United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

In cooperation with
Cornell University
Agricultural Experiment
Station

Soil Survey of Cattaraugus County, New York

How To Use This Soil Survey

General Soil Map

The general soil map, which is a color map, shows the survey area divided into groups of associated soils called general soil map units. This map is useful in planning the use and management of large areas.

To find information about your area of interest, locate that area on the map, identify the name of the map unit in the area on the color-coded map legend, then refer to the section **General Soil Map Units** for a general description of the soils in your area.

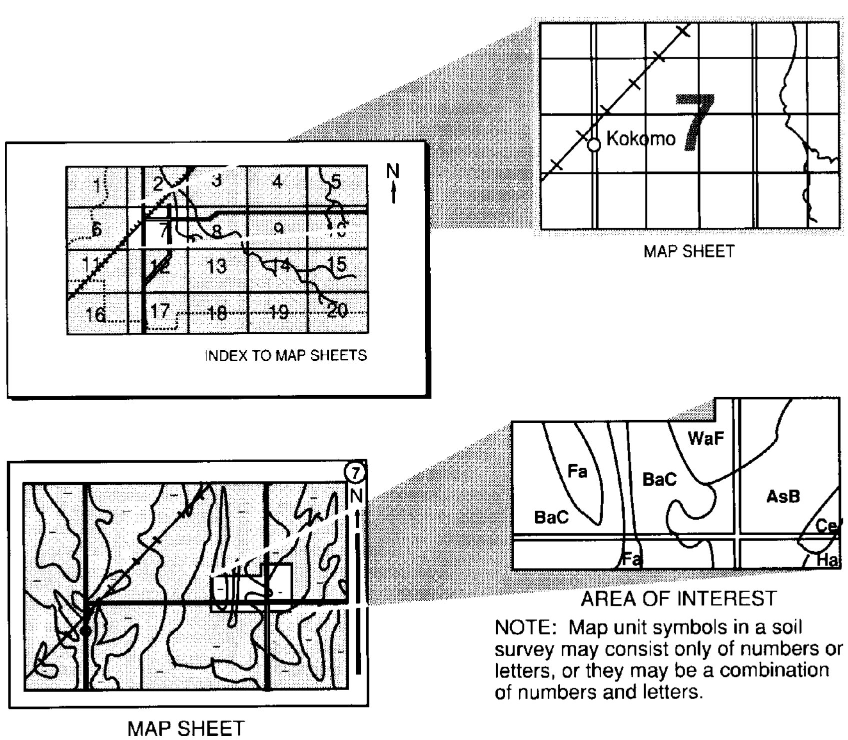
Detailed Soil Maps

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

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

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

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



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

Major fieldwork for this soil survey was completed in 1999. Soil names and descriptions were approved in 2002. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 2002. This survey was made cooperatively by the Natural Resources Conservation Service and the Cornell University Agricultural Experiment Station. The survey is part of the technical assistance furnished to the Cattaraugus 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.

Cover: Prime farmland area of Chenango gravelly silt loam and Olean silt loam in the foreground, with areas of moderately steep Schuyler silt loam and Towerville silt loam in the background.

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

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Issued 2007

Foreword

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

This soil survey is designed for many different users. Farmers, ranchers, 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. Broad areas of soils are shown on the general soil map. The location of each soil is shown on the detailed soil maps. Each soil in the survey area is described. Information on specific uses is given for each soil. Help in using this publication and additional information are available at the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Ronald R. Alvarado
State Conservationist
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Soil Survey of Cattaraugus County, New York

By Paul S. Puglia, Natural Resources Conservation Service

Fieldwork by Steven E. Antes, Gerald B. Brauen, Matthew W. Havens, Paul S. Puglia, Victoria S. Smith, and John P. Wulforst, Natural Resources Conservation Service

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

CATTARAUGUS COUNTY is located in the southwestern part of New York (fig. 1). The county is bounded on the north by Erie and Wyoming counties; on the west by Chautauqua County and on the east by Allegany County. The northwestern corner is bounded by the Cattaraugus Indian Reservation and the southern boundary is the north line of the state of Pennsylvania.

Cattaraugus County has a total land area of 811,600 acres, or approximately 1,268 square miles (USDA, 1997). Little Valley is the county seat.

The New York State Department of Environmental Conservation manages approximately 33,685 acres of land used for reforestation and wildlife areas. Also, there are 64,800 acres in Allegany State Park, which is managed by New York State Office of Parks Recreation and Historic Preservation.

In 1997, about 25 percent of the land area in the county was used for farming (U.S. Department of Commerce, 1997). Of this area, about 55 percent was used for cropland and pasture and about 30 percent was farm woodlots.

The number of farms in Cattaraugus County has steadily declined over the years. At its peak in 1935, there were 593,743 acres of farmland with 4,760 farms in the county compared with 252,564 acres in farmland and 1,211 farms in 1982. The 1997 Census of Agriculture lists 192,015 acres of farmland with 946 farms; however, the average size of the individual farms increased from 125 acres in 1935 to 203 acres in 1997.

Cattaraugus County is primarily in the Allegheny Plateau physiographic province, and the Erie-Ontario Plain province. In the plateau province the principal agricultural enterprise is dairy farming. Corn and hay are the main crops, but some small grain is grown. In 1997, about 51,152 acres was used for hay, 15,667 acres for corn silage, 4,657 acres for grain corn, and 2,260 acres for small grains, mainly oats. Another 50,000 acres was listed as non-cultivated cropland (U.S. Department of Commerce, 1997). In 1935, in contrast, hay was the most important crop both in acreage and value with 121,535 acres devoted to hay, 14,915 acres for corn silage, 1,016 acres harvested for grain corn, and 22,032 acres of small grains, mainly oats (USDA, 1940).

Dairy farming is the primary enterprise of the agriculture industry in Cattaraugus County. The production of vegetables and horticultural crops is a growing sector of the industry, primarily in the lake plain province with its moderate temperatures and longer frost free days. The main agricultural enterprise in this region is growing grapes, vegetables, orchard crops, or small fruit and nursery crops.

