.													
Udorthents, shallow													
1075:													
Klossner, ponded------	40	0-26	---	0.25-0.55	0.20-6.00	0.35-0.48	---	25-60	---	---	2	8	0
		26-33	22-35	1.10-1.25	0.60-2.00	0.22-0.26	3.0-5.9	10-20	.37	.37			
		33-40	22-35	1.30-1.40	0.20-2.00	0.18-0.22	3.0-5.9	5.0-10	.28	.28			
		40-80	15-32	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.0-5.0	.28	.28			
Muskego, ponded-------	40	0-9	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---	1	8	0
		9-36	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---			
		36-60	18-35	0.30-1.10	0.06-0.20	0.18-0.24	3.0-5.9	6.0-20	.28	.28			
1080:													
Klossner, ponded------	30	0-26	---	0.25-0.55	0.20-6.00	0.35-0.48	---	25-60	---	---	2	8	0
		26-33	22-35	1.10-1.25	0.60-2.00	0.22-0.26	3.0-5.9	10-20	.37	.37			
		33-40	22-35	1.30-1.40	0.20-2.00	0.18-0.22	3.0-5.9	5.0-10	.28	.28			
		40-80	15-32	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.0-5.0	.28	.28			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1080:													
Okoboji, ponded-------	30	0-10	30-40	1.20-1.25	0.60-2.00	0.22-0.25	3.0-5.9	10-18	.32	.32	5	8	0
		10-52	35-45	1.35-1.40	0.20-0.60	0.18-0.20	6.0-8.9	4.0-8.0	.37	.37			
		52-60	35-45	1.35-1.40	0.20-0.60	0.18-0.20	6.0-8.9	0.2-1.0	.37	.37			
Glencoe, ponded-------	30	0-42	27-35	1.35-1.45	0.20-2.00	0.18-0.22	3.0-5.9	5.0-10	.28	.28	5	8	0
		42-50	25-35	1.35-1.50	0.20-2.00	0.15-0.19	3.0-5.9	2.0-6.0	.28	.28			
		50-60	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1087B:													
Angus----------	55	0-8	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	2.0-4.0	.28	.28	5	6	48
		8-35	24-35	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		35-40	24-35	1.55-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.37	.37			
		40-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Malardi----------	30	0-10	5-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-15	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.0-1.0	.20	.20			
		15-29	1-8	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.05	.10			
		29-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1094B:													
Angus----------	60	0-8	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	2.0-4.0	.28	.28	5	6	48
		8-35	24-35	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		35-40	24-35	1.55-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.37	.37			
		40-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Cordova----------	30	0-13	15-27	1.25-1.45	0.60-2.00	0.18-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
		13-33	28-35	1.35-1.50	0.20-0.60	0.15-0.19	3.0-5.9	1.0-4.0	.28	.28			
		33-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1099:													
Granby, very wet------	85	0-12	2-14	1.20-1.60	6.00-20	0.10-0.12	0.0-2.9	4.0-10	.17	.17	5	2	134
		12-24	0-14	1.45-1.60	6.00-20	0.05-0.12	0.0-2.9	0.0-0.5	.17	.17			
		24-60	0-10	1.45-1.60	6.00-20	0.05-0.09	0.0-2.9	0.0-0.5	.17	.17			
1110:													
Isan----------	90	0-18	5-14	1.30-1.55	2.00-6.00	0.10-0.15	0.0-2.9	3.0-10	.20	.20	3	3	86
		18-29	2-8	1.50-1.65	6.00-20	0.06-0.10	0.0-2.9	0.5-3.0	.17	.17			
		29-80	1-5	1.55-1.70	6.00-20	0.04-0.06	0.0-2.9	0.0-0.5	.15	.15			
1156:													
Cordova----------	85	0-13	15-27	1.25-1.45	0.60-2.00	0.18-0.22	3.0-5.9	4.0-7.0	.28	.28	5	6	48
		13-33	28-35	1.35-1.50	0.20-0.60	0.15-0.19	3.0-5.9	1.0-4.0	.28	.28			
		33-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1161:													
Barry----------	85	0-11	16-23	1.55-1.70	2.00-6.00	0.17-0.19	0.0-2.9	4.0-6.0	.24	.24	5	6	48
		11-33	18-25	1.60-1.80	0.60-2.00	0.15-0.18	3.0-5.9	0.5-1.0	.28	.32			
		33-60	12-20	1.35-1.60	2.00-6.00	0.11-0.16	0.0-2.9	0.1-0.5	.28	.28			
1163:													
Suckercreek, frequently flooded---	85	0-22	7-20	1.20-1.60	2.00-6.00	0.18-0.24	0.0-2.9	3.0-6.0	.28	.28	5	5	56
		22-80	2-18	1.45-1.65	2.00-6.00	0.08-0.20	0.0-2.9	0.2-3.0	.28	.28			
1165:													
Lundlake, depressional	90	0-12	28-35	1.20-1.45	0.20-2.00	0.17-0.22	3.0-5.9	5.0-12	.28	.28	5	7	38
		12-36	20-30	1.20-1.45	0.20-2.00	0.17-0.22	3.0-5.9	2.0-5.0	.28	.28			
		36-72	16-27	1.30-1.50	0.60-2.00	0.15-0.19	0.0-2.9	0.0-1.0	.28	.28			
		72-80	10-18	1.40-1.60	2.00-6.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
1173:													
Muskego, frequently flooded----------	45	0-9	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---	1	8	0
		9-36	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---			
		36-60	18-35	0.30-1.10	0.06-0.20	0.18-0.24	3.0-5.9	6.0-20	.28	.28			
Klossner, frequently flooded----------	45	0-26	---	0.25-0.55	0.20-6.00	0.35-0.48	---	25-60	---	---	2	8	0
		26-33	22-35	1.10-1.25	0.60-2.00	0.22-0.26	3.0-5.9	10-20	.37	.37			
		33-40	22-35	1.30-1.40	0.20-2.00	0.18-0.22	3.0-5.9	5.0-10	.28	.28			
		40-80	15-32	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.0-5.0	.28	.28			
1186:													
Forestcity----------	75	0-22	10-18	1.20-1.40	2.00-6.00	0.14-0.16	0.0-2.9	2.0-5.0	.20	.20	5	3	86
		22-43	18-28	1.30-1.50	0.60-2.00	0.14-0.17	3.0-5.9	2.0-8.0	.32	.32			
		43-60	12-28	1.30-1.50	0.60-6.00	0.11-0.17	3.0-5.9	0.0-1.0	.32	.32			
		60-80	10-18	1.40-1.60	2.00-6.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
Lundlake, depressional	20	0-20	20-27	1.20-1.45	0.20-2.00	0.17-0.22	3.0-5.9	5.0-12	.28	.28	5	6	48
		20-46	20-30	1.20-1.45	0.20-2.00	0.17-0.22	3.0-5.9	2.0-5.0	.28	.28			
		46-54	16-27	1.30-1.50	0.60-2.00	0.15-0.19	0.0-2.9	0.0-1.0	.28	.28			
		54-60	10-18	1.40-1.60	2.00-6.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
1196B:													
Lida----------	60	0-6	5-18	1.40-1.60	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		6-8	3-15	1.40-1.60	2.00-20	0.08-0.13	0.0-2.9	0.0-0.5	.10	.17			
		8-17	8-18	1.45-1.65	2.00-6.00	0.08-0.17	0.0-2.9	0.5-1.0	.15	.24			
		17-25	1-5	1.55-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.15			
		25-80	1-5	1.60-1.70	6.00-40	0.01-0.07	0.0-2.9	0.0-0.5	.05	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1196B:													
Two Inlets----------	30	0-9	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.15	.15	5	2	134
		9-19	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		19-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1196C:													
Lida----------	55	0-6	5-18	1.40-1.60	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		6-8	3-15	1.40-1.60	2.00-20	0.08-0.13	0.0-2.9	0.0-0.5	.10	.17			
		8-17	8-18	1.45-1.65	2.00-6.00	0.08-0.17	0.0-2.9	0.5-1.0	.15	.24			
		17-25	1-5	1.55-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.15			
		25-80	1-5	1.60-1.70	6.00-40	0.01-0.07	0.0-2.9	0.0-0.5	.05	.10			
Two Inlets----------	30	0-9	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.15	.15	5	2	134
		9-19	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		19-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1196E:													
Lida----------	50	0-6	5-18	1.40-1.60	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		6-8	3-15	1.40-1.60	2.00-20	0.08-0.13	0.0-2.9	0.0-0.5	.10	.17			
		8-17	8-18	1.45-1.65	2.00-6.00	0.08-0.17	0.0-2.9	0.5-1.0	.15	.24			
		17-25	1-5	1.55-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.05	.15			
		25-80	1-5	1.60-1.70	6.00-40	0.01-0.07	0.0-2.9	0.0-0.5	.05	.10			
Two Inlets----------	40	0-8	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.15	.15	5	2	134
		8-20	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		20-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1197:													
Suckercreek, occasionally flooded	80	0-12	7-20	1.20-1.60	2.00-6.00	0.18-0.24	0.0-2.9	3.0-6.0	.24	.24	5	3	86
		12-80	2-18	1.45-1.65	2.00-6.00	0.08-0.20	0.0-2.9	0.2-3.0	.28	.28			
1199:													
Klossner, ponded------	45	0-26	---	0.25-0.55	0.20-6.00	0.35-0.48	---	25-60	---	---	2	8	0
		26-33	22-35	1.10-1.25	0.60-2.00	0.22-0.26	3.0-5.9	10-20	.37	.37			
		33-40	22-35	1.30-1.40	0.20-2.00	0.18-0.22	3.0-5.9	5.0-10	.28	.28			
		40-80	15-32	1.35-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.0-5.0	.28	.28			
Lundlake, ponded------	45	0-8	20-27	1.20-1.40	0.20-2.00	0.17-0.22	3.0-5.9	10-20	.24	.24	5	8	0
		8-26	20-27	1.20-1.40	0.20-2.00	0.17-0.22	3.0-5.9	5.0-10	.28	.28			
		26-80	10-18	1.40-1.60	2.00-6.00	0.10-0.15	0.0-2.9	0.0-0.5	.24	.24			
1203:													
Muskego, ponded-------	30	0-9	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---	1	8	0
		9-36	---	0.10-0.21	0.60-6.00	0.35-0.45	---	60-90	---	---			
		36-60	18-35	0.30-1.10	0.06-0.20	0.18-0.24	3.0-5.9	6.0-20	.28	.28			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1203:													
Blue Earth, ponded----	30	0-50	18-32	0.20-0.80	0.60-2.00	0.18-0.24	3.0-5.9	10-25	.28	.28	5	8	0
		50-60	18-32	0.20-0.80	0.60-2.00	0.18-0.24	0.0-2.9	10-25	.28	.28			
Houghton, ponded------	30	0-80	---	0.15-0.25	0.20-6.00	0.35-0.45	---	70-99	---	---	3	8	0
1204B:													
Reedslake----------	85	0-12	20-26	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.24	.24	5	6	48
		12-26	22-32	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
		26-48	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		48-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1207B:													
Reedslake----------	60	0-12	20-26	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.24	.24	5	6	48
		12-26	22-32	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
		26-48	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		48-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Le Sueur----------	25	0-14	20-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	3.0-7.0	.28	.28	5	6	48
		14-40	24-35	1.30-1.45	0.60-2.00	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
		40-55	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		55-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1213C:													
Cokato, eroded--------	65	0-8	22-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.28	.28	5	6	48
		8-23	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	1.0-2.0	.37	.37			
		23-48	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		48-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Storden----------	20	0-7	18-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	5	4L	86
		7-55	18-30	1.35-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37			
		55-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1213D:													
Cokato, eroded--------	60	0-8	22-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.28	.28	5	6	48
		8-20	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	1.0-2.0	.37	.37			
		20-40	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		40-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Storden----------	25	0-7	18-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	5	4L	86
		7-55	18-30	1.35-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37			
		55-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1220C:													
Cokato, eroded--------	50	0-8	22-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.28	.28	5	6	48
		8-23	25-35	1.40-1.50	0.60-2.00	0.15-0.19	3.0-5.9	1.0-2.0	.37	.37			
		23-48	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		48-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Storden----------	20	0-7	18-27	1.35-1.45	0.60-2.00	0.20-0.22	0.0-2.9	1.0-2.0	.28	.28	5	4L	86
		7-55	18-30	1.35-1.65	0.60-2.00	0.15-0.19	3.0-5.9	0.0-1.0	.37	.37			
		55-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Hawick----------	15	0-10	2-12	1.50-1.65	2.00-20	0.03-0.13	0.0-2.9	1.0-3.0	.10	.15	3	8	0
		10-60	1-5	1.55-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.10	.15			
1223:													
Sandberg, MAP >25-----	60	0-11	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.15	.15	5	2	134
		11-35	0-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.5-1.0	.05	.10			
		35-80	0-5	1.50-1.65	20-40	0.02-0.06	0.0-2.9	0.0-0.5	.05	.10			
Arvilla, MAP >25------	30	0-14	6-18	1.40-1.60	1.98-5.95	0.13-0.15	0.0-2.9	1.0-4.0	.20	.20	3	3	86
		14-17	6-18	1.40-1.60	1.98-5.95	0.11-0.14	0.0-2.9	1.0-2.0	.20	.20			
		17-80	2-10	1.40-1.60	5.95-20	0.02-0.05	0.0-2.9	0.0-0.5	.10	.20			
1224:													
Hubbard----------	60	0-11	4-10	1.45-1.60	6.00-20	0.08-0.12	0.0-2.9	2.0-4.0	.15	.15	5	2	134
		11-27	1-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
		27-80	0-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
Verndale, acid substratum----------	30	0-10	7-12	1.50-1.70	2.00-6.00	0.13-0.17	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-16	7-18	1.60-1.70	0.60-2.00	0.14-0.18	0.0-2.9	0.5-1.0	.24	.24			
		16-45	2-6	1.45-1.60	6.00-20	0.06-0.08	0.0-2.9	0.0-0.5	.10	.10			
		45-80	0-4	1.45-1.60	6.00-20	0.02-0.06	0.0-2.9	0.0-0.5	.10	.10			
1231:													
Hubbard----------	60	0-20	4-10	1.45-1.60	6.00-20	0.08-0.12	0.0-2.9	2.0-4.0	.15	.15	5	2	134
		20-32	1-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
		32-80	0-5	1.55-1.65	6.00-20	0.03-0.07	0.0-2.9	0.0-0.5	.15	.15			
Mosford----------	30	0-13	7-18	1.50-1.70	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		13-16	7-18	1.50-1.70	2.00-6.00	0.12-0.17	0.0-2.9	0.5-2.0	.24	.24			
		16-35	2-6	1.45-1.60	6.00-20	0.03-0.11	0.0-2.9	0.0-0.5	.15	.15			
		35-80	2-4	1.45-1.60	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.05	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1255:													
Elkriver, occasionally flooded----------	80	0-10	5-18	1.45-1.55	0.60-6.00	0.16-0.20	0.0-2.9	1.5-3.0	.20	.20	4	3	86
		10-26	5-18	1.45-1.55	0.60-6.00	0.15-0.20	0.0-2.9	1.5-3.0	.20	.20			
		26-32	5-18	1.45-1.55	0.60-6.00	0.15-0.19	0.0-2.9	0.5-2.0	.15	.15			
		32-80	1-10	1.60-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.10	.15			
1256:													
Cantlin----------	90	0-8	2-10	1.40-1.60	5.95-20	0.10-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		8-22	2-10	1.50-1.70	5.95-20	0.06-0.08	0.0-2.9	0.0-0.5	.17	.17			
		22-80	2-5	1.55-1.70	5.95-20	0.05-0.07	0.0-2.9	0.0-0.5	.17	.17			
1257:													
Elkriver, rarely flooded----------	55	0-10	5-18	1.45-1.55	0.60-6.00	0.16-0.20	0.0-2.9	1.5-3.0	.20	.20	4	3	86
		10-35	5-18	1.45-1.55	0.60-6.00	0.15-0.20	0.0-2.9	1.5-3.0	.20	.20			
		35-39	5-18	1.45-1.55	0.60-6.00	0.15-0.19	0.0-2.9	0.5-2.0	.15	.15			
		39-80	1-10	1.60-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.10	.15			
Mosford, rarely flooded----------	35	0-11	7-18	1.50-1.70	2.00-6.00	0.13-0.18	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		11-16	7-18	1.50-1.70	2.00-6.00	0.12-0.17	0.0-2.9	0.5-2.0	.24	.24			
		16-25	2-6	1.45-1.60	6.00-20	0.03-0.11	0.0-2.9	0.0-0.5	.15	.15			
		25-80	2-4	1.45-1.60	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.05	.10			
1260B:													
Stonelake----------	55	0-8	1-5	1.45-1.60	20-60	0.10-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		8-30	1-8	1.45-1.60	20-60	0.03-0.08	0.0-2.9	0.0-0.5	.05	.10			
		30-80	1-4	1.45-1.65	20-60	0.02-0.05	0.0-2.9	0.0-0.5	.05	.10			
Nebish, moderately wet	30	0-6	5-18	1.35-1.50	1.98-5.95	0.13-0.18	0.0-2.9	1.0-2.0	.24	.24	5	3	86
		6-9	5-12	1.40-1.65	1.98-5.95	0.11-0.19	0.0-2.9	0.5-1.0	.24	.24			
		9-43	22-35	1.50-1.65	0.57-1.98	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
		43-80	18-30	1.50-1.70	0.57-1.98	0.11-0.19	0.0-2.9	0.0-0.5	.32	.32			
1260C:													
Stonelake----------	55	0-7	1-5	1.45-1.60	20-60	0.10-0.12	0.0-2.9	0.5-2.0	.17	.17	5	2	134
		7-20	1-4	1.45-1.60	20-60	0.03-0.04	0.0-2.9	0.0-0.5	.05	.10			
		20-42	1-8	1.45-1.60	20-60	0.03-0.08	0.0-2.9	0.0-0.5	.05	.10			
		42-80	1-4	1.45-1.65	20-60	0.02-0.05	0.0-2.9	0.0-0.5	.05	.10			
Nebish----------	30	0-3	5-18	1.35-1.50	1.98-5.95	0.13-0.18	0.0-2.9	1.0-2.0	.24	.24	5	3	86
		3-10	5-12	1.40-1.65	1.98-5.95	0.11-0.19	0.0-2.9	0.5-1.0	.24	.24			
		10-29	22-35	1.50-1.65	0.57-1.98	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
		29-80	18-30	1.50-1.70	0.57-1.98	0.11-0.19	0.0-2.9	0.0-0.5	.32	.32			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1260E:													
Stonelake----------	60	0-5	1-10	1.45-1.60	5.95-20	0.06-0.15	0.0-2.9	1.0-4.0	.05	.10	5	8	0
		5-11	1-4	1.45-1.60	20-60	0.03-0.04	0.0-2.9	0.0-0.5	.05	.10			
		11-20	1-8	1.45-1.60	20-60	0.03-0.08	0.0-2.9	0.0-0.5	.05	.10			
		20-80	1-4	1.45-1.65	20-60	0.02-0.05	0.0-2.9	0.0-0.5	.05	.10			
Nebish----------	25	0-5	5-18	1.35-1.50	1.98-5.95	0.13-0.18	0.0-2.9	1.0-3.0	.24	.24	5	3	86
		5-9	5-12	1.40-1.65	1.98-5.95	0.11-0.19	0.0-2.9	0.5-1.0	.24	.24			
		9-27	22-35	1.50-1.65	0.57-1.98	0.15-0.19	3.0-5.9	0.5-1.0	.32	.32			
		27-80	18-30	1.50-1.70	0.57-1.98	0.11-0.19	0.0-2.9	0.0-0.5	.32	.32			
1288:													
Seelyeville, ponded---	45	0-15	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---	3	8	0
		15-80	---	0.10-0.25	0.20-6.00	0.35-0.45	---	25-99	---	---			
Markey, ponded--------	45	0-27	---	0.15-0.45	0.20-6.00	0.35-0.45	---	55-85	---	---	2	8	0
		27-32	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	1.0-4.0	.15	.15			
		32-80	0-10	1.40-1.65	6.00-20	0.03-0.08	0.0-2.9	0.0-0.5	.15	.15			
1356.													
Water, miscellaneous													
1362B:													
Angus----------	85	0-8	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	2.0-4.0	.28	.28	5	6	48
		8-35	24-35	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		35-40	24-35	1.55-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.37	.37			
		40-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1368:													
Southhaven----------	90	0-48	16-27	1.30-1.40	0.60-2.00	0.15-0.22	0.0-2.9	4.0-9.0	.24	.24	5	6	48
		48-62	16-30	1.40-1.60	0.60-2.00	0.12-0.19	3.0-5.9	0.0-0.5	.24	.24			
		62-66	4-8	1.45-1.70	6.00-20	0.01-0.11	0.0-2.9	0.0-0.5	.17	.17			
		66-80	1-5	1.55-1.70	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.10	.05			
1377B:													
Dorset----------	70	0-11	4-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	3.0-5.0	.20	.20	3	3	86
		11-19	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.5-2.0	.28	.28			
		19-32	5-10	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.10	.17			
		32-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
Two Inlets----------	20	0-9	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.15	.15	5	2	134
		9-19	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		19-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1377C:													
Dorset----------	50	0-11	4-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-5.0	.20	.20	3	3	86
		11-19	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.5-2.0	.28	.28			
		19-32	5-10	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.10	.17			
		32-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
Two Inlets----------	35	0-9	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.15	.15	5	2	134
		9-19	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		19-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1377D:													
Dorset----------	45	0-9	4-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		9-14	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.5-2.0	.28	.28			
		14-25	5-10	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.10	.17			
		25-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
Two Inlets----------	40	0-9	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.15	.15	5	2	134
		9-19	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		19-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1377E:													
Dorset----------	45	0-9	4-18	1.40-1.55	2.00-6.00	0.13-0.15	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		9-14	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.5-2.0	.28	.28			
		14-27	5-10	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.10	.17			
		27-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			
Two Inlets----------	45	0-8	2-10	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	0.5-2.0	.15	.15	5	2	134
		8-20	5-15	1.40-1.60	6.00-20	0.09-0.11	0.0-2.9	0.0-0.5	.10	.15			
		20-80	0-3	1.60-1.80	20-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1378:													
Fordum, occasionally flooded----------	85	0-9	10-23	1.35-1.45	0.60-2.00	0.17-0.24	0.0-2.9	4.0-12	.28	.28	4	6	48
		9-38	8-17	1.40-1.50	0.60-2.00	0.10-0.22	0.0-2.9	0.5-3.0	.37	.37			
		38-80	2-5	1.55-1.70	6.00-20	0.04-0.16	0.0-2.9	0.5-1.0	.15	.15			
1379B:													
Dorset----------	65	0-9	8-18	1.45-1.65	2.00-6.00	0.18-0.22	0.0-2.9	3.0-5.0	.28	.28	3	5	56
		9-21	10-18	1.45-1.65	2.00-6.00	0.12-0.19	0.0-2.9	0.5-2.0	.28	.28			
		21-26	5-10	1.55-1.65	6.00-20	0.06-0.10	0.0-2.9	0.0-0.5	.10	.17			
		26-80	0-5	1.55-1.65	6.00-20	0.02-0.04	0.0-2.9	0.0-0.5	.10	.15			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1379B:													
Almora----------	25	0-10	12-20	1.30-1.55	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.24	.24	4	5	56
		10-14	12-20	1.30-1.55	0.60-2.00	0.12-0.19	0.0-2.9	1.0-2.0	.28	.28			
		14-36	16-22	1.30-1.55	0.60-2.00	0.14-0.19	2.0-5.9	0.5-1.0	.32	.32			
		36-41	3-12	1.55-1.65	6.00-20	0.02-0.11	0.0-2.9	0.0-0.5	.10	.15			
		41-80	1-4	1.55-1.65	6.00-20	0.02-0.07	0.0-2.9	0.0-0.5	.10	.15			
1380A:													
Bygland, MAP >25------	85	0-9	18-26	1.20-1.40	0.20-2.00	0.22-0.24	3.0-5.9	3.0-7.0	.28	.28	5	6	48
		9-23	35-60	1.20-1.40	0.06-0.60	0.10-0.19	6.0-8.9	0.5-3.0	.32	.32			
		23-27	18-40	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	0.5-1.0	.43	.43			
		27-80	18-40	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
1380B:													
Bygland, MAP >25------	70	0-9	18-26	1.20-1.40	0.20-2.00	0.22-0.24	3.0-5.9	3.0-7.0	.28	.28	5	6	48
		9-23	35-60	1.20-1.40	0.06-0.60	0.10-0.19	6.0-8.9	0.5-3.0	.32	.32			
		23-27	18-40	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	0.5-1.0	.43	.43			
		27-80	18-40	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
1380C:													
Bygland, MAP >25------	70	0-7	18-26	1.20-1.40	0.20-2.00	0.22-0.24	3.0-5.9	1.0-2.0	.28	.28	5	6	48
		7-20	35-60	1.20-1.40	0.06-0.60	0.10-0.19	6.0-8.9	0.5-3.0	.32	.32			
		20-26	18-40	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	0.5-1.0	.43	.43			
		26-80	18-40	1.30-1.50	0.20-0.60	0.16-0.22	3.0-5.9	0.0-0.5	.43	.43			
1381:													
Lindaas, morainic-----	80	0-16	20-27	1.10-1.30	0.60-2.00	0.18-0.23	3.0-5.9	3.0-7.0	.32	.32	5	6	48
		16-32	35-60	1.20-1.40	0.06-0.20	0.10-0.14	6.0-8.9	1.0-4.0	.32	.32			
		32-80	25-40	1.20-1.50	0.20-0.60	0.11-0.15	3.0-5.9	0.5-1.0	.32	.32			
1383A:													
Shorewood, moderately wet----------	95	0-17	30-40	1.20-1.40	0.14-0.57	0.18-0.22	3.0-5.9	4.0-8.0	.28	.28	5	4	86
		17-39	36-55	1.20-1.35	0.0000-0.57	0.13-0.16	6.0-8.9	1.0-4.0	.32	.32			
		39-60	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1388B:													
Terril, moderately wet	85	0-27	18-26	1.35-1.40	0.60-2.00	0.20-0.22	0.0-2.9	3.0-5.0	.24	.24	5	6	48
		27-40	24-30	1.40-1.45	0.60-2.00	0.17-0.19	0.0-2.9	2.0-4.0	.28	.28			
		40-63	22-30	1.45-1.70	0.60-2.00	0.16-0.18	0.0-2.9	0.0-1.0	.32	.32			
		63-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1406:													
Medo, ponded----------	30	0-20	---	0.25-0.45	0.20-6.00	0.35-0.45	---	55-85	---	---	2	8	0
		20-34	15-30	1.15-1.65	0.60-6.00	0.13-0.20	3.0-5.9	5.0-20	.24	.24			
		34-60	0-10	1.50-1.65	6.00-20	0.03-0.10	0.0-2.9	0.0-0.5	.10	.10			
Dassel, ponded--------	30	0-23	6-18	1.30-1.45	2.00-6.00	0.16-0.20	0.0-2.9	3.0-15	.20	.20	4	8	0
		23-31	2-6	1.40-1.60	2.00-6.00	0.12-0.17	0.0-2.9	0.5-1.0	.20	.20			
		31-60	2-6	1.45-1.65	6.00-20	0.02-0.08	0.0-2.9	0.0-0.5	.05	.15			
Biscay, ponded--------	30	0-24	18-27	1.20-1.30	0.60-2.00	0.20-0.22	3.0-5.9	4.0-8.0	.28	.28	4	8	0
		24-29	18-30	1.25-1.35	0.60-2.00	0.17-0.19	3.0-5.9	0.5-1.0	.28	.28			
		29-60	1-6	1.55-1.65	6.00-40	0.02-0.04	0.0-2.9	0.0-0.5	.05	.10			
1408B:													
Angus----------	45	0-8	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	2.0-4.0	.28	.28	5	6	48
		8-35	24-35	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		35-40	24-35	1.55-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.37	.37			
		40-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Kilkenny----------	40	0-11	27-30	1.15-1.25	0.20-0.60	0.17-0.19	3.0-5.9	2.0-4.0	.28	.28	5	6	48
		11-35	35-45	1.25-1.35	0.20-0.60	0.15-0.19	3.0-5.9	0.2-1.0	.28	.28			
		35-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1438B:													
Braham, moderately wet	85	0-8	2-8	1.40-1.60	6.00-20	0.10-0.12	0.0-2.9	1.0-3.0	.17	.17	5	2	134
		8-24	2-8	1.45-1.60	6.00-20	0.08-0.10	0.0-2.9	0.0-0.5	.17	.17			
		24-42	18-30	1.50-1.70	0.20-2.00	0.15-0.18	3.0-5.9	0.0-0.5	.37	.37			
		42-60	16-30	1.55-1.75	0.60-2.00	0.15-0.18	3.0-5.9	0.0-0.5	.37	.37			
1443:													
Belleville----------	85	0-11	12-18	1.30-1.50	2.00-6.00	0.13-0.18	0.0-2.9	3.0-6.0	.20	.20	3	3	86
		11-27	2-12	1.40-1.55	6.00-20	0.04-0.12	0.0-2.9	0.1-0.5	.17	.17			
		27-48	20-30	1.45-1.70	0.20-0.60	0.12-0.20	3.0-5.9	0.1-0.5	.32	.32			
		48-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1901B:													
Angus----------	60	0-8	20-27	1.30-1.40	0.60-2.00	0.20-0.22	0.0-2.9	2.0-4.0	.28	.28	5	6	48
		8-35	24-35	1.45-1.55	0.60-2.00	0.15-0.19	3.0-5.9	0.5-1.0	.28	.28			
		35-40	24-35	1.55-1.75	0.60-2.00	0.14-0.19	0.0-2.9	0.0-0.5	.37	.37			
		40-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
Le Sueur----------	30	0-14	20-27	1.30-1.40	0.60-2.00	0.20-0.24	0.0-2.9	3.0-7.0	.28	.28	5	6	48
		14-40	24-35	1.30-1.45	0.60-2.00	0.15-0.19	3.0-5.9	0.5-2.0	.32	.32			
		40-55	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
		55-80	20-30	1.35-1.55	0.60-2.00	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			