In addition to these products, maple syrup is an important commodity in the survey area. Cattaraugus County currently is rated ninth among the counties of New York in

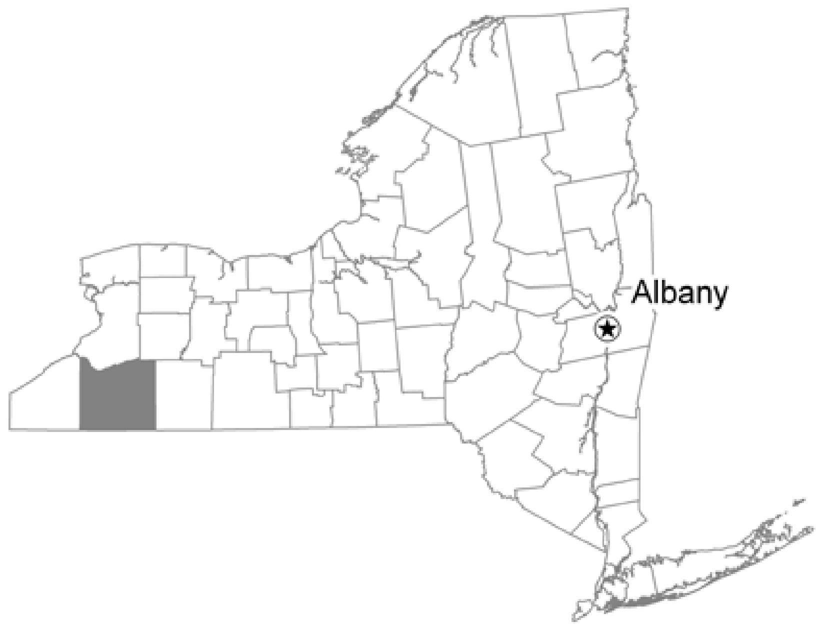

Figure 1.—Location of Cattaraugus County in New York.

the production of maple syrup, with an average annual output of about 10,000 gallons.

More than 65 percent of Cattaraugus County is woodland; therefore, commercial timber production is a viable industry. Most of the natural stands are represented by mixed hardwoods dominated by sugar maple, red oak, black oak, white ash, and American beech. Many wooded areas have been cut over several times for timber production.

This survey updates an older soil survey of Cattaraugus County issued March 1940 (USDA, 1940). It provides larger aerial photographic maps, which shows the soils and cultural features in greater detail. The present survey also provides more current soil interpretation.

General Nature of the County

This section provides general information about Cattaraugus County. It describes the history and development, physiography and geology, drainage, water supply, transportation facilities, and climate.

History and Development

When first explored by white men, this area comprising of Cattaraugus County, was covered by vast forests of eastern white pine, eastern hemlock and mixed hardwoods among which sugar maple, American beech, northern red oak, and black cherry were dominant. Cattaraugus County was part of the original Holland Land Company holdings purchased from the Indians in 1787. The Allegany Indian Reservation was established in 1797 and includes territory on both sides of the Allegheny River and Allegheny Reservoir, from the Pennsylvania state line east to Vandalia. The Cattaraugus Indian Reservation, in the extreme northwestern corner of the county, and Oil Springs near Cuba, New York are also under the jurisdiction of the Seneca Nation of Indians. The act of 1808 established Cattaraugus County with its present boundaries from the territory of Genesee County.

The first settlement was made by Quakers, a school for the Indians, in 1798 at Oldtown in the Allegany Indian Reservation. Settlement began at Olean Point about 1804, and the county government was established in 1817. In 1807 the first trip from Olean to Pittsburgh was made on a raft and marked the beginning of an immense lumbering industry. This area flourished and the village of Olean became the gateway to the western part of the country by way of the Allegheny and Ohio rivers.

Many of the present inhabitants of Cattaraugus County are descendents of the early settlers. In 1970, the population of the county was listed as 81,666 (Ellis, 1976). Olean, the largest city, had a population of 19,169, while Salamanca was second with 7,877 inhabitants. Salamanca reached its peak in 1940 with a population of 9,011, and Olean had a population of 22,884 in 1950. The 1990 census reports a population of 16,946 for the city of Olean, 6,566 for Salamanca, and 84,234 for Cattaraugus County. The county's rural population has shown a slow but steady increase, while there has been a slight decline in the population of the cities.

Education has been important since the county's early development. St. Bonaventure located between the city of Olean and the village of Allegany was founded in 1858 by the Franciscan Friars, Holy Name Province. St. Bonaventure is a Catholic university in the 750-year-old Fransican tradition of learning.

The Kinzua Dam, constructed from 1960 to 1965, is located 6 miles south of the New York and Pennsylvania boundary on the Allegheny River. The primary benefits of the Kinzua Dam and Allegheny Reservoir are flood control, low flow augmentation, hydroelectric power, fish and wildlife management, and recreation. The Allegheny Reservoir provides adequate water supply for domestic, industrial, and navigational needs for the Allegheny River. The reservoir, in New York state, is surrounded by the Allegany Indian Reservation and to a lesser extent by Allegany State Park. The summer pool has approximately 10,000 acres of surface water within Cattaraugus County.

The first crude oil in the United States was found on a plot owned by the Seneca Nation of Indians at Oil Springs, near Cuba Lake, in 1627 by a Franciscan monk. The first oil well in this county was drilled in 1865 near Limestone, in what is now Allegany State Park. As many as 5,100 producing wells were counted in the county. Most of these are no longer in production, but one of them drilled in 1877 near Allegany, is still active and is ranked among the oldest well in the area. Today, working wells may be seen in the Olean-Allegany-Knapp Creek area (fig. 2).

Cattaraugus County is well supplied with both highways and railroads. Although it contains many productive farms and a variety of light industries, increasing emphasis is being placed on resort and recreational development with Allegany State Park, Allegheny Reservoir, and several ski resorts as the central attraction.

Physiography and Geology

Among New York counties, Cattaraugus County includes both glaciated and unglaciated landscapes. Within the borders of Cattaraugus County there are three physiography provinces: the Erie-Ontario Plain province, the glaciated Allegheny Plateau province, and the unglaciated Allegheny Plateau province. The Erie-Ontario Plain province is a small area of lowland in the northwest corner of the county which occupies less than 5 percent of the county. It is characterized with low relief, gently terraced by wave action in former pre-glacial lakes, with a series of very narrow ravines cut across by a number of streams. The lowest elevation in Cattaraugus County is just over 600 feet where Cattaraugus Creek leaves the county at the extreme northwest corner.

Figure 2.—Typical oil well pump that dot the landscape in the oil production areas in the Olean-Allegany-Knapp Creek areas.

The glaciated Allegheny Plateau province occupies about 75 percent of the county. The plateau is characterized by steep valley walls, wide ridge tops and flat-topped hills between drainageways. The Allegheny Plateau in Cattaraugus County is intersected by a number of broad, flat-bottomed valleys, presently occupied by sluggish, meandering streams. The topography is strongly influenced by the underlying bedrock, which is nearly level bedded. The Allegheny Plateau extends south from Cattaraugus Creek to just north of the Allegheny River. On the glaciated Allegheny Plateau, the elevation rises from about 1,400 feet in the major valleys to 2,200 feet. The greater part of the upland plateau lies between elevations of 1,600 to 2,000 feet.

The unglaciated Allegheny Plateau province occupies the lower 20 percent of the county, following the general course of the Allegheny River. This crudely triangular area of New York, the so called Salamanca Re-entrant, escaped glaciation and is the most northerly region of unglaciated landscapes in eastern North America (Muller, 1977). The contrast in relief between the glaciated and unglaciated parts of the county are striking. This area has more rugged topography, has longer and steeper slopes, has deeply incised and V-shaped valleys, and does not have the irregular, hilly characteristics typical of much of the glaciated areas. The elevation rises from 1,284 feet, at the point where the Allegheny River enters Pennsylvania, to about 2,400 feet at the top of the plateau. The maximum recorded elevation, 2,430 feet, occurs at Claire benchmark in the town of Allegany, USGS Knapp Creek New York, Topographic Quadrangle.

From the unglaciated summits south of Olean to the floodplain of Cattaraugus Creek northwest of Gowanda, the total relief in Cattaraugus County is 1,825 feet, a range of elevation greater than any other western New York county.

Cattaraugus County contains bedrock that dates back 300 to 400 million years to the Devonian, Mississippian, and Pennsylvanian periods of the Paleozoic Era (Tesmer, 1975). Many of these rocks contain the remains of typical shallow water marine invertebrates of that time. Formations of the Upper Devonian are at the lower elevations, while those of the Pennsylvanian are at the higher elevations. In general, the older rock strata occur in northern Cattaraugus County while the younger rocks are found to the south near the Pennsylvania state line, capping the tops of the highest hills. The stratum of bedrock is generally horizontal but has a slight dip to the south or south-southwest, of approximately 40 feet per mile (Flint, 1947).

The oldest bedrock formation is of the Devonian period. In Cattaraugus County it is the Hanover Shale. The Hanover Shale, which is of the Java Group, consists of gray shale about 90 feet thick. It occurs as a narrow band in the extreme northeastern part of the county and is exposed along the cliffs of Cattaraugus Creek.

The Canadaway Group, which is a succession of black and gray shales that include some thin siltstone layers, occurs above the Java Group. Total thickness of the Canadaway Group is about 1,000 feet and is subdivided into seven members. The oldest of these are the Dunkirk Shale, which is about 85 feet thick, and is well exposed along the cliffs of Big Indian Creek and Cattaraugus Creek near the village of Perrysburg.

The South Wales Shale, which overlies the Dunkirk Shale, is dominantly gray shale approximately 50 feet thick. The South Wales exposures are along Big Indian Creek in the town of Perrysburg, as well as along Cattaraugus Creek upstream from Versailles to Gowanda. Above the South Wales Shale is the Gowanda Shale member, which consists of 280 feet of mainly gray shale that has thin bands of black shale and gray siltstone. This member is exposed along Cattaraugus Creek upstream from the village of Gowanda and along Big Indian Creek and parts of Little Indian Creek in the town of Perrysburg.

The next member of the Canadaway Group is the Laona Member, which is of variable thickness, locally as much as 20 feet thick. The Laona consists of light gray siltstone. The most prominent exposures of this unit are along Big Indian Creek and Little Indian Creek in northwestern Cattaraugus County. Above the Laona Member is about 160 feet of gray shale that includes thin beds of gray siltstone. This shale, called the Westfield Member, is best viewed along the east branch of Big Indian Creek in the town of Perrysburg.

The Shumla Member overlies the Westfield Member of the Canadaway Group. This siltstone member is about 5 feet thick with exposures along the east branch of Big Indian Creek in the town of Perrysburg. The Shumla Member consists largely of light gray siltstone. The upper 400 feet of the Canadaway Group is represented by the Northeast Member, which consists of gray shale that includes considerable interbedded gray siltstone. Although limited exposures of the Northeast Shale occur in road cuts and stream cuts in the town of Dayton, the most significant exposures can be seen along the road south of the hamlet of Persia.

The Conneaut Group, also referred to as the Chadakoin Formation, consists of various transitional beds, which have not been subdivided into members in Cattaraugus County. The thickness of the Conneaut Formation varies from about 550 feet to 750 feet in Cattaraugus County. The basal portion contains gray siltstone or fine sandstone with some interbedded gray shales and silty shales. The middle and upper parts consist of interbedded gray shale and gray siltstone. Conneaut exposures are too numerous to list completely; they occur in nearly every township as seen on US Geologic Maps (Richard and Fisher, 1970). Some of the extensive exposures include road and stream cuts in the towns of New Albion, Leon, and The Narrows in Napoli.