Table 18.--Physical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Clay	Moist bulk density	Permea-bility	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T	Wind erodi-bility group	Wind erodi-bility index
		In	Pct	g/cc	In/hr	In/in	Pct	Pct					
1931:													
Essexville----------	75	0-15	12-18	1.30-1.50	2.00-6.00	0.13-0.18	0.0-2.9	4.0-8.0	.20	.20	3	3	86
		15-30	2-12	1.40-1.55	6.00-20	0.04-0.12	0.0-2.9	0.0-0.5	.17	.17			
		30-80	20-30	1.35-1.55	0.57-1.98	0.15-0.19	1.0-4.2	0.1-0.5	.32	.37			
1942:													
Forada, depressional--	85	0-10	10-22	1.00-1.40	0.60-2.00	0.20-0.22	0.0-2.9	5.0-15	.28	.28	4	5	56
		10-21	8-18	1.30-1.50	0.60-6.00	0.12-0.19	0.0-2.9	0.5-1.0	.28	.28			
		21-60	0-5	1.50-1.70	6.00-20	0.02-0.10	0.0-2.9	0.0-0.5	.15	.17			
1946:													
Fordum, frequently flooded----------	70	0-7	5-12	1.35-1.50	0.60-6.00	0.11-0.18	0.0-2.9	6.0-15	.20	.20	4	8	0
		7-28	1-6	1.40-1.50	0.60-6.00	0.10-0.22	0.0-2.9	1.0-10	.37	.37			
		28-80	1-5	1.55-1.70	6.00-20	0.04-0.10	0.0-2.9	0.5-2.0	.15	.15			
Winterfield, frequently flooded---	20	0-8	0-10	1.40-1.50	2.00-20	0.10-0.12	0.0-2.9	1.0-4.0	.17	.17	5	8	0
		8-20	0-5	1.45-1.60	6.00-20	0.06-0.11	0.0-2.9	0.0-1.0	.17	.17			
		20-80	0-5	1.55-1.65	6.00-20	0.04-0.10	0.0-2.9	0.0-0.5	.10	.17			
1975:													
Oylen----------	90	0-10	7-12	1.50-1.70	1.98-5.95	0.12-0.16	0.0-2.9	2.0-4.0	.20	.20	3	3	86
		10-18	7-18	1.60-1.70	0.57-1.98	0.12-0.18	0.0-2.9	0.5-2.0	.24	.24			
		18-38	2-6	1.45-1.60	5.95-20	0.03-0.08	0.0-2.9	0.0-0.5	.10	.10			
		38-80	0-4	1.45-1.60	5.95-20	0.03-0.07	0.0-2.9	0.0-0.5	.05	.10			
W. Water													

Table 19.--Chemical Properties of the Soils

(Absence of an entry indicates that data were not estimated)

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
7A:						
Hubbard	95	0-20	6.0-16	5.1-7.3	---	---
		20-32	1.0-4.0	5.1-7.3	---	---
		32-80	0.0-4.0	5.6-7.8	0-15	---
7B:						
Hubbard	90	0-18	6.0-16	5.1-7.3	---	---
		18-23	1.0-4.0	5.1-7.3	---	---
		23-80	0.0-4.0	5.6-7.8	0-15	---
7C:						
Hubbard	80	0-12	6.0-16	5.1-7.3	---	---
		12-33	1.0-4.0	5.1-7.3	---	---
		33-80	0.0-4.0	5.6-7.8	0-15	---
8B:						
Sparta	95	0-16	2.0-12	5.1-7.3	---	---
		16-29	1.0-6.0	5.1-7.3	---	---
		29-60	1.0-4.0	5.1-7.3	---	---
35:						
Blue Earth, depressional	80	0-10	30-70	7.4-8.4	5-20	---
		10-68	30-70	7.4-8.4	5-40	---
		68-80	10-20	7.4-8.4	10-20	0-1
74B:						
Dickinson	95	0-18	15-20	5.6-7.3	---	---
		18-30	15-20	5.1-6.5	---	---
		30-36	5.0-10	5.6-7.3	---	---
		36-60	5.0-10	5.6-7.3	---	---
86:						
Canisteo	80	0-18	19-37	7.4-8.4	5-15	---
		18-39	10-20	7.4-8.4	15-25	0-1
		39-80	10-20	7.4-8.4	10-20	0-1
106C2:						
Lester, eroded	70	0-7	10-24	5.6-7.3	---	---
		7-38	10-23	5.1-7.3	---	---
		38-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
106D2:						
Lester, eroded	80	0-7	10-24	5.6-7.3	---	---
		7-38	10-23	5.1-7.3	---	---
		38-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
106E:						
Lester	80	0-5	10-24	5.6-7.3	---	---
		5-34	10-23	5.1-7.3	---	---
		34-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
109:						
Cordova	90	0-18	20-30	6.1-7.3	---	---
		18-38	15-25	5.1-7.3	---	---
		38-80	10-20	7.4-8.4	10-20	0-1

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
114:						
Glencoe, depressional	90	0-10	23-37	6.1-7.8	0-5	---
		10-35	16-27	6.1-7.8	0-5	---
		35-48	14-25	6.6-7.8	0-5	---
		48-60	10-20	7.4-8.4	10-20	0-1
138:						
Lerdal	80	0-7	18-24	5.6-6.5	---	---
		7-9	18-24	5.6-6.5	---	---
		9-47	19-30	4.5-6.0	---	---
		47-60	10-20	7.4-8.4	15-25	0-1
158A:						
Zimmerman	90	0-7	2.0-5.0	5.1-6.5	---	---
		7-80	1.0-6.0	5.1-7.3	---	---
158B:						
Zimmerman	90	0-7	2.0-5.0	5.1-6.5	---	---
		7-80	1.0-6.0	5.1-7.3	---	---
158C:						
Zimmerman	90	0-7	2.0-5.0	5.1-6.5	---	---
		7-80	1.0-6.0	5.1-7.3	---	---
158E:						
Zimmerman	85	0-3	2.0-5.0	5.1-6.5	---	---
		3-80	1.0-6.0	5.1-7.3	---	---
169C:						
Braham	90	0-8	2.0-9.0	5.6-7.3	---	---
		8-28	1.0-5.0	5.6-7.3	---	---
		28-48	7.0-21	5.1-7.3	---	---
		48-80	7.0-21	7.4-8.4	5-25	0-1
181:						
Litchfield	95	0-20	6.0-14	5.1-7.3	---	---
		20-33	3.0-8.0	5.1-7.3	---	---
		33-40	15-24	5.1-7.3	---	---
		40-80	1.0-6.0	6.1-7.8	0-5	---
229:						
Waldorf	90	0-20	33-48	6.1-7.3	---	---
		20-53	25-46	6.6-7.8	0-15	---
		53-80	14-37	7.4-8.4	15-30	---
231C:						
Lester	80	0-9	5.0-15	5.6-7.3	---	---
		9-53	10-23	5.1-7.3	---	---
		53-80	10-20	7.4-8.4	10-20	0-1
231D:						
Lester	80	0-6	5.0-15	5.6-7.3	---	---
		6-34	10-23	5.1-7.3	---	---
		34-80	10-20	7.4-8.4	10-20	0-1
235:						
Nessel	85	0-6	5.0-14	5.6-7.3	---	---
		6-38	2.0-12	5.1-7.3	---	---
		38-80	10-20	7.4-8.4	10-20	0-1