The Conewango Group was deposited at the close of the Devonian period. This group, which varies from 425 to 525 feet thick, is divided into the Venango and

Oswayo formations. The Venango Formation, also referred to as the Cattaraugus Formation, includes several beds of conglomerate about 250 to 400 feet thick. In Cattaraugus County this formation is further subdivided into three members whose precise stratigraphic positions are still undetermined (Tesmer, 1975). These conglomerate beds include the Pope Hollow, Salamanca, and Wolf Creek Conglomerate members. These conglomerates are similar in lithology. They contain pebbles that generally range from 1/4 to 2 inches in size. These flat discoidal pebbles are usually milky quartz generally parallel to bedding and imbedded in a dark gray quartzitic matrix. The most prominent exposures occur adjacent to Little Rock City Road and at Little Rock City. Many less accessible conglomerate outcrops occur from the village of Little Valley south to Allegany State Park. Loose, slumped blocks of conglomerate are widespread, and care must be taken not to mistaken these boulders for bedrock exposure.

The Oswayo Formation overlies the Cattaraugus Formation and consists of about 150 to 210 feet of gray to olive-green shales interbedded with thin layers of micaceous siltstone and sandstone. Oswayo Formation exposures occur along road cuts at the Allegany State Park entrance road south of the city of Salamanca, and in road ditch exposures near Thunder Rocks in Allegany State Park.

The Pocono Group was deposited during the Lower Mississippian period and is represented by two conglomerates or sandstone separated by sandy shale beds. In Cattaraugus County, the Pocono Group is represented by only the Knapp Formation. This formation, about 100 feet thick, consists of conglomerate or gray sandstone separated by sandy shale beds. The conglomerate is loosely cemented with small-flattened discoidal quartz pebbles. The flat pebbles of the Knapp Formation indicate a marine environment, in contrast to the more spherical pebbles of the overlying Olean Conglomerate that reflects an alluvial or stream environment. Knapp Conglomerate exposures occur as a caprock for various hills in the towns of South Valley, Red House, and Limestone; and in the vicinity of the hamlets of Knapp Creek and Rock City.

The youngest bedrock in Cattaraugus County is of the Pottsville Group deposited during the Lower Pennsylvanian period (Tesmer, 1975). The Pottsville Group consists of the Olean Conglomerate and the Sharon Shale. The Olean Conglomerate overlies the Knapp Conglomerate and is about 80 feet thick. The Olean varies from a massive conglomerate with well-rounded pebbles to coarse quartz sandstone containing only a few pebbles. The quartz pebbles range from 0.25 to 3 inches in diameter and are spherical, indicating an alluvial or stream environment. Prominent exposures occur as caprock on various hills at higher elevations at Thunder Rocks in Allegany State Park; in the vicinity of Flatiron Rock; and on various hills in the town of Allegany particularly at Rock City Park. During World War II, quartz pebbles from the Olean conglomerate were used for the manufacture of ferro-silicon at Niagara Falls, New York. The Sharon Shale overlying the Olean Conglomerate consists of several feet of black shales. The Sharon Shale is not well exposed in Cattaraugus County and only a few feet of black shale occur above the Olean Conglomerate in the vicinity of Rock City Park.

Cattaraugus County experienced several advances and retreats of glacial ice during the Pleistocene ice age. The ice age began about 300,000 years ago and ended during the late Wisconsin glaciation, about 12,000 to 17,000 years ago (Muller, 1977). In Cattaraugus County, the earlier glaciation was covered or destroyed by two later Wisconsin glacial advances, an earlier advance by the Altonian substage from the northeast, and the later Woodfordian substage from the northwest (Muller, 1977). The glacial advance during Altonian time moved into Cattaraugus County from the northeast and deposited sediments referred to as the Olean drift. The Woodfordian substage advanced from the northwest and deposited sediments referred to as the Kent drift. Terminal moraines and end moraines are associated with these glacial advances. A 75 mile long portion of terminal moraine is found in southwestern New York state. Although much of the terminal moraine is in Pennsylvania, it swings northward making a curve through Cattaraugus County. The area south of the terminal moraines is referred to as the Salamanca Re-entrant and is the only part of New York state that has not been glaciated. With each southern movement, the ice picked up soil material and pieces of bedrock, and ultimately redeposited a mixture of unconsolidated material of varying size, shape, and mineral content. The last advance stripped earlier deposits and laid down the mantle in which most of the present-day soils formed.

As the climate warmed and the melting of the ice overcame the glacial advance, the glacier began to recede. The first areas to be exposed were the uplands, where the ice was the thinnest. Because the deposited material was quite variable, different soils formed in it. The mixture of rock fragments and finer particles deposited by the ice in these upland areas is called glacial till. The thickness of this till is quite variable and can range from a few feet on some hilltops to more than 10 feet below the higher ridges. Some examples of soils that formed in deep glacial till are those of the Mardin, Volusia, and Napoli series. The soils of the Ischua, Monguap, and Towerville series are examples of soils that formed in glacial till that are only 20 to 40 inches thick over bedrock.

As the glacial ice melted and receded, further exposing valley areas, large quantities of melt water discharging from the glacial front carried rock and soil debris, which was deposited as valley train terraces, kames and eskers. Nearly level or undulating valley train terrace deposits occupy the floors of many valleys. All of these postglacial fluvial deposits generally are referred to as outwash or glaciofluvial deposits, and consist mainly of stratified sand and gravel. Chenango and Castile soils are examples of soils that formed in glacial outwash deposits.

Before glaciation, the pre-glacial Allegheny River and its tributaries flowed northward to Cattaraugus Creek and then into the Lake Erie basin. As the glacier continued to retreat northward, melt water was trapped in the larger valleys between moraines to the south and the ice front. Consequently, glacial lakes were formed in the major valleys. Fine soil particles carried in suspension by the melt waters settled to the bottom of these glacial lakes. Glaciolacustrine deposits such as these are on the floor and lower side slopes of the valleys. Rhinebeck and Canandaigua soils, which are free of stones, are examples of soils that formed in these glaciolacustrine deposits.