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
239:						
Le Sueur----------	80	0-17	15-26	5.6-7.3	---	---
		17-37	11-25	5.1-7.3	---	---
		37-46	10-20	7.4-8.4	15-25	0-1
		46-80	10-20	7.4-8.4	10-20	0-1
247:						
Linder----------	90	0-13	15-20	6.1-7.3	---	---
		13-24	10-15	6.1-7.3	---	---
		24-60	5.0-10	7.4-8.4	5-30	---
255:						
Mayer----------	85	0-18	15-31	7.4-8.4	5-30	---
		18-33	13-27	7.4-8.4	5-30	---
		33-80	1.0-10	7.4-8.4	5-30	---
256:						
Mazaska----------	90	0-15	22-34	6.1-7.3	---	---
		15-42	19-29	4.5-6.5	---	---
		42-80	10-20	7.4-8.4	15-25	0-1
258B:						
Sandberg----------	95	0-12	2.0-12	5.6-7.8	0-5	---
		12-19	1.0-6.0	6.1-7.8	0-5	---
		19-80	1.0-4.0	7.4-8.4	5-10	---
258C:						
Sandberg----------	90	0-12	2.0-12	5.6-7.8	0-5	---
		12-19	1.0-6.0	6.1-7.8	0-5	---
		19-80	1.0-4.0	7.4-8.4	5-10	---
258E:						
Sandberg----------	85	0-12	2.0-12	5.6-7.8	0-5	---
		12-19	1.0-6.0	6.1-7.8	0-5	---
		19-80	1.0-4.0	7.4-8.4	5-10	---
260:						
Duelm----------	90	0-16	5.0-18	5.6-7.3	---	---
		16-30	0.0-4.0	5.1-7.3	---	---
		30-80	0.0-5.0	5.6-7.8	0-15	---
261:						
Isan, depressional---	90	0-14	10-25	5.6-7.3	---	---
		14-34	2.0-10	5.1-6.5	---	---
		34-80	1.0-5.0	5.6-7.3	---	---
286B:						
Shorewood----------	95	0-17	30-45	5.6-7.3	---	---
		17-39	25-45	5.1-7.3	---	---
		39-60	10-20	7.4-8.4	10-20	0-1
294A:						
Rasset----------	90	0-15	5.0-15	5.1-7.3	---	---
		15-28	7.0-13	5.1-7.3	---	---
		28-36	2.0-7.0	5.1-7.3	---	---
		36-80	1.0-3.0	5.1-7.8	0-20	---
323:						
Shields----------	95	0-8	18-28	5.6-6.5	---	---
		8-41	21-34	5.6-6.5	---	---
		41-80	14-26	7.4-8.4	5-20	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
327A:						
Dickman	85	0-12	5.0-15	5.6-6.5	---	---
		12-19	3.0-10	5.6-7.3	---	---
		19-33	1.0-4.0	5.6-7.3	---	---
		33-80	0.0-5.0	6.1-7.8	0-5	---
327B:						
Dickman	85	0-12	5.0-15	5.6-6.5	---	---
		12-19	3.0-10	5.6-7.3	---	---
		19-33	1.0-4.0	5.6-7.3	---	---
		33-80	0.0-5.0	6.1-7.8	0-5	---
375:						
Forada	85	0-16	14-30	6.1-7.3	---	---
		16-28	4.0-12	6.1-7.8	0-15	---
		28-60	0.0-5.0	6.6-8.4	0-15	---
392:						
Biscay	90	0-20	20-35	6.1-7.8	0-15	---
		20-28	12-25	6.6-7.8	0-15	---
		28-36	5.0-20	6.6-7.8	0-15	---
		36-60	1.0-5.0	7.4-8.4	5-30	---
406:						
Dorset	90	0-11	10-23	5.6-7.3	---	---
		11-19	7.0-17	5.6-7.3	---	---
		19-32	3.0-8.0	6.6-8.4	0-30	---
		32-80	0.0-5.0	7.4-8.4	5-15	---
414:						
Hamel	90	0-24	15-30	5.6-7.3	---	---
		24-46	15-30	5.6-7.3	---	---
		46-80	10-20	7.4-8.4	10-20	0-1
441:						
Almora	90	0-10	12-20	5.6-7.3	---	---
		10-14	8.0-14	5.6-7.3	---	---
		14-36	10-17	5.6-7.3	---	---
		36-41	2.0-7.0	5.6-7.8	0-5	---
		41-80	1.0-3.0	7.4-8.4	5-30	---
461B:						
Koronis	85	0-8	5.0-20	5.6-7.3	---	---
		8-31	10-20	5.6-7.3	---	---
		31-80	5.0-15	7.4-8.4	5-20	---
461C2:						
Koronis, eroded	80	0-8	5.0-20	5.6-7.3	---	---
		8-31	10-20	5.6-7.3	---	---
		31-80	5.0-15	7.4-8.4	5-20	---
461E:						
Koronis	80	0-7	5.0-20	5.6-7.3	---	---
		7-28	10-20	5.6-7.3	---	---
		28-80	5.0-15	7.4-8.4	5-20	---
511:						
Marcellon, MAP <30	85	0-13	8.0-30	5.6-7.3	---	---
		13-32	4.0-20	5.6-7.3	---	---
		32-60	5.0-15	7.4-8.4	5-20	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
523:						
Houghton, drained----	80	0-10	100-200	4.5-7.3	---	---
		10-80	100-200	4.5-7.3	---	---
525:						
Muskego, surface drained----------	75	0-9	140-180	5.6-7.3	---	---
		9-36	150-190	5.6-7.3	---	---
		36-60	10-45	6.6-8.4	60-80	---
539:						
Klossner, drained----	80	0-26	50-150	5.6-7.4	0-5	---
		26-36	35-65	6.1-7.4	0-5	---
		36-48	20-40	6.1-7.4	0-5	---
		48-80	5.0-25	6.1-8.4	0-20	0-1
540:						
Seelyeville, surface drained----------	80	0-10	140-200	5.1-7.3	---	---
		10-80	140-200	5.1-7.3	---	---
543:						
Markey, surface drained----------	80	0-36	110-170	4.5-7.3	---	---
		36-42	1.0-3.0	5.6-7.3	---	---
		42-80	1.0-3.0	5.6-7.3	---	---
548:						
Medo, drained--------	80	0-27	40-100	6.1-7.8	0-5	---
		27-35	20-55	6.1-7.8	0-5	---
		35-39	20-55	6.1-7.8	0-5	---
		39-80	1.0-9.0	6.1-8.4	0-15	---
603:						
Hanlon, occasionally flooded----------	80	0-40	15-20	6.1-7.3	---	---
		40-63	10-15	6.1-7.3	---	---
		63-70	5.0-10	5.6-7.3	---	---
		70-80	5.0-10	5.6-7.8	0-15	---
611D:						
Hawick----------	85	0-10	1.0-10	6.1-7.8	0-10	---
		10-60	1.0-5.0	7.4-8.4	5-15	---
708:						
Rushlake----------	85	0-9	2.0-9.0	6.1-7.8	0-15	---
		9-80	1.0-6.0	6.5-8.4	0-30	---
740:						
Hamel----------	70	0-24	15-30	5.6-7.3	---	---
		24-46	15-30	5.6-7.3	---	---
		46-80	10-20	7.4-8.4	10-20	0-1
Glencoe, depressional	20	0-10	23-37	6.1-7.8	0-5	---
		10-35	16-27	6.1-7.8	0-5	---
		35-48	14-25	6.6-7.8	0-5	---
		48-60	10-20	7.4-8.4	10-20	0-1

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
768:						
Mosford	85	0-13	7.0-9.0	5.1-7.3	---	---
		13-16	4.0-22	5.1-7.3	---	---
		16-35	1.0-3.0	5.1-7.3	---	---
		35-80	0.0-2.0	5.1-7.8	0-15	---
771:						
Elkriver, rarely flooded	85	0-10	6.0-19	5.1-7.3	---	---
		10-35	6.0-19	5.1-7.3	---	---
		35-39	4.0-15	5.6-7.8	0-8	---
		39-80	0.0-6.0	5.6-7.8	0-8	---
783C2:						
Lester, eroded	50	0-7	10-24	5.6-7.3	---	---
		7-38	10-23	5.1-7.3	---	---
		38-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
Kilkenny, eroded	30	0-9	20-30	5.6-7.3	---	---
		9-53	25-35	5.1-7.3	---	---
		53-80	10-20	7.4-8.4	10-20	0-1
792:						
Fordum, frequently flooded	90	0-7	10-35	5.1-7.3	---	---
		7-28	3.0-20	5.1-7.3	---	---
		28-80	2.0-6.0	5.6-7.3	---	---
799:						
Seelyeville, frequently flooded	45	0-12	140-200	5.1-7.3	---	---
		12-80	140-200	5.1-7.3	---	---
Bowstring, frequently flooded	45	0-38	80-190	5.6-7.3	---	---
		38-47	10-40	5.6-7.3	---	---
		47-80	80-190	5.6-7.3	---	---
804B:						
Koronis	50	0-8	5.0-20	5.6-7.3	---	---
		8-25	10-20	5.6-7.3	---	---
		25-60	5.0-15	7.4-8.4	5-20	---
Sunburg	20	0-7	5.0-15	6.6-8.4	0-15	---
		7-60	5.0-15	7.4-8.4	5-20	---
Hawick	15	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---
804C2:						
Koronis, eroded	45	0-8	5.0-20	5.6-7.3	---	---
		8-25	10-20	5.6-7.3	---	---
		25-60	5.0-15	7.4-8.4	5-20	---
Sunburg	25	0-7	5.0-15	6.6-8.4	0-15	---
		7-60	5.0-15	7.4-8.4	5-20	---
Hawick	15	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
804D2:						
Koronis, eroded------	40	0-8	5.0-20	5.6-7.3	---	---
		8-25	10-20	5.6-7.3	---	---
		25-60	5.0-15	7.4-8.4	5-20	---
Sunburg----------	30	0-7	5.0-15	6.6-8.4	0-15	---
		7-60	5.0-15	7.4-8.4	5-20	---
Hawick----------	15	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---
804E:						
Koronis----------	50	0-5	5.0-20	5.6-7.3	---	---
		5-21	10-20	5.6-7.3	---	---
		21-60	5.0-15	7.4-8.4	5-20	---
Sunburg----------	20	0-4	5.0-15	6.6-8.4	0-15	---
		4-60	5.0-15	7.4-8.4	5-20	---
Hawick----------	15	0-11	1.0-10	6.1-7.8	0-10	---
		11-16	1.0-5.0	6.1-7.8	0-10	---
		16-60	1.0-5.0	7.4-8.4	5-15	---
807D2:						
Koronis, eroded------	65	0-8	5.0-20	5.6-7.3	---	---
		8-25	10-20	5.6-7.3	---	---
		25-60	5.0-15	7.4-8.4	5-20	---
Sunburg----------	20	0-7	5.0-15	6.6-8.4	0-15	---
		7-60	5.0-15	7.4-8.4	5-20	---
875B:						
Estherville----------	60	0-13	2.0-20	5.6-7.3	---	---
		13-18	4.0-20	5.6-7.3	---	---
		18-23	0.0-5.0	5.6-7.3	---	---
		23-60	0.0-5.0	6.6-8.4	0-15	---
Hawick----------	30	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---
875C:						
Hawick----------	60	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---
Estherville----------	25	0-13	2.0-20	5.6-7.3	---	---
		13-18	4.0-20	5.6-7.3	---	---
		18-23	0.0-5.0	5.6-7.3	---	---
		23-60	0.0-5.0	6.6-8.4	0-15	---
896B:						
Kingsley----------	70	0-6	5.0-14	5.6-6.5	---	---
		6-18	1.0-7.0	5.6-6.5	---	---
		18-45	2.0-12	5.1-7.3	---	---
		45-80	2.0-7.0	5.6-7.8	0-5	---
Gotham----------	25	0-9	2.0-6.0	5.6-7.3	---	---
		9-18	2.0-4.0	5.1-7.3	---	---
		18-40	2.0-6.0	5.1-7.3	---	---
		40-80	1.0-3.0	5.1-7.3	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
896C:						
Kingsley----------	70	0-6	5.0-14	5.6-6.5	---	---
		6-18	1.0-7.0	5.6-6.5	---	---
		18-45	2.0-12	5.1-7.3	---	---
		45-80	2.0-7.0	5.6-7.8	0-5	---
Gotham----------	25	0-9	2.0-6.0	5.6-7.3	---	---
		9-18	2.0-4.0	5.1-7.3	---	---
		18-40	2.0-6.0	5.1-7.3	---	---
		40-80	1.0-3.0	5.1-7.3	---	---
945C2:						
Lester, eroded-------	50	0-7	10-24	5.6-7.3	---	---
		7-38	10-23	5.1-7.3	---	---
		38-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
Storden, eroded------	30	0-7	11-18	7.4-8.4	5-30	---
		7-55	9.0-18	7.4-8.4	15-30	---
		55-80	10-20	7.4-8.4	10-20	0-1
945D2:						
Lester, eroded-------	60	0-7	10-24	5.6-7.3	---	---
		7-38	10-23	5.1-7.3	---	---
		38-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
Storden, eroded------	20	0-7	11-18	7.4-8.4	5-30	---
		7-55	9.0-18	7.4-8.4	15-30	---
		55-80	10-20	7.4-8.4	10-20	0-1
956:						
Canisteo----------	65	0-18	19-37	7.4-8.4	5-15	---
		18-39	10-20	7.4-8.4	15-25	0-1
		39-80	10-20	7.4-8.4	10-20	0-1
Glencoe, depressional	25	0-10	23-37	6.1-7.8	0-5	---
		10-35	16-27	6.1-7.8	0-5	---
		35-48	14-25	6.6-7.8	0-5	---
		48-60	10-20	7.4-8.4	10-20	0-1
978:						
Cordova----------	60	0-18	20-30	6.1-7.3	---	---
		18-38	15-25	5.1-7.3	---	---
		38-80	10-20	7.4-8.4	10-20	0-1
Rolfe, depressional--	30	0-12	20-25	5.1-7.3	---	---
		12-20	20-25	5.1-6.5	---	---
		20-35	20-30	5.6-7.3	---	---
		35-51	20-25	6.1-7.3	0-25	---
		51-60	10-20	7.4-8.4	10-20	0-1
1000:						
Arvilla, MAP >25-----	90	0-14	5.0-20	6.1-7.3	---	---
		14-20	5.0-15	6.1-7.3	---	---
		20-80	1.0-5.0	7.4-8.4	1-5	---
1015.						
Udipsamments (cut and fill land)						

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1016.						
Udorthents, loamy						
1023C:						
Lester, eroded-------	50	0-7	10-24	5.6-7.3	---	---
		7-38	10-23	5.1-7.3	---	---
		38-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
Malardi----------	35	0-10	6.0-19	5.6-7.3	---	---
		10-15	1.0-12	5.6-7.3	---	---
		15-29	0.0-6.0	5.6-7.3	---	---
		29-80	0.0-3.0	7.0-8.4	0-30	---
1023D:						
Lester, eroded-------	45	0-7	10-24	5.6-7.3	---	---
		7-38	10-23	5.1-7.3	---	---
		38-60	10-20	7.4-8.4	15-25	0-1
		60-80	10-20	7.4-8.4	10-20	0-1
Malardi----------	40	0-9	6.0-19	5.6-7.3	---	---
		9-14	1.0-12	5.6-7.3	---	---
		14-21	0.0-6.0	5.6-7.3	---	---
		21-80	0.0-3.0	7.0-8.4	0-30	---
1026B:						
Lizzie, moderately wet----------	90	0-12	9.0-23	6.1-7.3	---	---
		12-36	8.0-22	6.1-7.3	---	---
		36-40	6.0-13	6.6-7.4	0-35	---
		40-80	2.0-10	7.4-8.4	12-35	---
1027.						
Udorthents, wet substratum						
1030:						
Pits, gravel.						
Udipsamments.						
1035B:						
Crowfork----------	90	0-11	3.0-10	5.6-7.3	---	---
		11-20	1.0-7.0	5.1-6.5	---	---
		20-76	1.0-7.0	5.6-7.3	---	---
		76-80	1.0-4.0	6.1-7.8	0-15	---
1035C:						
Crowfork----------	90	0-11	3.0-10	5.6-7.3	---	---
		11-20	1.0-7.0	5.1-6.5	---	---
		20-76	1.0-7.0	5.6-7.3	---	---
		76-80	1.0-4.0	6.1-7.8	0-15	---
1035D:						
Crowfork----------	85	0-11	3.0-10	5.6-7.3	---	---
		11-20	1.0-7.0	5.1-6.5	---	---
		20-76	1.0-7.0	5.6-7.3	---	---
		76-80	1.0-4.0	6.1-7.8	0-15	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1036B:						
Angus----------	85	0-9	5.0-15	5.6-7.3	---	---
		9-46	10-23	5.1-7.3	---	---
		46-58	8.0-18	6.1-7.8	5-20	---
		58-80	10-20	7.4-8.4	10-20	0-1
1037:						
Eckvoll, MAP >25-----	90	0-9	3.0-14	6.1-7.3	---	---
		9-24	1.0-7.0	6.1-7.3	---	---
		24-45	8.0-18	6.1-7.3	---	---
		45-80	6.0-16	7.4-8.4	5-30	---
1038A:						
Verndale, acid substratum----------	90	0-10	7.0-15	5.1-7.3	---	---
		10-19	3.0-12	5.1-7.3	---	---
		19-28	2.0-4.0	5.1-7.3	---	---
		28-80	0.0-3.0	5.1-7.3	---	---
1038B:						
Verndale, acid substratum----------	85	0-10	7.0-15	5.1-7.3	---	---
		10-19	3.0-12	5.1-7.3	---	---
		19-28	2.0-4.0	5.1-7.3	---	---
		28-80	0.0-3.0	5.1-7.3	---	---
1066B:						
Malardi----------	65	0-10	6.0-19	5.6-7.3	---	---
		10-15	1.0-12	5.6-7.3	---	---
		15-29	0.0-6.0	5.6-7.3	---	---
		29-80	0.0-3.0	7.0-8.4	0-30	---
Hawick----------	25	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---
1066C:						
Malardi----------	60	0-10	6.0-19	5.6-7.3	---	---
		10-15	1.0-12	5.6-7.3	---	---
		15-29	0.0-6.0	5.6-7.3	---	---
		29-80	0.0-3.0	7.0-8.4	0-30	---
Hawick----------	25	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---
1066E:						
Malardi----------	55	0-9	6.0-19	5.6-7.3	---	---
		9-14	1.0-12	5.6-7.3	---	---
		14-21	0.0-6.0	5.6-7.3	---	---
		21-80	0.0-3.0	7.0-8.4	0-30	---
Hawick----------	30	0-7	1.0-10	6.1-7.8	0-10	---
		7-11	1.0-5.0	6.1-7.8	0-10	---
		11-80	1.0-5.0	7.4-8.4	5-15	---
1072.						
Udorthents, shallow						

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1075:						
Klossner, ponded-----	40	0-26	50-150	5.6-7.4	0-5	---
		26-33	35-65	6.1-7.4	0-5	---
		33-40	20-40	6.1-7.4	0-5	---
		40-80	5.0-25	6.1-8.4	0-20	0-1
Muskego, ponded------	40	0-9	140-180	5.6-7.3	---	---
		9-36	150-190	5.6-7.3	---	---
		36-60	10-45	6.6-8.4	60-80	---
1080:						
Klossner, ponded-----	30	0-26	50-150	5.6-7.4	0-5	---
		26-33	35-65	6.1-7.4	0-5	---
		33-40	20-40	6.1-7.4	0-5	---
		40-80	5.0-25	6.1-8.4	0-20	0-1
Okoboji, ponded------	30	0-10	41-50	6.1-7.8	0-15	---
		10-52	41-45	6.6-7.8	0-15	---
		52-60	36-41	6.6-7.8	0-30	---
Glencoe, ponded------	30	0-42	20-40	6.1-7.8	0-5	---
		42-50	15-30	6.6-7.8	0-5	---
		50-60	10-20	7.4-8.4	10-20	0-1
1087B:						
Angus----------	55	0-8	10-24	5.6-7.3	---	---
		8-35	10-23	5.1-7.3	---	---
		35-40	8.0-18	6.1-7.8	5-20	---
		40-80	10-20	7.4-8.4	10-20	0-1
Malardi----------	30	0-10	6.0-19	5.6-7.3	---	---
		10-15	1.0-12	5.6-7.3	---	---
		15-29	0.0-6.0	5.6-7.3	---	---
		29-80	0.0-3.0	7.0-8.4	0-30	---
1094B:						
Angus----------	60	0-8	10-24	5.6-7.3	---	---
		8-35	10-23	5.1-7.3	---	---
		35-40	8.0-18	6.1-7.8	5-20	---
		40-80	10-20	7.4-8.4	10-20	0-1
Cordova----------	30	0-13	15-28	6.1-7.3	---	---
		13-33	15-25	5.1-6.5	---	---
		33-80	10-20	7.4-8.4	10-20	0-1
1099:						
Granby, very wet-----	85	0-12	5.0-20	5.6-7.3	---	---
		12-24	1.0-10	5.6-7.8	---	---
		24-60	1.0-3.0	6.6-8.4	0-20	---
1110:						
Isan----------	90	0-18	10-25	5.6-7.3	---	---
		18-29	2.0-10	5.1-6.5	---	---
		29-80	1.0-5.0	5.6-7.3	---	---
1156:						
Cordova----------	85	0-13	15-28	6.1-7.3	---	---
		13-33	15-25	5.1-6.5	---	---
		33-80	10-20	7.4-8.4	10-20	0-1

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1161:						
Barry----------	85	0-11	15-26	6.1-7.3	---	---
		11-33	8.0-17	6.1-7.3	---	---
		33-60	5.0-15	7.4-8.4	5-20	---
1163:						
Suckercreek, frequently flooded--	85	0-22	10-20	7.4-8.4	5-20	---
		22-80	1.0-10	7.4-8.4	5-25	---
1165:						
Lundlake, depressional--------	90	0-12	25-42	6.6-7.3	---	---
		12-36	14-25	6.6-7.3	---	---
		36-72	10-18	6.6-7.8	0-10	---
		72-80	5.0-10	7.4-7.8	10-20	0-1
1173:						
Muskego, frequently flooded----------	45	0-9	140-180	5.6-7.3	---	---
		9-36	150-190	5.6-7.3	---	---
		36-60	10-45	6.6-8.4	60-80	---
Klossner, frequently flooded----------	45	0-26	50-150	5.6-7.4	0-5	---
		26-33	35-65	6.1-7.4	0-5	---
		33-40	20-40	6.1-7.4	0-5	---
		40-80	5.0-25	6.1-8.4	0-20	0-1
1186:						
Forestcity----------	75	0-22	10-25	6.1-7.3	---	---
		22-43	15-25	6.1-7.3	---	---
		43-60	8.0-20	5.6-7.3	---	---
		60-80	5.0-12	7.4-7.8	10-20	0-1
Lundlake, depressional--------	20	0-20	20-38	6.6-7.3	---	---
		20-46	14-25	6.6-7.3	---	---
		46-54	10-18	6.6-7.8	0-10	---
		54-60	5.0-10	7.4-7.8	10-20	0-1
1196B:						
Lida----------	60	0-6	6.0-19	5.6-7.3	---	---
		6-8	1.0-10	5.6-7.3	---	---
		8-17	4.0-13	5.6-7.3	---	---
		17-25	1.0-4.0	5.6-7.3	---	---
		25-80	1.0-4.0	7.4-8.4	3-15	---
Two Inlets----------	30	0-9	2.0-8.0	5.6-7.3	---	---
		9-19	2.0-9.0	6.1-7.3	---	---
		19-80	0.0-2.0	7.4-8.4	5-30	---
1196C:						
Lida----------	55	0-6	6.0-19	5.6-7.3	---	---
		6-8	1.0-10	5.6-7.3	---	---
		8-17	4.0-13	5.6-7.3	---	---
		17-25	1.0-4.0	5.6-7.3	---	---
		25-80	1.0-4.0	7.4-8.4	3-15	---
Two Inlets----------	30	0-9	2.0-8.0	5.6-7.3	---	---
		9-19	2.0-9.0	6.1-7.3	---	---
		19-80	0.0-2.0	7.4-8.4	5-30	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1196E:						
Lida	50	0-6	6.0-19	5.6-7.3	---	---
		6-8	1.0-10	5.6-7.3	---	---
		8-17	4.0-13	5.6-7.3	---	---
		17-25	1.0-4.0	5.6-7.3	---	---
		25-80	1.0-4.0	7.4-8.4	3-15	---
Two Inlets	40	0-8	2.0-8.0	5.6-7.3	---	---
		8-20	2.0-9.0	6.1-7.3	---	---
		20-80	0.0-2.0	7.4-8.4	5-30	---
1197:						
Suckercreek, occasionally flooded	80	0-12	10-20	7.4-8.4	5-20	---
		12-80	1.0-10	7.4-8.4	5-25	---
1199:						
Klossner, ponded	45	0-26	50-150	5.6-7.4	0-5	---
		26-33	35-65	6.1-7.4	0-5	---
		33-40	20-40	6.1-7.4	0-5	---
		40-80	5.0-25	6.1-8.4	0-20	0-1
Lundlake, ponded	45	0-8	30-55	6.6-7.3	---	---
		8-26	20-34	6.6-7.3	---	---
		26-80	5.0-10	7.4-7.8	10-20	0-1
1203:						
Muskego, ponded	30	0-9	140-180	5.6-7.3	---	---
		9-36	150-190	5.6-7.3	---	---
		36-60	10-45	6.6-8.4	60-80	---
Blue Earth, ponded	30	0-50	30-70	7.4-8.4	5-20	---
		50-60	30-70	7.4-8.4	5-40	---
Houghton, ponded	30	0-80	100-200	4.5-7.3	---	---
1204B:						
Reedslake	85	0-12	16-23	5.6-7.3	---	---
		12-26	13-21	5.6-7.3	---	---
		26-48	10-20	7.4-8.4	15-25	0-1
		48-80	10-20	7.4-8.4	10-20	0-1
1207B:						
Reedslake	60	0-12	16-23	5.6-7.3	---	---
		12-26	13-21	5.6-7.3	---	---
		26-48	10-20	7.4-8.4	15-25	0-1
		48-80	10-20	7.4-8.4	10-20	0-1
Le Sueur	25	0-14	12-24	5.6-7.3	---	---
		14-40	11-25	5.1-7.3	---	---
		40-55	10-20	7.4-8.4	15-25	---
		55-80	10-20	7.4-8.4	10-20	0-1
1213C:						
Cokato, eroded	65	0-8	15-25	5.6-7.3	---	---
		8-23	15-20	5.6-7.3	---	---
		23-48	10-20	7.4-8.4	15-25	0-1
		48-80	10-20	7.4-8.4	10-20	0-1
Storden	20	0-7	11-18	7.4-8.4	5-30	---
		7-55	9.0-18	7.4-8.4	15-30	---
		55-80	10-20	7.4-8.4	10-20	0-1

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1213D:						
Cokato, eroded-------	60	0-8	15-25	5.6-7.3	---	---
		8-20	15-20	5.6-7.3	---	---
		20-40	10-20	7.4-8.4	15-25	0-1
		40-80	10-20	7.4-8.4	10-20	0-1
Storden----------	25	0-7	11-18	7.4-8.4	5-30	---
		7-55	9.0-18	7.4-8.4	15-30	---
		55-80	10-20	7.4-8.4	10-20	0-1
1220C:						
Cokato, eroded-------	50	0-8	15-25	5.6-7.3	---	---
		8-23	15-20	5.6-7.3	---	---
		23-48	10-20	7.4-8.4	15-25	0-1
		48-80	10-20	7.4-8.4	10-20	0-1
Storden----------	20	0-7	11-18	7.4-8.4	5-30	---
		7-55	9.0-18	7.4-8.4	15-30	---
		55-80	10-20	7.4-8.4	10-20	0-1
Hawick----------	15	0-10	1.0-10	6.1-7.8	0-10	---
		10-60	1.0-5.0	7.4-8.4	5-15	---
1223:						
Sandberg, MAP >25----	60	0-11	2.0-12	5.6-7.8	0-5	---
		11-35	1.0-6.0	6.1-7.8	0-5	---
		35-80	1.0-4.0	7.4-8.4	5-10	---
Arvilla, MAP >25-----	30	0-14	5.0-20	6.1-7.3	---	---
		14-17	5.0-15	6.1-7.3	---	---
		17-80	1.0-5.0	7.4-8.4	1-5	---
1224:						
Hubbard----------	60	0-11	6.0-16	5.1-7.3	---	---
		11-27	1.0-4.0	5.1-7.3	---	---
		27-80	0.0-4.0	5.6-7.8	0-15	---
Verndale, acid substratum----------	30	0-10	7.0-15	5.1-7.3	---	---
		10-16	3.0-12	5.1-7.3	---	---
		16-45	2.0-4.0	5.1-7.3	---	---
		45-80	0.0-3.0	5.1-7.3	---	---
1231:						
Hubbard----------	60	0-20	6.0-16	5.1-7.3	---	---
		20-32	1.0-4.0	5.1-7.3	---	---
		32-80	0.0-4.0	5.6-7.8	0-15	---
Mosford----------	30	0-13	7.0-9.0	5.1-7.3	---	---
		13-16	4.0-22	5.1-7.3	---	---
		16-35	1.0-3.0	5.1-7.3	---	---
		35-80	0.0-2.0	5.1-7.8	0-15	---
1255:						
Elkriver, occasionally flooded	80	0-10	6.0-19	5.1-7.3	---	---
		10-26	6.0-19	5.1-7.3	---	---
		26-32	4.0-15	5.6-7.8	0-8	---
		32-80	0.0-6.0	5.6-7.8	0-8	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1256:						
Cantlin----------	90	0-8	1.0-10	5.1-6.0	---	---
		8-22	2.0-6.0	5.1-6.0	---	---
		22-80	1.0-3.0	5.1-6.5	---	---
1257:						
Elkriver, rarely flooded----------	55	0-10	6.0-19	5.1-7.3	---	---
		10-35	6.0-19	5.1-7.3	---	---
		35-39	4.0-15	5.6-7.8	0-8	---
		39-80	0.0-6.0	5.6-7.8	0-8	---
Mosford, rarely flooded----------	35	0-11	7.0-9.0	5.1-7.3	---	---
		11-16	4.0-22	5.1-7.3	---	---
		16-25	1.0-3.0	5.1-7.3	---	---
		25-80	0.0-2.0	5.1-7.8	0-15	---
1260B:						
Stonelake----------	55	0-8	1.0-7.0	5.1-6.5	---	---
		8-30	0.0-2.0	5.1-6.5	---	---
		30-80	0.0-2.0	5.1-7.4	0-10	---
Nebish, moderately wet----------	30	0-6	4.0-14	5.6-7.3	---	---
		6-9	3.0-8.0	5.6-7.3	---	---
		9-43	10-18	5.6-7.3	---	---
		43-80	9.0-16	7.4-7.8	5-25	---
1260C:						
Stonelake----------	55	0-7	1.0-7.0	5.1-6.5	---	---
		7-20	0.0-2.0	5.1-6.5	---	---
		20-42	0.0-2.0	5.1-6.5	---	---
		42-80	0.0-2.0	5.1-7.8	0-10	---
Nebish----------	30	0-3	4.0-14	5.6-7.3	---	---
		3-10	3.0-8.0	5.6-7.3	---	---
		10-29	10-18	5.6-7.3	---	---
		29-80	9.0-16	7.4-7.8	5-25	---
1260E:						
Stonelake----------	60	0-5	2.0-14	5.1-6.5	---	---
		5-11	0.0-2.0	5.1-6.5	---	---
		11-20	0.0-2.0	5.1-6.5	---	---
		20-80	0.0-2.0	5.1-7.8	0-10	---
Nebish----------	25	0-5	4.0-14	5.6-7.3	---	---
		5-9	3.0-8.0	5.6-7.3	---	---
		9-27	10-18	5.6-7.3	---	---
		27-80	9.0-16	7.4-7.8	5-25	---
1288:						
Seelyeville, ponded--	45	0-15	140-200	5.1-7.3	---	---
		15-80	140-200	5.1-7.3	---	---
Markey, ponded-------	45	0-27	110-170	4.5-7.3	---	---
		27-32	1.0-3.0	5.6-7.3	---	---
		32-80	1.0-3.0	5.6-7.3	---	---
1356.						
Water, miscellaneous						