Erosion and sedimentation have been taking place continually since the ice retreated. Steep, fan-shaped alluvial deposits have accumulated at the mouth of the lateral streams, where the velocity of the water slowed and the sand and gravel dropped out of suspension. Chenango and Castile soils formed in these deltaic deposits. Silty alluvial sediments from flood-prone streams are examples of the more recent deposits that are not related to glaciation. Middlebury and Wakeville soils formed in recent alluvial deposits on flood plains.

The southern section of Cattaraugus County is unglaciated. The soils in these areas formed in residuum of the Mississippian and Pennsylvanian bedrock or in colluvial deposits of the side slopes. The Mississippian and Pennsylvanian bedrock in these areas are primarily sandstone, siltstone or sandstone conglomerate. The Mandy soils formed in residuum weathered from sandstone and siltstone, and the Knapp Creek and Flatiron soils formed in residuum weathered from sandstone conglomerate. The Carrollton, Kinzua, Gilpin and Rayne soils formed in residuum weathered from sandstone and siltstone from the members of the Mississippian and Pennsylvanian bedrock and from the Devonian shale where the overlying, younger sandstone has been eroded away. The reworked colluvium from the higher areas is the parent material for the Onoville, Shongo, Buchanan, and Portville colluvial soils.

Drainage

The drainage system of Cattaraugus County is separated into two systems: the Lake Erie-St. Lawrence River system and the Allegheny-Ohio-Mississippi River system. The drainage from the northern one-third of the county flows northward and then west into the Lake Erie-St. Lawrence system and the southern two-thirds of the county flows southward into the Allegheny-Ohio-Mississippi River system.

The principal stream of Cattaraugus County is the Allegany River, which rises in Pennsylvania, enters New York at the southeastern corner of the county, swings north and then southwest to Pennsylvania near the southwestern corner of the county. The Allegany River is a broad and gentle stream with broad alluvial flats winding its way between hills on either side of its shores. In its course through New York several tributaries joining the Allegany from the south include Quaker Run, Red House, Tunungwant, Chipmunk, and Four Mile Creek. Those flowing in from the north are Cold Spring, Little Valley, Great Valley, Five-Mile, Dodge, Haskell, and Oswayo Creek. The junction of Ischua and Oil Creek form Olean Creek which flows into the Allegany River from the north. A considerable portion of the county adjoining the western border is drained by Conewango Creek and its tributaries. Conewango Creek rises near New Albion and flows northwest and then southward through a broad, flat valley 1.5 to 3.0 miles wide. For most of its length, Conewango Creek has fall of less than 2 feet per mile. These low gradients cause the creek to meander back and forth across the valley floor. Where the Conewango Creek joins its water with those of the Allegany River in Pennsylvania, the two streams are about equal in volume.

In the northern part of the county, the principal drainage system for the upland plateau is Cattaraugus Creek and its tributaries. Next to the Allegany River in importance is Cattaraugus Creek, which rises in Wyoming County flowing in a west and northwest course into Lake Erie. In some places it flows through wide and fertile alluvial flats, but in the western part it passes between cliffs from 100 to 350 feet in height. Cattaraugus Creek forms the boundary line between the counties of Cattaraugus and Erie. Numerous tributaries, rising in the county, enter Cattaraugus Creek from the south. Of these are the Connoisarauley, which flows into Cattaraugus Creek near the center of the county, and the South Branch of Cattaraugus Creek, which enters several miles downstream. Other major streams which flow into Cattaraugus Creek include Mansfield Creek, Buttermilk Creek, Elton Creek, and Clear Creek.

Water Supply

The main sources of water in Cattaraugus County are from drilled wells, streams, and surface water stored in reservoirs.

There are 14 public water systems in the county. The largest system is that for Olean, which serves the urban and suburban area around the city of Olean. It draws water from Olean Creek and several wells within the city limits. Gowanda is the only village that uses surface water stored in an upland reservoir. The rest of the public water systems use drilled wells as a source of water.

Water for rural areas and for other developments is obtained largely from drilled wells. Water for a few homes in rural sections is provided by shallow wells or developed springs. Ponds or streams also furnish water for livestock.

Although ground water is available everywhere in the area, bedrock wells generally provide lower yields and a poorer quality of water. The most productive water-bearing deposits are those that are in aquifers consisting of unconsolidated deposits derived from glacial outwash and from deltaic deposits of sand and gravel.

Transportation Facilities

Cattaraugus County is served by several railroad systems. Salamanca’s location is crucial in that it is located on the north/south and east/west crossroads for the rail system. A number of short line railroads service the area with connections to the main lines in Salamanca.

Interstate 86 (also known as the Southern Tier Expressway and formerly designated as State Route 17) is the main highway running from east to west in the southern part of the county. New York Route 219 and Route 16 are the two main highways running from north to south connecting Cattaraugus County with the Buffalo area to the north and Bradford area to the south. Other New York routes that run in a northeast or northwest direction are Routes 62, 353, 242, 98, and 240. New York Routes 394, 446, 305, and 417 run in an east/west direction in the southern part of the county.

Commercial airline service is available at the Olean County Airport, just north of Olean. Commercial airline service also is available at Buffalo Niagara Airport in Buffalo, New York and airports at Bradford and Erie, Pennsylvania.

Climate

Table 1 gives data on temperature and precipitation for the survey area as recorded at Little Valley, New York, in the period from 1948 to 1999. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter, the average temperature is 24 degrees F and the average daily minimum temperature is 15 degrees F. The lowest temperature on record at Little Valley was -28 degrees F. In summer, the average temperature is 65 degrees F and the average daily maximum temperature is 77 degrees. The highest temperature on record, which occurred at Little Valley, is 96 degrees F.

Growing 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 (40 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 about 49 inches. Of this, 25 inches, or about 50 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 16 inches. The heaviest 1-day rainfall during the period of record at Little Valley was 3.6 inches.

The average seasonal snowfall is about 146 inches. The greatest snow depth for one month during the period of record was 100 inches. On the average, 94 days of the year have at least 1 inch of snow on the ground. The number of such days varies greatly from year to year.

How This Survey Was Made

This survey was made to provide information about the soils and miscellaneous areas in the survey area. The information includes a description of the soils and miscellaneous areas and their location and a discussion of their suitability, limitations, and management for specified uses. Soil scientists 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 landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept or model of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

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

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, 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 (USDA, 1998), 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 from field-observed soil properties and characteristics, to determine the expected behavior of the soils for different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

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

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.

Map Unit Composition

A map unit delineation on a soil map represents an area dominated by one major kind of soil or an area dominated by two or three kinds of soil. A map unit is identified and named according to the taxonomic classification of the dominant soil or soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural objects. In common with other natural objects, they have a characteristic variability in their properties. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of soils of other taxonomic classes. Consequently, every map unit is made up of the soil or soils for which it is named and some soils that belong to other taxonomic classes. These latter soils are called inclusions or included soils.

Most inclusions have properties and behavioral patterns similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting (similar) inclusions. They may or may not be mentioned in the map unit descriptions. Other inclusions, however, have properties and behavior divergent enough to affect use or require different management. These are contrasting (dissimilar) inclusions. They generally occupy only small areas and therefore cannot be shown separately on the soil maps because of the scale used in mapping. The inclusions of contrasting soils are mentioned in the map unit descriptions. A few inclusions may not have been observed and consequently are not mentioned in the descriptions, especially where the soil pattern was so complex that it was impractical to make enough observations to identify all of the kinds of soil on the landscape.

The presence of inclusions in a map unit in no way diminishes the usefulness or accuracy of the soil data. The objective of soil mapping is not to delineate pure taxonomic classes of soils, 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 onsite investigation is needed to plan for intensive uses in small areas.

General Soil Map Units

The general soil map in this publication shows broad areas that have a distinctive pattern of soils, relief, and drainage. Each map unit on the general soil map is a unique natural landscape. Typically, it consists of one or more major soils or miscellaneous areas and some minor soils or miscellaneous areas. It is named for the major soils or miscellaneous areas. The components of one map unit can occur in another but in a different pattern.

The general soil map can be used to compare the suitability of large areas for general land uses. Areas of suitable soils can be identified on the map. Likewise, areas where the soils are not suitable can be identified.

Because of its small scale, the map is not suitable for planning the management of a farm or field or for selecting a site for a road or building or other structure. The soils in any one map unit differ from place to place in slope, depth, drainage, and other characteristics that affect management.

The general soil map of Cattaraugus County joins with those of adjacent counties having published soil surveys, which are identified in the following paragraphs.

Allegany County, New York—This county does not have a modern published soil survey and general soil map. A survey is currently in progress.

Chautauqua County, New York—Except for differences in the design of the legend for the detailed map units, the general soil maps of Cattaraugus and Chautauqua counties have a satisfactory join.

Erie County, New York—Except for differences in the design of the legend for the detailed map units, the general soil maps of Cattaraugus and Erie counties have a satisfactory join. Erie County is separated by a double line stream.

McKean County, Pennsylvania—Except for differences in the design of the legend for the detailed map units that include soils that formed in mesic and frigid residual material and are along the border with McKean County, the general soil maps of McKean County and Cattaraugus County can be joined. The difference in temperature regimes will be resolved when McKean County is digitized and frigid soils are correlated. The Cattaraugus County Soil Survey will be accepted as correct on its borders with these counties. In all cases, delineations separating general soil map units in areas of residual material from those in areas of glacial outwash and alluvium join across the survey boundary.

Seneca Nations of Indians, New York—The published soil survey of the Seneca Nations of Indians does not contain a general soil map.

Warren County, Pennsylvania—Except for differences in the design of the legend for the detailed map units that include soils formed in mesic and frigid residual material and are along the border with Warren County, the general soil maps of Warren County and Cattaraugus County can be joined. The difference in temperature regimes will be resolved when Warren County is digitized and frigid soils are correlated. The Cattaraugus County Soil Survey will be accepted as correct on its borders with these counties. In all cases, delineations separating general soil map units in areas of residual material from those in areas of glacial outwash and alluvium join across the survey boundary.

Wyoming County, New York—Except for differences in the design of the legend for the detailed map units, the general soil maps of Cattaraugus and Wyoming counties have a satisfactory join.

The general soil map units in this survey have been grouped into general kinds of landscape for broad interpretive purposes. Each of the broad groups and the map units in each group are described in the following pages.

Map Unit Descriptions

Areas Dominated by Very Deep Soils that Do Not Have a Fragipan and that Formed in Glacial Till

These soils make up about 10 percent of the county. They are on valley plains and uplands. They are dominantly very deep, well to somewhat poorly drained, and nearly level to very steep.

1. Valois-Chautauqua-Busti

Dominantly gently sloping to strongly sloping, very deep, well drained to somewhat poorly drained, medium textured soils; on uplands

This map unit consists of soils that formed in loamy glacial till derived mainly from siltstone, sandstone, and some shale. The landscape consists dominantly of broad, rolling areas on valley plains and on some dissected side slopes on the upland plateau in the western part of the county. These areas are associated with terminal and lateral moraines. Slopes are dominantly 3 to 15 percent but range from 0 to 50 percent.

This unit makes up about 5 percent of the county and consists of 35 percent Valois soils, 25 percent Chautauqua soils, 20 percent Busti soils, and 20 percent soils of minor extent.

The Valois soils formed in very deep glacial till that is derived from sandstone, siltstone, and shale and commonly is intricately intermingled with or underlain by very gravelly glacial outwash. These soils are medium textured and moderately coarse textured, well drained and gently sloping to very steep. They are on low knolls, ridges, and hills on the lower valley sides and valley floors. The rate of water movement is moderate in the subsoil and moderate or moderately rapid in the substratum. The seasonal high water table is at a depth of more than 6 feet.

The Chautauqua soils are moderately well drained, medium textured, and nearly level to moderately steep. They are on convex hilltops and side slopes that receive little runoff from the adjacent soils. The rate of water movement is moderate in the surface layer and subsoil and moderately slow in the substratum. A water table is usually present in the middle part of the subsoil from late fall through spring.