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1362B:						
Angus	85	0-8	10-24	5.6-7.3	---	---
		8-35	10-23	5.1-7.3	---	---
		35-40	8.0-18	6.1-7.8	5-20	---
		40-80	10-20	7.4-8.4	10-20	0-1
1368:						
Southhaven	90	0-48	15-34	5.1-7.3	---	---
		48-62	7.0-22	5.1-7.3	---	---
		62-66	2.0-4.0	5.1-7.3	---	---
		66-80	1.0-3.0	5.6-7.8	0-10	---
1377B:						
Dorset	70	0-11	10-23	5.6-7.3	---	---
		11-19	7.0-17	5.6-7.3	---	---
		19-32	3.0-8.0	6.6-8.4	0-30	---
		32-80	0.0-5.0	7.4-8.4	5-15	---
Two Inlets	20	0-9	2.0-8.0	5.6-7.3	---	---
		9-19	2.0-9.0	6.1-7.3	---	---
		19-80	0.0-2.0	7.4-8.4	5-30	---
1377C:						
Dorset	50	0-11	10-23	5.6-7.3	---	---
		11-19	7.0-17	5.6-7.3	---	---
		19-32	3.0-8.0	6.6-8.4	0-30	---
		32-80	0.0-5.0	7.4-8.4	5-15	---
Two Inlets	35	0-9	2.0-8.0	5.6-7.3	---	---
		9-19	2.0-9.0	6.1-7.3	---	---
		19-80	0.0-2.0	7.4-8.4	5-30	---
1377D:						
Dorset	45	0-9	10-23	5.6-7.3	---	---
		9-14	7.0-17	5.6-7.3	---	---
		14-25	3.0-8.0	6.6-8.4	0-30	---
		25-80	0.0-5.0	7.4-8.4	5-15	---
Two Inlets	40	0-9	2.0-8.0	5.6-7.3	---	---
		9-19	2.0-9.0	6.1-7.3	---	---
		19-80	0.0-2.0	7.4-8.4	5-30	---
1377E:						
Dorset	45	0-9	10-23	5.6-7.3	---	---
		9-14	7.0-17	5.6-7.3	---	---
		14-27	3.0-8.0	6.6-8.4	0-30	---
		27-80	0.0-5.0	7.4-8.4	5-15	---
Two Inlets	45	0-8	2.0-8.0	5.6-7.3	---	---
		8-20	2.0-9.0	6.1-7.3	---	---
		20-80	0.0-2.0	7.4-8.4	5-30	---
1378:						
Fordum, occasionally flooded	85	0-9	10-45	5.1-7.3	---	---
		9-38	3.0-20	5.1-7.3	---	---
		38-80	2.0-6.0	5.6-7.3	---	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1379B:						
Dorset----------	65	0-9	9.0-23	5.6-7.3	---	---
		9-21	7.0-17	5.6-7.3	---	---
		21-26	3.0-8.0	6.6-8.4	0-30	---
		26-80	0.0-5.0	7.4-8.4	5-15	---
Almora----------	25	0-10	12-20	5.6-7.3	---	---
		10-14	8.0-14	5.6-7.3	---	---
		14-36	10-17	5.6-7.3	---	---
		36-41	2.0-7.0	5.6-7.8	0-5	---
		41-80	1.0-3.0	7.4-8.4	5-30	---
1380A:						
Bygland, MAP >25-----	85	0-9	15-35	6.1-7.3	---	---
		9-23	15-30	6.1-7.8	0-5	---
		23-27	10-25	7.4-8.4	5-20	---
		27-80	10-20	7.4-8.4	5-15	---
1380B:						
Bygland, MAP >25-----	70	0-9	15-35	6.1-7.3	---	---
		9-23	15-30	6.1-7.8	0-5	---
		23-27	10-25	7.4-8.4	5-20	---
		27-80	10-20	7.4-8.4	5-15	---
1380C:						
Bygland, MAP >25-----	70	0-7	15-35	6.1-7.3	---	---
		7-20	15-30	6.1-7.8	0-5	---
		20-26	10-25	7.4-8.4	5-20	---
		26-80	10-20	7.4-8.4	5-15	---
1381:						
Lindaas, morainic----	80	0-16	23-38	6.6-7.3	---	---
		16-32	25-54	6.6-7.3	---	---
		32-80	16-34	7.4-8.4	10-30	---
1383A:						
Shorewood, moderately wet----------	95	0-17	30-45	5.6-7.3	---	---
		17-39	25-45	5.1-7.3	---	---
		39-60	10-20	7.4-8.4	10-20	0-1
1388B:						
Terril, moderately wet----------	85	0-27	20-25	6.1-7.3	---	---
		27-40	20-25	6.1-7.3	---	---
		40-63	15-25	6.1-7.3	---	---
		63-80	10-20	7.4-8.4	10-20	0-1
1406:						
Medo, ponded---------	30	0-20	40-100	6.1-7.8	0-5	---
		20-34	20-55	6.1-7.8	0-5	---
		34-60	1.0-9.0	6.1-8.4	0-15	---
Dassel, ponded-------	30	0-23	10-40	5.6-7.3	---	---
		23-31	3.0-10	5.6-7.3	---	---
		31-60	1.0-5.0	6.1-7.8	0-5	---
Biscay, ponded-------	30	0-24	20-35	6.1-7.8	0-10	---
		24-29	12-25	6.6-7.8	0-15	---
		29-60	1.0-5.0	7.4-8.4	5-30	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
1408B:						
Angus----------	45	0-8	10-24	5.6-7.3	---	---
		8-35	10-23	5.1-7.3	---	---
		35-40	8.0-18	6.1-7.8	5-20	---
		40-80	10-20	7.4-8.4	10-20	0-1
Kilkenny----------	40	0-11	20-30	5.6-7.3	---	---
		11-35	25-35	5.1-7.3	---	---
		35-80	10-20	7.4-8.4	10-20	0-1
1438B:						
Braham, moderately wet----------	85	0-8	2.0-9.0	5.6-7.3	---	---
		8-24	1.0-5.0	5.6-7.3	---	---
		24-42	7.0-21	5.1-7.3	---	---
		42-60	7.0-21	7.4-8.4	10-20	0-1
1443:						
Belleville----------	85	0-11	8.0-29	6.1-7.3	---	---
		11-27	3.0-8.0	6.1-7.3	---	---
		27-48	10-20	6.1-7.3	---	---
		48-80	10-20	7.4-8.4	10-20	0-1
1901B:						
Angus----------	60	0-8	10-24	5.6-7.3	---	---
		8-35	10-23	5.1-7.3	---	---
		35-40	8.0-18	6.1-7.8	5-20	---
		40-80	10-20	7.4-8.4	10-20	0-1
Le Sueur----------	30	0-14	12-24	5.6-7.3	---	---
		14-40	11-25	5.1-7.3	---	---
		40-55	10-20	7.4-8.4	15-25	---
		55-80	10-20	7.4-8.4	10-20	0-1
1931:						
Essexville----------	75	0-15	13-27	7.4-8.4	5-30	---
		15-30	1.0-8.0	7.4-8.4	5-30	---
		30-80	10-20	7.4-8.4	10-20	0-1
1942:						
Forada, depressional	85	0-10	14-45	6.1-7.3	---	---
		10-21	4.0-12	6.1-7.8	0-15	---
		21-60	0.0-5.0	6.6-8.4	0-15	---
1946:						
Fordum, frequently flooded----------	70	0-7	10-35	5.1-7.3	---	---
		7-28	3.0-20	5.1-7.3	---	---
		28-80	2.0-6.0	5.6-7.3	---	---
Winterfield, frequently flooded--	20	0-8	2.0-15	5.6-7.3	---	---
		8-20	1.0-10	5.6-7.3	---	---
		20-80	1.0-5.0	5.6-7.3	---	---
1975:						
Oylen----------	90	0-10	8.0-14	6.1-7.3	---	---
		10-18	5.0-13	6.1-7.3	---	---
		18-38	1.0-3.0	6.1-7.3	---	---
		38-80	0.0-2.0	6.6-8.4	0-15	---

Table 19.--Chemical Properties of the Soils--Continued

Map symbol and soil name	Pct. of map unit	Depth	Cation-exchange capacity	Soil reaction	Calcium carbon-ate	Gypsum
		In	meq/100 g	pH	Pct	Pct
W. Water						

Table 20.--Soil Moisture Status by Depth

(See text for definitions of terms used in this table. Depths of layers are in feet)

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
7A:													
Hubbard-------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
7B:													
Hubbard-------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
7C:													
Hubbard-------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
8B:													
Sparta--------	A	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-0.7: Dry 0.7-5.0: Moist	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---
35:													
Blue Earth, depressional	B/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
74B:													
Dickinson-----	B	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-0.7: Dry 0.7-5.0: Moist	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-5.0: Moist ---
86:													
Canisteo------	B/D	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 2.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
106C2:													
Lester, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
106D2:													
Lester, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
106E:													
Lester--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
109:													
Cordova-------	B/D	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
114:													
Glencoe, depressional	B/D	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet
138:													
Lerdal--------	C	0.0-3.0: Moist 3.0-5.0: Wet	0.0-4.9: Moist 4.9-5.0: Wet	0.0-1.8: Moist 1.8-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.8: Moist 1.8-5.0: Wet	0.0-3.0: Moist 3.0-5.0: Wet	0.0-4.9: Moist 4.9-5.0: Wet	0.0-3.9: Moist 3.9-5.0: Wet	0.0-2.3: Moist 2.3-5.0: Wet	0.0-1.6: Moist 1.6-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet
158A:													
Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
158B:													
Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
158C:													
Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
158E:													
Zimmerman-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
169C:													
Braham--------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
181:													
Litchfield----	B	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.3: Moist 2.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet
229:													
Waldorf-------	C/D	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
231C:													
Lester--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
231D:													
Lester--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
235:													
Nessel--------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.0: Moist 4.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.0: Moist 5.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.5: Moist 4.5-6.7: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
239:													
Le Sueur------	B	0.0-3.9: Moist 3.9-6.7: Wet	0.0-5.9: Moist 5.9-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-5.9: Moist 5.9-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet
247:													
Linder--------	B	0.0-2.0: Moist 2.0-5.0: Wet	0.0-2.6: Moist 2.6-5.0: Wet	0.0-1.6: Moist 1.6-5.0: Wet	0.0-1.3: Moist 1.3-5.0: Wet	0.0-1.6: Moist 1.6-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-2.6: Moist 2.6-5.0: Wet	0.0-3.0: Moist 3.0-5.0: Wet	0.0-2.6: Moist 2.6-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.6: Moist 1.6-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet
255:													
Mayer---------	B/D	0.0-2.5: Moist 2.5-5.0: Wet	0.0-3.3: Moist 3.3-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.7: Moist 0.7-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-3.3: Moist 3.3-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet
256:													
Mazaska-------	C/D	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
258B:													
Sandberg------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
258C:													
Sandberg------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
258E:													
Sandberg------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
260:													
Duelm---------	A	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet
261:													
Isan, depressional	B/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet
286B:													
Shorewood-----	C	0.0-5.0: Moist --- --- ---	0.0-5.0: Moist --- --- ---	0.0-3.0: Moist 3.0-4.0: Wet 4.0-4.4: Moist 4.4-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet --- ---	0.0-2.5: Moist 2.5-5.0: Wet --- ---	0.0-3.5: Moist 3.5-5.0: Wet --- ---	0.0-5.0: Moist --- --- ---	0.0-5.0: Moist --- --- ---	0.0-5.0: Moist --- --- ---	0.0-5.0: Moist --- --- ---	0.0-4.6: Moist 4.6-5.0: Wet --- ---	0.0-4.6: Moist 4.6-5.0: Wet --- ---
294A:													
Rasset--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
323:													
Shields-------	C	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-3.0: Moist 3.0-3.4: Wet 3.4-6.7: Moist	0.0-1.0: Moist 1.0-3.4: Wet 3.4-6.7: Moist	0.0-1.5: Moist 1.5-3.4: Wet 3.4-6.7: Moist	0.0-2.5: Moist 2.5-3.4: Wet 3.4-6.7: Moist	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-3.0: Moist 3.0-3.4: Wet 3.4-6.7: Moist	0.0-2.7: Moist 2.7-3.4: Wet 3.4-6.7: Moist	0.0-3.0: Moist 3.0-3.4: Wet 3.4-6.7: Moist
327A:													
Dickman-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
327B:													
Dickman-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
375:													
Forada--------	B/D	0.0-2.5: Moist 2.5-5.0: Wet	0.0-3.3: Moist 3.3-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.7: Moist 0.7-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-3.3: Moist 3.3-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet
392:													
Biscay--------	B/D	0.0-2.5: Moist 2.5-5.0: Wet	0.0-3.3: Moist 3.3-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.7: Moist 0.7-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-3.3: Moist 3.3-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet
406:													
Dorset--------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
414:													
Hamel---------	B/D	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
441:													
Almora--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
461B:													
Koronis-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
461C2:													
Koronis, eroded-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
461E:													
Koronis-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
511:													
Marcellon, MAP <30------	B	0.0-4.0: Moist 4.0-5.0: Wet	0.0-4.5: Moist 4.5-5.0: Wet	0.0-3.0: Moist 3.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-3.0: Moist 3.0-5.0: Wet	0.0-4.9: Moist 4.9-5.0: Wet	0.0-5.0: Moist ---	0.0-4.9: Moist 4.9-5.0: Wet	0.0-4.0: Moist 4.0-5.0: Wet	0.0-3.0: Moist 3.0-5.0: Wet	0.0-3.3: Moist 3.3-5.0: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
523:													
Houghton, drained------	A/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
525:													
Muskego, surface drained------	A/D	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet
539:													
Klossner, drained------	A/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
540:													
Seelyeville, surface drained------	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet
543:													
Markey, surface drained------	A/D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet
548:													
Medo, drained	A/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
603:													
Hanlon, occasionally flooded------	B	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-2.8: Moist 2.8-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet
611D:													
Hawick--------	A	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
708:													
Rushlake------	A	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet
740:													
Hamel---------	B/D	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Glencoe, depressional	B/D	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet
768:													
Mosford-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
771:													
Elkriver, rarely flooded------	B	0.0-5.0: Moist 5.0-6.7: Wet	0.0-5.5: Moist 5.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-5.0: Moist 5.0-6.7: Wet	0.0-6.0: Moist 6.0-6.7: Wet	0.0-6.7: Moist ---	0.0-5.0: Moist 5.0-6.7: Wet	0.0-4.5: Moist 4.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
783C2:													
Lester, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Kilkenny, eroded-------	C	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-2.5: Moist 2.5-3.5: Wet 3.5-6.7: Moist	0.0-2.8: Moist 2.8-4.0: Wet 4.0-6.7: Moist	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---
792:													
Fordum, frequently flooded------	D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.2: Moist 1.2-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
799:													
Seelyeville, frequently flooded------	A/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.2: Moist 1.2-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
Bowstring, frequently flooded------	A/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.2: Moist 1.2-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
804B:													
Koronis-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Sunburg-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
804C2:													
Koronis, eroded-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Sunburg-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
804D2:													
Koronis, eroded-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Sunburg-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
804E:													
Koronis-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Sunburg-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Hawick--------	A	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
807D2:													
Koronis, eroded-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Sunburg-------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
875B:													
Estherville---	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
875C:													
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Estherville---	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
896B:													
Kingsley------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Gotham--------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
896C:													
Kingsley------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Gotham--------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
945C2:													
Lester, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Storden, eroded-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
945D2:													
Lester, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Storden, eroded-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
956:													
Canisteo------	B/D	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 2.0-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
Glencoe, depressional	B/D	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet
978:													
Cordova-------	B/D	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
Rolfe, depressional	C/D	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.7: Moist 0.7-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.8: Moist 0.8-5.0: Wet
1000:													
Arvilla, MAP >25------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1015. Udipsamments (cut and fill land)													
1016. Udorthents, loamy													

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1023C:													
Lester, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Malardi-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1023D:													
Lester, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Malardi-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1026B:													
Lizzie, moderately wet----------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
1027.													
Udorthents, wet substratum													
1030:													
Pits, gravel.													
Udipsamments.													
1035B:													
Crowfork------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1035C:													
Crowfork------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1035D:													
Crowfork------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1036B:													
Angus---------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
1037:													
Eckvoll, MAP >25------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-3.0: Moist 3.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.5: Moist 4.5-6.7: Wet
1038A:													
Verndale, acid substratum---	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1038B:													
Verndale, acid substratum---	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1066B:													
Malardi-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1066C:													
Malardi-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1066E:													
Malardi-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Hawick--------	A	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1072.													
Udorthents, shallow													
1075:													
Klossner, ponded-------	A/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Muskego, ponded-------	A/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet
1080:													
Klossner, ponded-------	A/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Okoboji, ponded-------	C/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet
Glencoe, ponded-------	B/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet
1087B:													
Angus---------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
Malardi-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1094B:													
Angus---------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
Cordova-------	B/D	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
1099:													
Granby, very wet----------	A/D	0.0-1.1: Moist 1.1-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.8: Moist 1.8-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.8: Moist 0.8-5.0: Wet
1110:													
Isan----------	B/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.7: Moist 1.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet
1156:													
Cordova-------	B/D	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
1161:													
Barry---------	B/D	0.0-2.0: Moist 2.0-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-0.8: Moist 0.8-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.8: Moist 0.8-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-0.7: Moist 0.7-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet
1163:													
Suckercreek, frequently flooded------	D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.2: Moist 1.2-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1165:													
Lundlake, depressional	B/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
1173:													
Muskego, frequently flooded	D	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet
Klossner, frequently flooded	D	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet
1186:													
Forestcity	B/D	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet
Lundlake, depressional	B/D	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-2.0: Moist 2.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet
1196B:													
Lida	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Two Inlets	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1196C:													
Lida----------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Two Inlets----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1196E:													
Lida----------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Two Inlets----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1197:													
Suckercreek, occasionally flooded------	D	0.0-1.8: Moist 1.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet
1199:													
Klossner, ponded-------	A/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Lundlake, ponded-------	B/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
1203:													
Muskego, ponded-------	A/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet
Blue Earth, ponded-------	B/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1203:													
Houghton, ponded-------	A/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
1204B:													
Reedslake-----	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
1207B:													
Reedslake-----	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
Le Sueur------	B	0.0-3.9: Moist 3.9-6.7: Wet	0.0-6.7: Moist ---	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-6.7: Moist ---	0.0-3.9: Moist 3.9-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet
1213C:													
Cokato, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Storden-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1213D:													
Cokato, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Storden-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1220C:													
Cokato, eroded	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
Storden-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1220C:													
Hawick--------	A	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
1223:													
Sandberg, MAP >25------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Arvilla, MAP >25------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1224:													
Hubbard-------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Verndale, acid substratum---	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1231:													
Hubbard-------	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Mosford-------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1255:													
Elkriver, occasionally flooded------	B	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.5: Moist 4.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1256:													
Cantlin-------	A	0.0-5.2: Moist 5.2-6.7: Wet	0.0-5.5: Moist 5.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-5.0: Moist 5.0-6.7: Wet	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.8: Moist 4.8-6.7: Wet
1257:													
Elkriver, rarely flooded------	B	0.0-5.0: Moist 5.0-6.7: Wet	0.0-5.5: Moist 5.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-5.0: Moist 5.0-6.7: Wet	0.0-6.0: Moist 6.0-6.7: Wet	0.0-6.7: Moist ---	0.0-5.0: Moist 5.0-6.7: Wet	0.0-4.5: Moist 4.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet
Mosford, rarely flooded------	B	0.0-5.0: Moist 5.0-6.7: Wet	0.0-5.5: Moist 5.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-5.0: Moist 5.0-6.7: Wet	0.0-6.0: Moist 6.0-6.7: Wet	0.0-6.7: Moist ---	0.0-5.0: Moist 5.0-6.7: Wet	0.0-4.5: Moist 4.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet
1260B:													
Stonelake-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Nebish, moderately wet----------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
1260C:													
Stonelake-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Nebish--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1260E:													
Stonelake-----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
Nebish--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist
1288:													
Seelyeville, ponded-------	A/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
Markey, ponded	A/D	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet	0.0-6.7: Wet
1356.													
Water, miscellaneous													
1362B:													
Angus---------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
1368:													
Southhaven----	B	0.0-5.2: Moist 5.2-6.7: Wet	0.0-5.5: Moist 5.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-5.0: Moist 5.0-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.8: Moist 4.8-6.7: Wet
1377B:													
Dorset--------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Two Inlets----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1377C:													
Dorset--------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Two Inlets----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1377D:													
Dorset--------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Two Inlets----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1377E:													
Dorset--------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Two Inlets----	A	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-0.7: Dry 0.7-6.7: Moist	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---
1378:													
Fordum, occasionally flooded------	D	0.0-1.8: Moist 1.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet
1379B:													
Dorset--------	B	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist	0.0-5.0: Moist
Almora--------	B	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist	0.0-6.7: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1380A: Bygland, MAP >25	C	0.0-3.8: Moist 3.8-6.0: Wet 6.0-6.7: Moist	0.0-4.0: Moist 4.0-6.0: Wet 6.0-6.7: Moist	0.0-3.5: Moist 3.5-6.0: Wet 6.0-6.7: Moist	0.0-2.5: Moist 2.5-6.0: Wet 6.0-6.7: Moist	0.0-2.5: Moist 2.5-6.0: Wet 6.0-6.7: Moist	0.0-3.0: Moist 3.0-6.0: Wet 6.0-6.7: Moist	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-4.0: Moist 4.0-6.0: Wet 6.0-6.7: Moist	0.0-3.0: Moist 3.0-6.0: Wet 6.0-6.7: Moist	0.0-3.3: Moist 3.3-6.0: Wet 6.0-6.7: Moist
1380B: Bygland, MAP >25	C	0.0-4.5: Moist 4.5-6.0: Wet 6.0-6.7: Moist	0.0-5.0: Moist 5.0-6.0: Wet 6.0-6.7: Moist	0.0-4.0: Moist 4.0-6.0: Wet 6.0-6.7: Moist	0.0-3.0: Moist 3.0-6.0: Wet 6.0-6.7: Moist	0.0-3.5: Moist 3.5-6.0: Wet 6.0-6.7: Moist	0.0-4.0: Moist 4.0-6.0: Wet 6.0-6.7: Moist	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-4.5: Moist 4.5-6.0: Wet 6.0-6.7: Moist	0.0-3.5: Moist 3.5-6.0: Wet 6.0-6.7: Moist	0.0-4.0: Moist 4.0-6.0: Wet 6.0-6.7: Moist
1380C: Bygland, MAP >25	C	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-3.0: Moist 3.0-6.0: Wet 6.0-6.7: Moist	0.0-3.5: Moist 3.5-6.0: Wet 6.0-6.7: Moist	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---	0.0-6.7: Moist --- ---
1381: Lindaas, morainic	C/D	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.8: Moist 0.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
1383A: Shorewood, moderately wet	C	0.0-5.0: Moist --- ---	0.0-5.0: Moist --- ---	0.0-3.0: Moist 3.0-3.4: Wet 3.4-5.0: Moist	0.0-1.0: Moist 1.0-3.4: Wet 3.4-5.0: Moist	0.0-1.5: Moist 1.5-3.4: Wet 3.4-5.0: Moist	0.0-2.5: Moist 2.5-3.4: Wet 3.4-5.0: Moist	0.0-5.0: Moist --- ---	0.0-5.0: Moist --- ---	0.0-5.0: Moist --- ---	0.0-3.0: Moist 3.0-3.4: Wet 3.4-5.0: Moist	0.0-2.7: Moist 2.7-3.4: Wet 3.4-5.0: Moist	0.0-3.0: Moist 3.0-3.4: Wet 3.4-5.0: Moist

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1388B:													
Terril, moderately wet----------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
1406:													
Medo, ponded--	A/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet
Dassel, ponded	B/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet
Biscay, ponded	B/D	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet	0.0-5.0: Wet
1408B:													
Angus---------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
Kilkenny------	C	0.0-4.9: Moist 4.9-6.7: Wet --- ---	0.0-6.7: Moist --- --- ---	0.0-3.0: Moist 3.0-4.0: Wet 4.0-4.4: Moist 4.4-6.7: Wet	0.0-1.7: Moist 1.7-6.7: Wet --- ---	0.0-3.0: Moist 3.0-6.7: Wet --- ---	0.0-4.4: Moist 4.4-6.7: Wet --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-6.7: Moist --- --- ---	0.0-5.2: Moist 5.2-6.7: Wet --- ---	0.0-4.6: Moist 4.6-6.7: Wet --- ---	0.0-4.6: Moist 4.6-6.7: Wet --- ---
1438B:													
Braham, moderately wet----------	B	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-3.5: Moist 3.5-5.0: Wet	0.0-2.5: Moist 2.5-5.0: Wet	0.0-3.0: Moist 3.0-5.0: Wet	0.0-5.0: Moist ---	0.0-5.0: Moist ---	0.0-0.7: Dry 0.7-5.0: Moist	0.0-5.0: Moist ---	0.0-4.6: Moist 4.6-5.0: Wet	0.0-3.5: Moist 3.5-5.0: Wet	0.0-4.5: Moist 4.5-5.0: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1443:													
Belleville----	B/D	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.3: Moist 1.3-6.7: Wet
1901B:													
Angus---------	B	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-4.6: Moist 4.6-6.7: Wet	0.0-3.6: Moist 3.6-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-6.7: Moist ---	0.0-5.9: Moist 5.9-6.7: Wet	0.0-4.6: Moist 4.6-6.7: Wet	0.0-5.2: Moist 5.2-6.7: Wet
Le Sueur------	B	0.0-3.9: Moist 3.9-6.7: Wet	0.0-6.7: Moist ---	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.6: Moist 1.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-3.9: Moist 3.9-6.7: Wet	0.0-6.7: Moist ---	0.0-3.9: Moist 3.9-6.7: Wet	0.0-2.6: Moist 2.6-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.3: Moist 2.3-6.7: Wet
1931:													
Essexville----	B/D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.7: Moist 1.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-0.5: Moist 0.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet
1942:													
Forada, depressional	B/D	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.5: Moist 1.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-5.0: Wet ---	0.0-0.5: Moist 0.5-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-1.0: Moist 1.0-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet	0.0-0.5: Moist 0.5-5.0: Wet
1946:													
Fordum, frequently flooded------	D	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-6.7: Wet ---	0.0-0.8: Moist 0.8-6.7: Wet	0.0-1.2: Moist 1.2-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet	0.0-0.7: Moist 0.7-6.7: Wet	0.0-1.0: Moist 1.0-6.7: Wet
Winterfield, frequently flooded------	A	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-1.5: Moist 1.5-6.7: Wet	0.0-1.8: Moist 1.8-6.7: Wet	0.0-2.0: Moist 2.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.5: Moist 4.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet

Table 20.--Soil Moisture Status by Depth--Continued

Map symbol and component name	Hydro-logic group	January	February	March	April	May	June	July	August	September	October	November	December
1975:													
Oylen---------	B	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-2.5: Moist 2.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-4.0: Moist 4.0-6.7: Wet	0.0-3.5: Moist 3.5-6.7: Wet	0.0-3.0: Moist 3.0-6.7: Wet	0.0-3.3: Moist 3.3-6.7: Wet
W.													
Water													

Table 21.--Flooding Frequency and Duration

(See text for definitions of terms used in this table. Absence of an entry indicates that no estimate was made)

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
7A:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
7B:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
7C:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
8B:												
Sparta	None	None	None	None	None	None	None	None	None	None	None	None
35:												
Blue Earth, depressional	None	None	None	None	None	None	None	None	None	None	None	None
74B:												
Dickinson	None	None	None	None	None	None	None	None	None	None	None	None
86:												
Canisteo	None	None	None	None	None	None	None	None	None	None	None	None
106C2:												
Lester, eroded	None	None	None	None	None	None	None	None	None	None	None	None
106D2:												
Lester, eroded	None	None	None	None	None	None	None	None	None	None	None	None
106E:												
Lester	None	None	None	None	None	None	None	None	None	None	None	None
109:												
Cordova	None	None	None	None	None	None	None	None	None	None	None	None
114:												
Glencoe, depressional	None	None	None	None	None	None	None	None	None	None	None	None
138:												
Lerdal	None	None	None	None	None	None	None	None	None	None	None	None
158A:												
Zimmerman	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
158B:												
Zimmerman-------	None	None	None	None	None	None	None	None	None	None	None	None
158C:												
Zimmerman-------	None	None	None	None	None	None	None	None	None	None	None	None
158E:												
Zimmerman-------	None	None	None	None	None	None	None	None	None	None	None	None
169C:												
Braham----------	None	None	None	None	None	None	None	None	None	None	None	None
181:												
Litchfield------	None	None	None	None	None	None	None	None	None	None	None	None
229:												
Waldorf---------	None	None	None	None	None	None	None	None	None	None	None	None
231C:												
Lester----------	None	None	None	None	None	None	None	None	None	None	None	None
231D:												
Lester----------	None	None	None	None	None	None	None	None	None	None	None	None
235:												
Nessel----------	None	None	None	None	None	None	None	None	None	None	None	None
239:												
Le Sueur--------	None	None	None	None	None	None	None	None	None	None	None	None
247:												
Linder----------	None	None	None	None	None	None	None	None	None	None	None	None
255:												
Mayer-----------	None	None	None	None	None	None	None	None	None	None	None	None
256:												
Mazaska---------	None	None	None	None	None	None	None	None	None	None	None	None
258B:												
Sandberg--------	None	None	None	None	None	None	None	None	None	None	None	None
258C:												
Sandberg--------	None	None	None	None	None	None	None	None	None	None	None	None
258E:												
Sandberg--------	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
260:												
Duelm	None	None	None	None	None	None	None	None	None	None	None	None
261:												
Isan, depressional	None	None	None	None	None	None	None	None	None	None	None	None
286B:												
Shorewood	None	None	None	None	None	None	None	None	None	None	None	None
294A:												
Rasset	None	None	None	None	None	None	None	None	None	None	None	None
323:												
Shields	None	None	None	None	None	None	None	None	None	None	None	None
327A:												
Dickman	None	None	None	None	None	None	None	None	None	None	None	None
327B:												
Dickman	None	None	None	None	None	None	None	None	None	None	None	None
375:												
Forada	None	None	None	None	None	None	None	None	None	None	None	None
392:												
Biscay	None	None	None	None	None	None	None	None	None	None	None	None
406:												
Dorset	None	None	None	None	None	None	None	None	None	None	None	None
414:												
Hamel	None	None	None	None	None	None	None	None	None	None	None	None
441:												
Almora	None	None	None	None	None	None	None	None	None	None	None	None
461B:												
Koronis	None	None	None	None	None	None	None	None	None	None	None	None
461C2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
461E:												
Koronis	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
511:												
Marcellon, MAP <30	None	None	None	None	None	None	None	None	None	None	None	None
523:												
Houghton, drained	None	None	None	None	None	None	None	None	None	None	None	None
525:												
Muskego, surface drained	None	None	None	None	None	None	None	None	None	None	None	None
539:												
Klossner, drained	None	None	None	None	None	None	None	None	None	None	None	None
540:												
Seelyeville, surface drained	None	None	None	None	None	None	None	None	None	None	None	None
543:												
Markey, surface drained	None	None	None	None	None	None	None	None	None	None	None	None
548:												
Medo, drained	None	None	None	None	None	None	None	None	None	None	None	None
603:												
Hanlon, occasionally flooded	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Very brief	Occasional Very brief	None	None	None	None
611D:												
Hawick	None	None	None	None	None	None	None	None	None	None	None	None
708:												
Rushlake	None	None	None	None	None	None	None	None	None	None	None	None
740:												
Hamel	None	None	None	None	None	None	None	None	None	None	None	None
Glencoe, depressional	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
768:												
Mosford	None	None	None	None	None	None	None	None	None	None	None	None
771:												
Elkriver, rarely flooded	None	None	Rare Very brief	Rare Very brief	Rare Very brief	Rare Very brief	None	None	None	None	None	None
783C2:												
Lester, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Kilkenny, eroded	None	None	None	None	None	None	None	None	None	None	None	None
792:												
Fordum, frequently flooded	None	None	Frequent Long	Frequent Long	Frequent Long	Frequent Long	Occasional Brief	Occasional Brief	None	None	None	None
799:												
Seelyeville, frequently flooded	None	None	Frequent Long	Frequent Long	Frequent Long	Frequent Long	Occasional Brief	Occasional Brief	None	None	None	None
Bowstring, frequently flooded	None	None	Frequent Long	Frequent Long	Frequent Long	Frequent Long	Occasional Brief	Occasional Brief	None	None	None	None
804B:												
Koronis	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg	None	None	None	None	None	None	None	None	None	None	None	None
Hawick	None	None	None	None	None	None	None	None	None	None	None	None
804C2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg	None	None	None	None	None	None	None	None	None	None	None	None
Hawick	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
804D2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
804E:												
Koronis---------	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
807D2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None
875B:												
Estherville-----	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
875C:												
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
Estherville-----	None	None	None	None	None	None	None	None	None	None	None	None
896B:												
Kingsley--------	None	None	None	None	None	None	None	None	None	None	None	None
Gotham----------	None	None	None	None	None	None	None	None	None	None	None	None
896C:												
Kingsley--------	None	None	None	None	None	None	None	None	None	None	None	None
Gotham----------	None	None	None	None	None	None	None	None	None	None	None	None
945C2:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Storden, eroded	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
945D2:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Storden, eroded	None	None	None	None	None	None	None	None	None	None	None	None
956:												
Canisteo--------	None	None	None	None	None	None	None	None	None	None	None	None
Glencoe, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
978:												
Cordova---------	None	None	None	None	None	None	None	None	None	None	None	None
Rolfe, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
1000:												
Arvilla, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1015:												
Udipsamments (cut and fill land)----------	None	None	None	None	None	None	None	None	None	None	None	None
1016:												
Udorthents, loamy----------	None	None	None	None	None	None	None	None	None	None	None	None
1023C:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
1023D:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
1026B:												
Lizzie, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1027:												
Udorthents, wet substratum-----	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1030:												
Pits, gravel.												
Udipsamments.												
1035B:												
Crowfork--------	None	None	None	None	None	None	None	None	None	None	None	None
1035C:												
Crowfork--------	None	None	None	None	None	None	None	None	None	None	None	None
1035D:												
Crowfork--------	None	None	None	None	None	None	None	None	None	None	None	None
1036B:												
Angus----------	None	None	None	None	None	None	None	None	None	None	None	None
1037:												
Eckvoll, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1038A:												
Verndale, acid substratum-----	None	None	None	None	None	None	None	None	None	None	None	None
1038B:												
Verndale, acid substratum-----	None	None	None	None	None	None	None	None	None	None	None	None
1066B:												
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
1066C:												
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
1066E:												
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
1072:												
Udorthents, shallow--------	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1075:												
Klossner, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Muskego, ponded	None	None	None	None	None	None	None	None	None	None	None	None
1080:												
Klossner, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Okoboji, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Glencoe, ponded	None	None	None	None	None	None	None	None	None	None	None	None
1087B:												
Angus----------	None	None	None	None	None	None	None	None	None	None	None	None
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
1094B:												
Angus----------	None	None	None	None	None	None	None	None	None	None	None	None
Cordova---------	None	None	None	None	None	None	None	None	None	None	None	None
1099:												
Granby, very wet	None	None	None	None	None	None	None	None	None	None	None	None
1110:												
Isan----------	None	None	None	None	None	None	None	None	None	None	None	None
1156:												
Cordova---------	None	None	None	None	None	None	None	None	None	None	None	None
1161:												
Barry----------	None	None	None	None	None	None	None	None	None	None	None	None
1163:												
Suckercreek, frequently flooded--------	None	None	Frequent Long	Frequent Long	Frequent Long	Frequent Long	Occasional Brief	Occasional Brief	None	None	None	None
1165:												
Lundlake, depressional---	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1173:												
Muskego, frequently flooded	None	None	Frequent Long	Frequent Long	Frequent Long	Frequent Brief	Occasional Brief	None	None	None	None	None
Klossner, frequently flooded	None	None	Frequent Long	Frequent Long	Frequent Long	Frequent Brief	Occasional Brief	None	None	None	None	None
1186:												
Forestcity	None	None	None	None	None	None	None	None	None	None	None	None
Lundlake, depressional	None	None	None	None	None	None	None	None	None	None	None	None
1196B:												
Lida	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
1196C:												
Lida	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
1196E:												
Lida	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None
1197:												
Suckercreek, occasionally flooded	None	None	Occasional Brief	Occasional Long	Occasional Long	Occasional Long	Occasional Very brief	Occasional Very brief	None	None	None	None
1199:												
Klossner, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Lundlake, ponded	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1203:												
Muskego, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Blue Earth, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Houghton, ponded	None	None	None	None	None	None	None	None	None	None	None	None
1204B:												
Reedslake	None	None	None	None	None	None	None	None	None	None	None	None
1207B:												
Reedslake	None	None	None	None	None	None	None	None	None	None	None	None
Le Sueur	None	None	None	None	None	None	None	None	None	None	None	None
1213C:												
Cokato, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Storden	None	None	None	None	None	None	None	None	None	None	None	None
1213D:												
Cokato, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Storden	None	None	None	None	None	None	None	None	None	None	None	None
1220C:												
Cokato, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Storden	None	None	None	None	None	None	None	None	None	None	None	None
Hawick	None	None	None	None	None	None	None	None	None	None	None	None
1223:												
Sandberg, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
Arvilla, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1224:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
Verndale, acid substratum	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1231:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
Mosford	None	None	None	None	None	None	None	None	None	None	None	None
1255:												
Elkriver, occasionally flooded	None	None	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Brief	Occasional Very brief	Occasional Very brief	None	None	None	None
1256:												
Cantlin	None	None	None	None	None	None	None	None	None	None	None	None
1257:												
Elkriver, rarely flooded	None	None	Rare Very brief	Rare Very brief	Rare Very brief	Rare Very brief	None	None	None	None	None	None
Mosford, rarely flooded	None	None	Rare Very brief	Rare Very brief	Rare Very brief	Rare Very brief	None	None	None	None	None	None
1260B:												
Stonelake	None	None	None	None	None	None	None	None	None	None	None	None
Nebish, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1260C:												
Stonelake	None	None	None	None	None	None	None	None	None	None	None	None
Nebish	None	None	None	None	None	None	None	None	None	None	None	None
1260E:												
Stonelake	None	None	None	None	None	None	None	None	None	None	None	None
Nebish	None	None	None	None	None	None	None	None	None	None	None	None
1288:												
Seelyeville, ponded	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1288:												
Markey, ponded--	None	None	None	None	None	None	None	None	None	None	None	None
1356.												
Water, miscellaneous												
1362B:												
Angus----------	None	None	None	None	None	None	None	None	None	None	None	None
1368:												
Southhaven------	None	None	None	None	None	None	None	None	None	None	None	None
1377B:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1377C:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1377D:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1377E:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1378:												
Fordum, occasionally flooded--------	None	None	Occasional Brief	Occasional Long	Occasional Long	Occasional Long	Occasional Very brief	Occasional Very brief	None	None	None	None
1379B:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Almora----------	None	None	None	None	None	None	None	None	None	None	None	None
1380A:												
Bygland, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1380B:												
Bygland, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1380C:												
Bygland, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1381:												
Lindaas, morainic	None	None	None	None	None	None	None	None	None	None	None	None
1383A:												
Shorewood, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1388B:												
Terril, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1406:												
Medo, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Dassel, ponded	None	None	None	None	None	None	None	None	None	None	None	None
Biscay, ponded	None	None	None	None	None	None	None	None	None	None	None	None
1408B:												
Angus	None	None	None	None	None	None	None	None	None	None	None	None
Kilkenny	None	None	None	None	None	None	None	None	None	None	None	None
1438B:												
Braham, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1443:												
Belleville	None	None	None	None	None	None	None	None	None	None	None	None
1901B:												
Angus	None	None	None	None	None	None	None	None	None	None	None	None
Le Sueur	None	None	None	None	None	None	None	None	None	None	None	None
1931:												
Essexville	None	None	None	None	None	None	None	None	None	None	None	None

Table 21.--Flooding Frequency and Duration--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1942:												
Forada, depressional---	None	None	None	None	None	None	None	None	None	None	None	None
1946:												
Fordum, frequently flooded--------	None	None	Frequent Long	Frequent Long	Frequent Long	Frequent Long	Occasional Brief	Occasional Brief	None	None	None	None
Winterfield, frequently flooded--------	None	None	Frequent Long	Frequent Brief	Occasional Brief	Occasional Brief	Occasional Very brief	Occasional Very brief	None	None	None	None
1975:												
Oylen----------	None	None	None	None	None	None	None	None	None	None	None	None
W. Water												

Table 22.--Ponding Frequency, Duration, and Depth

(Depth refers to the depth, in feet, of the water above the surface. See text for definitions of terms used in this table. Absence of an entry indicates that no estimate was made)