The Busti soils are somewhat poorly drained and dominantly medium textured. They are nearly level to strongly sloping. They are in undulating areas, on the lower side slopes, and along drainageways that commonly receive runoff from the higher adjacent soils. The rate of water movement is moderately slow or moderate in the surface layer and subsoil, and slow or moderately slow in the substratum. A water table is in the upper part of the subsoil from late fall through spring.

The soils of minor extent include Ashville, Chadakoin, Dalton, Erie, Holderton, Red Hook, and Wayland soils. The poorly drained Ashville soils are along drainageways, in depressional areas. The well-drained Chadakoin soils are in areas where these soils adjoin glacial till. The somewhat poorly drained Dalton and Erie soils are on uplands and have a fragipan. The somewhat poorly drained Red Hook soils are in lower outwash plains and contain more rock fragments in the subsoil. The somewhat poorly drained Holderton and poorly drained Wayland soils are along the narrow drainageways that are adjacent to some areas of the unit.

Most areas of this unit have been cleared and are farmed. Scattered areas of the wetter soils and the steep soils on side slopes remain wooded, or are idle land covered with brush. Many areas at the higher elevations and along escarpments that were cleared for farming are now idle land or have reverted to woodland. The major soils are better suited to corn, small grain, and hay than many of the other soils in the county. Stripcropping is common. Erosion control and supplemental drainage of the wetter areas are the main management needs in cultivated areas. The depth to the saturated zone and the moderately slow movement of water in the substratum are the main limitations affecting community development.

2. Fremont-Schuyler

Dominantly gently to strongly sloping, very deep, somewhat poorly drained and moderately well drained, medium to moderately fine textured soils that has a low content of lime; on uplands

This map unit consists of soils that formed in acid glacial till derived mainly from shale, siltstone, and some sandstone. The landscape is dominantly broad summits and saddles and dissected side slopes on plateaus. The unit is mainly in the north central and northwestern part of the county. Slopes are dominantly 3 to 15 percent but range from 0 to 50 percent.

This unit makes up 2 percent of the county and consists of about 50 percent Fremont soils, 30 percent Schuyler soils, and 20 percent soils of minor extent.

The Fremont soils are somewhat poorly drained and are nearly level to strongly sloping. They are on broad upland flats, in saddles, and on side slopes. The subsoil and substratum are medium to moderately fine textured. The rate of water movement is moderate in the surface layer, moderately slow or moderate in the upper part of the subsoil, and very slow or slow in the lower part of the subsoil and substratum. A seasonal high water table is in the upper part of the subsoil from late fall through spring.

The Schuyler soils are moderately well drained and are gently sloping to very steep. They are in convex areas on the summits and dissected side slopes of the plateau. The subsoil and substratum are medium textured to moderately fine textured. The rate of water movement is moderate in the surface layer, moderate or moderately slow in the subsoil, and slow or moderately slow in the substratum. A seasonal high water table is in the lower part of the subsoil from late fall through spring.

The soils of minor extent include Towerville, Orpark, Ashville, Canaseraga, Mardin, and Volusia soils. The moderately well drained Towerville soils and the somewhat poorly drained Orpark soils are the most extensive of the minor soils. They are in many areas where shale bedrock is at a depth of 20 to 40 inches below the surface. The poorly drained Ashville soils are on flats or along drainageways. The moderately well drained Canaseraga and Mardin soils and the somewhat poorly drained Volusia soils are in upland areas and have a dense fragipan in the subsoil.

Most areas of this unit are used for crops grown in support of dairy farming. Some areas were originally cleared and farmed, but have now been reforested or are naturally reverting to woodland. The difficulty of controlling erosion and installing drainage systems is the main limitation affecting farming. The depth to the saturated zone, the slope, and the slow or very slow movement of water in the substratum are the main limitations affecting community development.

3. Salamanca-Almond

Dominantly gently to strongly sloping, very deep, somewhat poorly drained and moderately well drained, medium to moderately fine textured soils that have a low content of lime; on uplands above elevations of 1,800 feet

This map unit consists of soils that formed in acid glacial till derived mainly from shale, siltstone, and some sandstone. The landscape is dominantly broad summits and saddles and dissected side slopes on plateaus at elevations above 1,800 feet. The unit is mainly in the central part of the county. Slopes are dominantly 3 to 15 percent but range from 0 to 35 percent.

This unit makes up 3 percent of the county and consists of 55 percent Salamanca soils, 30 percent Almond soils, and 15 percent soils of minor extent.

The Salamanca soils are moderately well drained and are gently sloping to steep. They are in convex areas on the summits and dissected side slopes of the plateau. The subsoil and substratum are medium to moderately fine textured. The rate of water movement is moderate in the surface layer and upper part of the subsoil, moderately slow to very slow in the lower part of the subsoil and in the substratum. A seasonal high water table is in the lower part of the subsoil from late fall through the spring.

The Almond soils are somewhat poorly drained and are nearly level to strongly sloping. They are on broad upland flats, in saddles, and on side slopes. The subsoil and substratum are medium textured and moderately fine textured. The rate of water movement is moderate or moderately slow in the subsoil and slow to very slow in the substratum. A seasonal high water table is in the upper part of the subsoil from late fall through spring.

The soils of minor extent include Ischua, Gretor, Yorkshire, and Napoli soils. The moderately well drained Ischua soils and the somewhat poorly drained Gretor soils are the most extensive of the minor soils. They are in many areas where shale bedrock is at a depth of 20 to 40 inches below the surface. The moderately well drained Yorkshire and the somewhat poorly drained Napoli soils are in upland areas and have a dense fragipan in the subsoil.

Most areas of this unit are used for crops grown in support of dairy farming. The use of short-season or early maturing crop varieties is recommended. Many areas at the higher elevations were originally cleared and farmed, but have now been reforested or are naturally reverting to woodland. The difficulty of controlling erosion and installing drainage systems is the main limitation affecting farming. The depth to the saturated zone, the slope, and the slow or very slow movement of water in the substratum are the main limitations affecting community development.