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
7A:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
7B:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
7C:												
Hubbard	None	None	None	None	None	None	None	None	None	None	None	None
8B:												
Sparta	None	None	None	None	None	None	None	None	None	None	None	None
35:												
Blue Earth, depressional	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
74B:												
Dickinson	None	None	None	None	None	None	None	None	None	None	None	None
86:												
Canisteo	None	None	None	None	None	None	None	None	None	None	None	None
106C2:												
Lester, eroded	None	None	None	None	None	None	None	None	None	None	None	None
106D2:												
Lester, eroded	None	None	None	None	None	None	None	None	None	None	None	None
106E:												
Lester	None	None	None	None	None	None	None	None	None	None	None	None
109:												
Cordova	None	None	None	None	None	None	None	None	None	None	None	None
114:												
Glencoe, depressional	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
138:												
Lerdal----------	None	None	None	None	None	None	None	None	None	None	None	None
158A:												
Zimmerman-------	None	None	None	None	None	None	None	None	None	None	None	None
158B:												
Zimmerman-------	None	None	None	None	None	None	None	None	None	None	None	None
158C:												
Zimmerman-------	None	None	None	None	None	None	None	None	None	None	None	None
158E:												
Zimmerman-------	None	None	None	None	None	None	None	None	None	None	None	None
169C:												
Braham----------	None	None	None	None	None	None	None	None	None	None	None	None
181:												
Litchfield------	None	None	None	None	None	None	None	None	None	None	None	None
229:												
Waldorf---------	None	None	None	None	None	None	None	None	None	None	None	None
231C:												
Lester----------	None	None	None	None	None	None	None	None	None	None	None	None
231D:												
Lester----------	None	None	None	None	None	None	None	None	None	None	None	None
235:												
Nessel----------	None	None	None	None	None	None	None	None	None	None	None	None
239:												
Le Sueur--------	None	None	None	None	None	None	None	None	None	None	None	None
247:												
Linder----------	None	None	None	None	None	None	None	None	None	None	None	None
255:												
Mayer-----------	None	None	None	None	None	None	None	None	None	None	None	None
256:												
Mazaska---------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
258B:												
Sandberg--------	None	None	None	None	None	None	None	None	None	None	None	None
258C:												
Sandberg--------	None	None	None	None	None	None	None	None	None	None	None	None
258E:												
Sandberg--------	None	None	None	None	None	None	None	None	None	None	None	None
260:												
Duelm----------	None	None	None	None	None	None	None	None	None	None	None	None
261:												
Isan, depressional---	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None
286B:												
Shorewood-------	None	None	None	None	None	None	None	None	None	None	None	None
294A:												
Rasset----------	None	None	None	None	None	None	None	None	None	None	None	None
323:												
Shields---------	None	None	None	None	None	None	None	None	None	None	None	None
327A:												
Dickman---------	None	None	None	None	None	None	None	None	None	None	None	None
327B:												
Dickman---------	None	None	None	None	None	None	None	None	None	None	None	None
375:												
Forada----------	None	None	None	None	None	None	None	None	None	None	None	None
392:												
Biscay----------	None	None	None	None	None	None	None	None	None	None	None	None
406:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
414:												
Hamel----------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
441:												
Almora----------	None	None	None	None	None	None	None	None	None	None	None	None
461B:												
Koronis---------	None	None	None	None	None	None	None	None	None	None	None	None
461C2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
461E:												
Koronis---------	None	None	None	None	None	None	None	None	None	None	None	None
511:												
Marcellon, MAP <30--------	None	None	None	None	None	None	None	None	None	None	None	None
523:												
Houghton, drained--------	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
525:												
Muskego, surface drained--------	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None
539:												
Klossner, drained--------	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
540:												
Seelyeville, surface drained	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
543:												
Markey, surface drained--------	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None
548:												
Medo, drained---	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
603:												
Hanlon, occasionally flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
611D:												
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
708:												
Rushlake--------	None	None	None	None	None	None	None	None	None	None	None	None
740:												
Hamel----------	None	None	None	None	None	None	None	None	None	None	None	None
Glencoe, depressional---	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
768:												
Mosford---------	None	None	None	None	None	None	None	None	None	None	None	None
771:												
Elkriver, rarely flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
783C2:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Kilkenny, eroded	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
792:												
Fordum, frequently flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
799:												
Seelyeville, frequently flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
Bowstring, frequently flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
804B:												
Koronis---------	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
804C2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
804D2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
804E:												
Koronis---------	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
807D2:												
Koronis, eroded	None	None	None	None	None	None	None	None	None	None	None	None
Sunburg---------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
875B:												
Estherville-----	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
875C:												
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
Estherville-----	None	None	None	None	None	None	None	None	None	None	None	None
896B:												
Kingsley--------	None	None	None	None	None	None	None	None	None	None	None	None
Gotham----------	None	None	None	None	None	None	None	None	None	None	None	None
896C:												
Kingsley--------	None	None	None	None	None	None	None	None	None	None	None	None
Gotham----------	None	None	None	None	None	None	None	None	None	None	None	None
945C2:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Storden, eroded	None	None	None	None	None	None	None	None	None	None	None	None
945D2:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Storden, eroded	None	None	None	None	None	None	None	None	None	None	None	None
956:												
Canisteo--------	None	None	None	None	None	None	None	None	None	None	None	None
Glencoe, depressional---	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
978:												
Cordova---------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
978:												
Rolfe, depressional---	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
1000:												
Arvilla, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1015:												
Udipsamments (cut and fill land)----------	None	None	None	None	None	None	None	None	None	None	None	None
1016:												
Udorthents, loamy----------	None	None	None	None	None	None	None	None	None	None	None	None
1023C:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
1023D:												
Lester, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
1026B:												
Lizzie, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1027:												
Udorthents, wet substratum-----	None	None	None	None	None	None	None	None	None	None	None	None
1030:												
Pits, gravel.												
Udipsamments.												
1035B:												
Crowfork--------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1035C:												
Crowfork--------	None	None	None	None	None	None	None	None	None	None	None	None
1035D:												
Crowfork--------	None	None	None	None	None	None	None	None	None	None	None	None
1036B:												
Angus----------	None	None	None	None	None	None	None	None	None	None	None	None
1037:												
Eckvoll, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1038A:												
Verndale, acid substratum-----	None	None	None	None	None	None	None	None	None	None	None	None
1038B:												
Verndale, acid substratum-----	None	None	None	None	None	None	None	None	None	None	None	None
1066B:												
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
1066C:												
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
1066E:												
Malardi---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
1072:												
Udorthents, shallow--------	None	None	None	None	None	None	None	None	None	None	None	None
1075:												
Klossner, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1075:												
Muskego, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
1080:												
Klossner, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Okoboji, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Glencoe, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
1087B:												
Angus	None	None	None	None	None	None	None	None	None	None	None	None
Malardi	None	None	None	None	None	None	None	None	None	None	None	None
1094B:												
Angus	None	None	None	None	None	None	None	None	None	None	None	None
Cordova	None	None	None	None	None	None	None	None	None	None	None	None
1099:												
Granby, very wet	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None
1110:												
Isan	None	None	None	None	None	None	None	None	None	None	None	None
1156:												
Cordova	None	None	None	None	None	None	None	None	None	None	None	None
1161:												
Barry	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1163:												
Suckercreek, frequently flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
1165:												
Lundlake, depressional---	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
1173:												
Muskego, frequently flooded--------	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None
Klossner, frequently flooded--------	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None
1186:												
Forestcity------	None	None	None	None	None	None	None	None	None	None	None	None
Lundlake, depressional---	None	None	Frequent Long Depth: 0.5	Frequent Brief Depth: 1.0	None	None	None	None	None	None	None	None
1196B:												
Lida----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1196C:												
Lida----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1196E:												
Lida----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1197:												
Suckercreek, occasionally flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
1199:												
Klossner, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Lundlake, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
1203:												
Muskego, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Blue Earth, ponded---------	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Houghton, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
1204B:												
Reedslake-------	None	None	None	None	None	None	None	None	None	None	None	None
1207B:												
Reedslake-------	None	None	None	None	None	None	None	None	None	None	None	None
Le Sueur--------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1213C:												
Cokato, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Storden---------	None	None	None	None	None	None	None	None	None	None	None	None
1213D:												
Cokato, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Storden---------	None	None	None	None	None	None	None	None	None	None	None	None
1220C:												
Cokato, eroded--	None	None	None	None	None	None	None	None	None	None	None	None
Storden---------	None	None	None	None	None	None	None	None	None	None	None	None
Hawick----------	None	None	None	None	None	None	None	None	None	None	None	None
1223:												
Sandberg, MAP >25--------	None	None	None	None	None	None	None	None	None	None	None	None
Arvilla, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1224:												
Hubbard---------	None	None	None	None	None	None	None	None	None	None	None	None
Verndale, acid substratum-----	None	None	None	None	None	None	None	None	None	None	None	None
1231:												
Hubbard---------	None	None	None	None	None	None	None	None	None	None	None	None
Mosford---------	None	None	None	None	None	None	None	None	None	None	None	None
1255:												
Elkriver, occasionally flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
1256:												
Cantlin---------	None	None	None	None	None	None	None	None	None	None	None	None
1257:												
Elkriver, rarely flooded--------	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1257:												
Mosford, rarely flooded	None	None	None	None	None	None	None	None	None	None	None	None
1260B:												
Stonelake	None	None	None	None	None	None	None	None	None	None	None	None
Nebish, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1260C:												
Stonelake	None	None	None	None	None	None	None	None	None	None	None	None
Nebish	None	None	None	None	None	None	None	None	None	None	None	None
1260E:												
Stonelake	None	None	None	None	None	None	None	None	None	None	None	None
Nebish	None	None	None	None	None	None	None	None	None	None	None	None
1288:												
Seelyeville, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Markey, ponded	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
1356.												
Water, miscellaneous												
1362B:												
Angus	None	None	None	None	None	None	None	None	None	None	None	None
1368:												
Southhaven	None	None	None	None	None	None	None	None	None	None	None	None
1377B:												
Dorset	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1377C:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1377D:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1377E:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Two Inlets------	None	None	None	None	None	None	None	None	None	None	None	None
1378:												
Fordum, occasionally flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
1379B:												
Dorset----------	None	None	None	None	None	None	None	None	None	None	None	None
Almora----------	None	None	None	None	None	None	None	None	None	None	None	None
1380A:												
Bygland, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1380B:												
Bygland, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1380C:												
Bygland, MAP >25	None	None	None	None	None	None	None	None	None	None	None	None
1381:												
Lindaas, morainic-------	None	None	None	None	None	None	None	None	None	None	None	None
1383A:												
Shorewood, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1388B:												
Terril, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1406:												
Medo, ponded----	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Dassel, ponded--	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
Biscay, ponded--	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 3.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 0.5	Frequent Very long Depth: 1.0	Frequent Very long Depth: 2.0	Frequent Very long Depth: 2.5	Frequent Very long Depth: 2.0
1408B:												
Angus----------	None	None	None	None	None	None	None	None	None	None	None	None
Kilkenny--------	None	None	None	None	None	None	None	None	None	None	None	None
1438B:												
Braham, moderately wet	None	None	None	None	None	None	None	None	None	None	None	None
1443:												
Belleville------	None	None	None	None	None	None	None	None	None	None	None	None
1901B:												
Angus----------	None	None	None	None	None	None	None	None	None	None	None	None
Le Sueur--------	None	None	None	None	None	None	None	None	None	None	None	None
1931:												
Essexville------	None	None	None	None	None	None	None	None	None	None	None	None
1942:												
Forada, depressional---	None	None	Frequent Long Depth: 1.0	Frequent Very long Depth: 1.0	Frequent Long Depth: 1.0	Frequent Brief Depth: 0.5	None	None	None	None	None	None

Table 22.--Ponding Frequency, Duration, and Depth--Continued

Map symbol and component name	January	February	March	April	May	June	July	August	September	October	November	December
1946:												
Fordum, frequently flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
Winterfield, frequently flooded--------	None	None	None	None	None	None	None	None	None	None	None	None
1975:												
Oylen----------	None	None	None	None	None	None	None	None	None	None	None	None
W. Water												

Table 23.--Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated)

Map symbol and soil name	Pct. of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
		In	In			
7A:						
Hubbard	95	0	---	Low	Low	Low
7B:						
Hubbard	90	0	---	Low	Low	Low
7C:						
Hubbard	80	0	---	Low	Low	Low
8B:						
Sparta	95	0	---	Low	Low	Moderate
35:						
Blue Earth, depressional	80	0	---	High	High	Low
74B:						
Dickinson	95	0	---	Moderate	Low	Moderate
86:						
Canisteo	80	0	---	High	High	Low
106C2:						
Lester, eroded	70	0	---	Moderate	Low	Moderate
106D2:						
Lester, eroded	80	0	---	Moderate	Low	Moderate
106E:						
Lester	80	0	---	Moderate	Low	Moderate
109:						
Cordova	90	0	---	High	High	Low
114:						
Glencoe, depressional	90	0	---	High	High	Low
138:						
Lerdal	80	0	---	High	High	High
158A:						
Zimmerman	90	0	---	Low	Low	High
158B:						
Zimmerman	90	0	---	Low	Low	High
158C:						
Zimmerman	90	0	---	Low	Low	High
158E:						
Zimmerman	85	0	---	Low	Low	High
169C:						
Braham	90	0	---	Low	Low	Moderate
181:						
Litchfield	95	0	---	Moderate	Low	Low
229:						
Waldorf	90	0	---	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In			
231C:						
Lester	80	0	---	Moderate	Low	Moderate
231D:						
Lester	80	0	---	Moderate	Low	Moderate
235:						
Nessel	85	0	---	High	Moderate	Moderate
239:						
Le Sueur	80	0	---	High	High	Low
247:						
Linder	90	0	---	High	Moderate	Low
255:						
Mayer	85	0	---	High	High	Low
256:						
Mazaska	90	0	---	High	High	Moderate
258B:						
Sandberg	95	0	---	Low	Moderate	Low
258C:						
Sandberg	90	0	---	Low	Moderate	Low
258E:						
Sandberg	85	0	---	Low	Moderate	Low
260:						
Duelm	90	0	---	Moderate	Low	Moderate
261:						
Isan, depressional	90	0	---	Moderate	High	Moderate
286B:						
Shorewood	95	0	---	High	High	Moderate
294A:						
Rasset	90	0	---	Moderate	Low	Low
323:						
Shields	95	0	---	High	High	Low
327A:						
Dickman	85	0	---	Low	Low	Moderate
327B:						
Dickman	85	0	---	Low	Low	Moderate
375:						
Forada	85	0	---	High	High	Low
392:						
Biscay	90	0	---	High	High	Low
406:						
Dorset	90	0	---	Moderate	Low	Low
414:						
Hamel	90	0	---	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence Initial	Subsidence Total	Potential for frost action	Risk of corrosion Uncoated steel	Risk of corrosion Concrete
		In	In			
441:						
Almora	90	0	---	Moderate	Low	Low
461B:						
Koronis	85	0	---	Moderate	Low	Moderate
461C2:						
Koronis, eroded	80	0	---	Moderate	Low	Moderate
461E:						
Koronis	80	0	---	Moderate	Low	Moderate
511:						
Marcellon, MAP <30	85	0	---	High	High	Moderate
523:						
Houghton, drained	80	6-18	55-60	High	High	Moderate
525:						
Muskego, surface drained	75	0	35-45	High	Moderate	Moderate
539:						
Klossner, drained	80	2-4	25-32	High	High	Moderate
540:						
Seelyeville, surface drained	80	0	66-78	High	High	Moderate
543:						
Markey, surface drained	80	8-22	16-44	High	High	Moderate
548:						
Medo, drained	80	8-22	16-44	High	High	Moderate
603:						
Hanlon, occasionally flooded	80	0	---	Moderate	Moderate	Low
611D:						
Hawick	85	0	---	Low	Low	Low
708:						
Rushlake	85	0	---	Moderate	Moderate	Low
740:						
Hamel	70	0	---	High	High	Low
Glencoe, depressional	20	0	---	High	High	Low
768:						
Mosford	85	0	---	Low	Low	Moderate
771:						
Elkriver, rarely flooded	85	0	---	Moderate	Moderate	Low
783C2:						
Lester, eroded	50	0	---	Moderate	Low	Moderate
Kilkenny, eroded	30	0	---	High	Moderate	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In			
792:						
Fordum, frequently flooded	90	0	---	High	High	Low
799:						
Seelyeville, frequently flooded	45	---	50-55	High	High	Moderate
Bowstring, frequently flooded	45	---	20-30	High	High	Low
804B:						
Koronis	50	0	---	Moderate	Low	Moderate
Sunburg	20	0	---	Moderate	Low	Low
Hawick	15	0	---	Low	Low	Low
804C2:						
Koronis, eroded	45	0	---	Moderate	Low	Moderate
Sunburg	25	0	---	Moderate	Low	Low
Hawick	15	0	---	Low	Low	Low
804D2:						
Koronis, eroded	40	0	---	Moderate	Low	Moderate
Sunburg	30	0	---	Moderate	Low	Low
Hawick	15	0	---	Low	Low	Low
804E:						
Koronis	50	0	---	Moderate	Low	Moderate
Sunburg	20	0	---	Moderate	Low	Low
Hawick	15	0	---	Low	Low	Low
807D2:						
Koronis, eroded	65	0	---	Moderate	Low	Moderate
Sunburg	20	0	---	Moderate	Low	Low
875B:						
Estherville	60	0	---	Low	Low	Low
Hawick	30	0	---	Low	Low	Low
875C:						
Hawick	60	0	---	Low	Low	Low
Estherville	25	0	---	Low	Low	Low
896B:						
Kingsley	70	0	---	Low	Low	Moderate
Gotham	25	0	---	Low	Low	Moderate
896C:						
Kingsley	70	0	---	Low	Low	Moderate
Gotham	25	0	---	Low	Low	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
		In	In			
945C2:						
Lester, eroded---------	50	0	---	Moderate	Low	Moderate
Storden, eroded--------	30	0	---	Moderate	Low	Low
945D2:						
Lester, eroded---------	60	0	---	Moderate	Low	Moderate
Storden, eroded--------	20	0	---	Moderate	Low	Low
956:						
Canisteo----------	65	0	---	High	High	Low
Glencoe, depressional--	25	0	---	High	High	Low
978:						
Cordova----------	60	0	---	High	High	Low
Rolfe, depressional----	30	0	---	High	High	Moderate
1000:						
Arvilla, MAP >25-------	90	0	---	Low	Moderate	Low
1015.						
Udipsamments (cut and fill land)						
1016.						
Udorthents, loamy						
1023C:						
Lester, eroded---------	50	0	---	Moderate	Low	Moderate
Malardi----------	35	0	---	Moderate	Low	Low
1023D:						
Lester, eroded---------	45	0	---	Moderate	Low	Moderate
Malardi----------	40	0	---	Moderate	Low	Low
1026B:						
Lizzie, moderately wet	90	0	---	High	Low	Low
1027.						
Udorthents, wet substratum						
1030:						
Pits, gravel.						
Udipsamments.						
1035B:						
Crowfork----------	90	0	---	Low	Low	Moderate
1035C:						
Crowfork----------	90	0	---	Low	Low	Moderate
1035D:						
Crowfork----------	85	0	---	Low	Low	Moderate
1036B:						
Angus----------	85	0	---	Moderate	Low	Moderate

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In			
1037:						
Eckvoll, MAP >25	90	0	---	High	Moderate	Low
1038A:						
Verndale, acid substratum	90	0	---	Moderate	Low	Moderate
1038B:						
Verndale, acid substratum	85	0	---	Moderate	Low	Moderate
1066B:						
Malardi	65	0	---	Moderate	Low	Low
Hawick	25	0	---	Low	Low	Low
1066C:						
Malardi	60	0	---	Moderate	Low	Low
Hawick	25	0	---	Low	Low	Low
1066E:						
Malardi	55	0	---	Moderate	Low	Low
Hawick	30	0	---	Low	Low	Low
1072.						
Udorthents, shallow						
1075:						
Klossner, ponded	40	2-4	25-32	High	High	Moderate
Muskego, ponded	40	0	35-45	High	Moderate	Moderate
1080:						
Klossner, ponded	30	2-4	25-32	High	High	Moderate
Okoboji, ponded	30	0	---	High	High	Low
Glencoe, ponded	30	0	---	High	High	Low
1087B:						
Angus	55	0	---	Moderate	Low	Moderate
Malardi	30	0	---	Moderate	Low	Low
1094B:						
Angus	60	0	---	Moderate	Low	Moderate
Cordova	30	0	---	High	High	Low
1099:						
Granby, very wet	85	0	---	High	High	Low
1110:						
Isan	90	0	---	Moderate	High	Moderate
1156:						
Cordova	85	0	---	High	High	Low
1161:						
Barry	85	0	---	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence Initial	Subsidence Total	Potential for frost action	Risk of corrosion Uncoated steel	Risk of corrosion Concrete
		In	In			
1163:						
Suckercreek, frequently flooded	85	0	---	High	High	Low
1165:						
Lundlake, depressional	90	0	---	High	High	Low
1173:						
Muskego, frequently flooded	45	0	35-45	High	Moderate	Moderate
Klossner, frequently flooded	45	2-4	25-32	High	High	Moderate
1186:						
Forestcity	75	0	---	High	Moderate	Low
Lundlake, depressional	20	0	---	High	High	Low
1196B:						
Lida	60	0	---	Low	Low	Low
Two Inlets	30	0	---	Low	Low	Low
1196C:						
Lida	55	0	---	Low	Low	Low
Two Inlets	30	0	---	Low	Low	Low
1196E:						
Lida	50	0	---	Low	Low	Low
Two Inlets	40	0	---	Low	Low	Low
1197:						
Suckercreek, occasionally flooded	80	0	---	High	High	Low
1199:						
Klossner, ponded	45	2-4	25-32	High	High	Moderate
Lundlake, ponded	45	0	---	High	High	Low
1203:						
Muskego, ponded	30	0	35-45	High	Moderate	Moderate
Blue Earth, ponded	30	0	---	High	High	Low
Houghton, ponded	30	6-18	55-60	High	High	Moderate
1204B:						
Reedslake	85	0	---	Moderate	Low	Low
1207B:						
Reedslake	60	0	---	Moderate	Low	Low
Le Sueur	25	0	---	High	High	Low
1213C:						
Cokato, eroded	65	0	---	Moderate	Low	Low
Storden	20	0	---	Moderate	Low	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
		In	In			
1213D:						
Cokato, eroded	60	0	---	Moderate	Low	Low
Storden	25	0	---	Moderate	Low	Low
1220C:						
Cokato, eroded	50	0	---	Moderate	Low	Low
Storden	20	0	---	Moderate	Low	Low
Hawick	15	0	---	Low	Low	Low
1223:						
Sandberg, MAP >25	60	0	---	Low	Moderate	Low
Arvilla, MAP >25	30	0	---	Low	Moderate	Low
1224:						
Hubbard	60	0	---	Low	Low	Low
Verndale, acid substratum	30	0	---	Moderate	Low	Moderate
1231:						
Hubbard	60	0	---	Low	Low	Low
Mosford	30	0	---	Low	Low	Moderate
1255:						
Elkriver, occasionally flooded	80	0	---	Moderate	Moderate	Low
1256:						
Cantlin	90	0	---	Low	Low	Moderate
1257:						
Elkriver, rarely flooded	55	0	---	Moderate	Moderate	Low
Mosford, rarely flooded	35	0	---	Low	Low	Moderate
1260B:						
Stonelake	55	0	---	Low	Low	Moderate
Nebish, moderately wet	30	0	---	Moderate	Moderate	Low
1260C:						
Stonelake	55	0	---	Low	Low	Moderate
Nebish	30	0	---	Moderate	Moderate	Low
1260E:						
Stonelake	60	0	---	Low	Low	Moderate
Nebish	25	0	---	Moderate	Moderate	Low
1288:						
Seelyeville, ponded	45	0	66-78	High	High	Moderate
Markey, ponded	45	8-22	16-44	High	High	Moderate
1356.						
Water, miscellaneous						

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence: Initial	Subsidence: Total	Potential for frost action	Risk of corrosion: Uncoated steel	Risk of corrosion: Concrete
		In	In			
1362B:						
Angus	85	0	---	Moderate	Low	Moderate
1368:						
Southhaven	90	0	---	Moderate	Moderate	Low
1377B:						
Dorset	70	0	---	Moderate	Low	Low
Two Inlets	20	0	---	Low	Low	Low
1377C:						
Dorset	50	0	---	Moderate	Low	Low
Two Inlets	35	0	---	Low	Low	Low
1377D:						
Dorset	45	0	---	Moderate	Low	Low
Two Inlets	40	0	---	Low	Low	Low
1377E:						
Dorset	45	0	---	Moderate	Low	Low
Two Inlets	45	0	---	Low	Low	Low
1378:						
Fordum, occasionally flooded	85	0	---	High	High	Low
1379B:						
Dorset	65	0	---	Moderate	Low	Low
Almora	25	0	---	Moderate	Low	Low
1380A:						
Bygland, MAP >25	85	0	---	High	High	Low
1380B:						
Bygland, MAP >25	70	0	---	High	High	Low
1380C:						
Bygland, MAP >25	70	0	---	High	High	Low
1381:						
Lindaas, morainic	80	0	---	High	High	Low
1383A:						
Shorewood, moderately wet	95	0	---	High	High	Moderate
1388B:						
Terril, moderately wet	85	0	---	Moderate	Moderate	Low
1406:						
Medo, ponded	30	8-22	16-44	High	High	Moderate
Dassel, ponded	30	0	---	High	High	Low
Biscay, ponded	30	0	---	High	High	Low

Table 23.--Soil Features--Continued

Map symbol and soil name	Pct. of map unit	Subsidence		Potential for frost action	Risk of corrosion	
		Initial	Total		Uncoated steel	Concrete
		In	In			
1408B:						
Angus	45	0	---	Moderate	Low	Moderate
Kilkenny	40	0	---	High	Moderate	Moderate
1438B:						
Braham, moderately wet	85	0	---	Low	Moderate	Moderate
1443:						
Belleville	85	0	---	High	High	Low
1901B:						
Angus	60	0	---	Moderate	Low	Moderate
Le Sueur	30	0	---	High	High	Low
1931:						
Essexville	75	0	---	High	High	Low
1942:						
Forada, depressional	85	0	---	High	Low	Low
1946:						
Fordum, frequently flooded	70	0	---	High	High	Low
Winterfield, frequently flooded	20	0	---	Moderate	Moderate	Moderate
1975:						
Oylen	90	0	---	Moderate	Moderate	Low
W.						
Water						

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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).

Beach deposits. Material, such as sand and gravel, that is generally laid down parallel to an active or relict shoreline of a postglacial or glacial lake.

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.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Blowout. A 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, containing acidic, decaying vegetation (such as sphagnum, sedges, and heaths) that develops into peat.

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.

Catsteps. Very small, irregular terraces on steep hillsides, especially in pasture, formed by the trampling of cattle or the slippage of saturated soil.

Channery soil material. Soil material that has, by volume, 15 to 35 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches (15 centimeters) along the longest axis. A single piece is called a channer.

Chemical treatment. Control of unwanted vegetation through the use of chemicals.

Chiseling. Tillage with an implement having one or more soil-penetrating points that shatter or loosen hard, compacted layers to a depth below normal plow depth.

Clay. As a soil separate, the mineral soil particles less than 0.002 millimeter in diameter. As a soil textural class, soil material that is 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

Clay depletions. 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.

Coarse textured soil. Sand or loamy sand.

Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. 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. 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.

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.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Decreasers. The most heavily grazed climax range plants. Because they are the most palatable, they are the first to be destroyed by overgrazing.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Delta. A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depression. Any relatively sunken part of the earth's surface; especially a low-lying area surrounded by higher ground. A closed depression has no natural outlet for surface drainage.

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.

Disintegration moraine. A drift topography characterized by chaotic mounds and pits, generally randomly oriented, developed in supraglacial drift by collapse and flow as the underlying stagnant ice melted. Slopes may be steep and unstable. Abrupt changes between materials of differing lithology are common.

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 does not have a defined channel or has only a small defined channel.

Drumlin. A low, smooth, elongated oval hill, mound, or ridge of compact glacial till. The longer axis is

parallel to the path of the glacier and commonly has a blunt nose pointing in the direction from which the ice approached.

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 that is being or was produced at the outer margin of an actively flowing glacier at any given time.

Endosaturation. A type of saturation of the soil in which all horizons between the upper boundary of saturation and a depth of 2 meters are saturated.

Eolian soil material. Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

Ephemeral stream. A stream, or reach of a stream, that flows only in direct response to precipitation. It receives no long-continued supply from melting snow or other source, and its channel is above the water table at all times.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

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.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

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 ovendry weight, after the gravitational, or free, water has drained away; the field moisture content 2 or 3 days after a soaking rain; also called *normal field capacity, normal moisture capacity,* or *capillary capacity*.

Fine textured soil. Sandy clay, silty clay, or clay.

Firebreak. An area cleared of flammable material to stop or help control creeping or running fires. It also serves as a line from which to work and to facilitate the movement of firefighters and equipment. Designated roads also serve as firebreaks.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flaggy soil material. Material that has, by volume, 15 to 35 percent flagstones. Very flaggy soil material has 35 to 60 percent flagstones, and extremely flaggy soil material has more than 60 percent flagstones.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist 6 to 15 inches (15 to 38 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Footslope. The position that forms the inner, gently inclined surface at the base of a hillslope. In profile, footslopes are commonly concave. A footslope is a transition zone between upslope sites of erosion and transport (shoulders and backslopes) and downslope sites of deposition (toeslopes).

Forb. Any herbaceous plant not a grass or a sedge.

Forest cover. All trees and other woody plants (underbrush) covering the ground in a forest.

Forest type. A stand of trees similar in composition and development because of given physical and biological factors by which it may be differentiated from other stands.

Fragipan. A loamy, brittle subsurface horizon low in porosity and content of organic matter and low or moderate in clay but high in silt or very fine sand. A fragipan appears cemented and restricts roots. When dry, it is hard or very hard and has a higher bulk density than the horizon or horizons above. When moist, it tends to rupture suddenly under pressure rather than to deform slowly.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Geomorphology. The science that treats the general configuration of the earth's surface; specifically, the study of the classification, description, nature, origin, and development of landforms and their relationships to underlying structures, and the history of geologic changes as recorded by these surface features. The term is especially applied to the genetic interpretation of landforms.

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.

Glacial till. Unsorted, nonstratified glacial drift consisting of clay, silt, sand, and boulders transported and deposited by glacial ice.

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.

Graded stripcropping. Growing crops in strips that grade toward a protected waterway.

Grassed waterway. A natural or constructed waterway, typically broad and shallow, seeded to grass as protection against erosion. Conducts surface water away from cropland.

Gravel. Rounded or angular fragments of rock as much as 3 inches (2 millimeters to 7.6 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that has 15 to 35 percent, by volume, rounded or angular rock fragments, not prominently flattened, as much as 3 inches (7.6 centimeters) in diameter.

Green manure crop (agronomy). A soil-improving crop grown to be plowed under in an early stage of maturity or soon after maturity.

Ground water. Water filling all the unblocked pores of the material below the water table.

Gully. A 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 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.

Ice-walled lake plain. A relict surface marking the floor of an extinct lake basin that was formed on solid ground and surrounded by stagnant ice in a stable or unstable superglacial environment on stagnation moraines. As the ice melted, the lake plain became perched above the adjacent landscape. The lake plain is well sorted, generally fine textured, stratified deposits.

Igneous rock. Rock 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.

Increasers. Species in the climax vegetation that increase in amount as the more desirable plants are reduced by close grazing. Increasers commonly are the shorter plants and the less palatable to livestock.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into a soil under a given set of conditions.

Infiltration rate. The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

Intake rate. The average rate of water entering the soil under irrigation. Most soils have a fast initial rate; the rate decreases with application time. Therefore, intake rate for design purposes is not a

constant but is a variable depending on the net irrigation application. The rate of water intake, in inches per hour, is expressed as follows:

Less than 0.2	very low
0.2 to 0.4	low
0.4 to 0.75	moderately low
0.75 to 1.25	moderate
1.25 to 1.75	moderately high
1.75 to 2.5	high
More than 2.5	very high

Interfluve. 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.

Invaders. On range, plants that encroach into an area and grow after the climax vegetation has been reduced by grazing. Generally, plants invade following disturbance of the surface.

Iron 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.

Kame. An irregular, short ridge or hill of stratified glacial drift.

Kame moraine. An end moraine that contains numerous kames. A group of kames along the front of a stagnant glacier, commonly comprising the slumped remnants of a formerly continuous outwash plain built up over the foot of rapidly wasting or stagnant ice.

Karst (topography). The relief of an area underlain by limestone that dissolves in differing degrees, thus forming numerous depressions or small basins.

Knoll. A small, low, rounded hill rising above adjacent landforms.

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.

Lake bed. The bottom of a lake; a lake basin.

Lake plain. A nearly level surface marking the floor of an extinct lake filled by well sorted, generally fine textured, stratified deposits, commonly containing varves.

Lake terrace. A narrow shelf, partly cut and partly built, produced along a lakeshore in front of a scarp line of low cliffs and later exposed when the water level falls.

Lakeshore. A narrow strip of land in contact with or bordering a lake; especially the beach of a lake.

Lamella. A thin (commonly less than 1 cm thick), discontinuous or continuous, generally horizontal layer of fine material (especially clay and iron oxides) that has been pedogenically concentrated (illuviated within a coarser textured eluviated layer several centimeters to several decimeters thick).

Landslide. 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.

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 in an intermediate stage of decomposition such that a significant part of the material can be recognized and a significant part of the material cannot be recognized.

Mudstone. Sedimentary rock formed by induration of silt and clay in approximately equal amounts.

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.

Paleoterrace. An erosional remnant of a terrace that retains the surface form and alluvial deposits of its origin but was not emplaced by, and commonly does not grade to, a present-day stream or drainage network.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

Pedisediment. A 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.

Pitted outwash plain. An outwash plain marked by many irregular depressions, such as kettles, shallow pits, and potholes, which formed by melting of incorporated ice masses; common in Wisconsin and Minnesota.

Pitting (in tables). Pits caused by melting around ice. They form on the soil after plant cover is removed.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plateau. An extensive upland mass with relatively flat summit area that is considerably elevated (more than 100 meters) above adjacent lowlands and separated from them on one or more sides by escarpments.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly

the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

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.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Saline soil. A soil containing soluble salts in an amount that impairs growth of plants. A saline soil does not contain excess exchangeable sodium.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in

diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-sized particles.

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.

Scarification. The act of abrading, scratching, loosening, crushing, or modifying the surface to increase water absorption or to provide a more tillable soil.

Second bottom. The first terrace above the normal flood plain (or first bottom) of a river.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil 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.

Sinkhole. A depression in the landscape where limestone has been dissolved.

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.

Sloughed till. Water-saturated till that has flowed slowly downhill from its original place of deposit by glacial ice. It may rest on other till, on glacial outwash, or on a glaciolacustrine deposit.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Sodium adsorption ratio (SAR). A measure of the amount of sodium (Na) relative to calcium (Ca) and magnesium (Mg) in the water extract from saturated soil paste. It is the ratio of the Na concentration divided by the square root of one-half of the Ca + Mg concentration.

Soft bedrock. Bedrock that can be excavated with trenching machines, backhoes, small rippers, and other equipment commonly used in construction.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of

climate and living matter acting on earthy parent material, as conditioned by relief and by the passage of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stagnation moraine. A body of drift released by the melting of a glacier that ceased flowing. Commonly, but not always, occurs near ice margins; composed of till, ice-contact stratified drift, and small areas of glacial lake sediment. Typical landforms are knob-and-kettle topography, locally including ice-walled lake plains.

Stone line. A concentration of rock 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.

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 grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind erosion and water erosion after harvest, during preparation of a seedbed for the next crop, and during the early growing period of the new crop.

Subsidence. The potential decrease in surface elevation as a result of the drainage of wet soils that have organic layers or semifluid mineral layers. Subsidence, as a result of drainage, is attributed to (1) shrinkage from drying, (2) consolidation because of the loss of ground-water buoyancy, (3) compaction from tillage or manipulation, (4) wind erosion, (5) burning, and (6) biochemical oxidation.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter or loosen a layer that restricts roots.

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. A shallow depression in an undulating ground moraine caused by uneven glacial deposition.

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 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.

Upland. Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Valley fill. In glaciated regions, material deposited in stream valleys by glacial meltwater. In nonglaciated regions, alluvium deposited by heavily loaded streams.

Variegation. Refers to patterns of contrasting colors assumed to be inherited from the parent material rather than to be the result of poor drainage.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Woody peat. An accumulation of organic material that is predominantly composed of trees, shrubs, and other woody plants.