Areas Dominated by Very Deep Soils that Have a Fragipan and that Formed in Glacial Till

These soils make up 29 percent of the county. They are on upland and valley sides. They are dominantly very deep, somewhat poorly drained to moderately well drained, and nearly level to moderately steep.

4. Erie-Langford

Dominantly gently sloping to strongly sloping, very deep, somewhat poorly drained and moderately well drained, medium textured soils that have a fragipan and a medium content of lime; on uplands

This map unit consists of soils that formed in loamy glacial till derived from siltstone, sandstone, shale and some limestone. The landscape dominantly consists of broad, divided hilltops and hillsides on the upland plateau in the northern part of the county. Some areas have distinct drumlins. Slopes are dominantly 3 to 15 percent but range from 0 to 25 percent.

This unit makes up about 5 percent of the county and consists of 55 percent Erie soils, 25 percent Langford soils, and 20 percent soils of minor extent.

The Erie soils are somewhat poorly drained, nearly level to strongly sloping, and dominantly medium textured. They are on concave foot slopes, on the lower hillsides, and in broad divides. Some areas are along drainageways that commonly receive runoff from the higher adjacent slopes, and some are on flats where surface water is removed slowly. The rate of water movement is moderate in the surface and subsurface layer, and slow in the fragipan and substratum. The fragipan, which occurs at a depth of 10 to 21 inches, restricts root growth and forms a perched seasonal high water table in the upper part of the subsoil from late fall through spring and during other excessively wet periods.

The Langford soils are moderately well drained, gently sloping to moderately steep, and dominantly medium textured. They are in convex areas on hillsides, divides, ridges, low knolls, and hillsides. The rate of water movement is moderate in the surface layer and the upper part of the subsoil, and slow or very slow in the fragipan and substratum. The fragipan, which occurs at a depth of 15 to 28 inches, restricts root growth and forms a perched seasonal high water table in the subsoil for brief periods from late fall through spring and during other excessive wet periods.

The soils of minor extent include Ashville, Busti, Chautauqua, Darien, Schuyler, Fremont, and Chadakoin soils. The poorly drained Ashville soils are in depressional areas, along drainageways, and on low flats. The somewhat poorly drained Fremont soils and the moderately well drained Schuyler soils are on uplands and have a higher content of clay in the subsoil than the major soils. The somewhat poorly drained Busti soils and the moderately well drained Chautauqua soils are on the lower side slopes. They do not have a fragipan. The somewhat poorly drained Darien soils do not have a fragipan. They are in broad, undulating areas. The well drained Chadakoin soils are on steeper dissected side slopes.

Most of the cleared areas are used for crops grown in support of dairy farming. Providing drainage and controlling erosion are the main management needs if crops are grown. Interceptor drains are needed to divert runoff and subsurface seepage in many areas. The depth to the saturated zone and the slow movement of water in the fragipan are the main limitations affecting community development.

5. Volusia-Mardin

Dominantly gently to strongly sloping, very deep, somewhat poorly drained and moderately well drained, medium textured soils that have a fragipan and a low content of lime; on uplands

This map unit consists of soils that formed in loamy glacial till derived from siltstone, sandstone, and shale. The landscape consists of broad till plain divides and lower side slopes of the upland plateau that is dominantly in the northern and northwestern part of the county. Slopes are dominantly 3 to 15 percent but range from 0 to 25 percent.

This unit makes up about 24 percent of the county and consists of 35 percent Volusia soils, 30 percent Mardin soils, and 35 percent soils of minor extent (fig. 3).

The Volusia soils are somewhat poorly drained and are dominantly medium textured. They are nearly level to strongly sloping. They are mainly on the lower hillsides and concave foot slopes that receive runoff from the higher adjacent soils. Some areas are on the tops of broad, smooth divides where runoff is slow. The rate of water movement is moderate in the surface layer and the upper part of the subsoil, and slow or very slow in the fragipan and substratum. The fragipan, which occurs at a depth of 10 to 22 inches, restricts root growth and forms a perched seasonal high water table in the upper part of the subsoil from late fall through spring and during other excessively wet periods.

The Mardin soils are moderately well drained and are dominantly medium textured. They are gently sloping to moderately steep. They are in slightly concave areas on hilltops, knolls, ridges, and hillsides. The rate of water movement is moderate in the surface layer and upper part of the subsoil, and slow or very slow in the fragipan and substratum. The dense fragipan, which occurs at a depth of 14 to 26 inches, restricts root growth and forms a perched seasonal high water table for brief periods from late fall through spring and during other excessively wet periods.

The soils of minor extent include Ashville, Fremont, Busti, Canaseraga and Valois soils. The poorly drained Ashville soils are on concave toe slopes, in seepage areas, and in depressional areas. The somewhat poorly drained Fremont soils are on

Figure 3.—A typical area of the Volusia-Mardin general soil map unit. Mardin soils are on the steeper side slopes in the background, and Volusia soils are in the foreground.

summits of plateaus. Fremont soils do not have a fragipan. The somewhat poorly drained Busti soils are along the lower toeslopes. Busti soils do not have a fragipan. The moderately well drained Canaseraga soils are on broad flats and knolls. They have a distinct silt cap overlying a dense fragipan. The well drained Valois soils are on some ridges and knolls on the lower valley sides. Cleared areas of this unit are used for crops grown in support of dairy farming. Many areas that were cleared for farming are now idle or are reverting to woodland. Controlling erosion and providing drainage are the main management needs if crops are grown. Interceptor drains are needed to divert runoff and subsurface seepage in many areas. The depth to the saturated zone and the slow or very slow movement of water in the fragipan are the main limitations affecting community development.

Areas Dominated by Moderately Deep Soils and Very Deep Soils that Have a Fragipan and that Formed in Glacial Till

These soils make up 17 percent of the county. They are on upland and valley sides. They are dominantly moderately deep and very deep, moderately well drained and somewhat poorly drained, and nearly level to very steep.

6. Ischua-Yorkshire-Napoli

Dominantly gently sloping to steep, moderately deep and very deep, moderately well drained and somewhat poorly drained, medium textured soils that have a fragipan and a low content of lime; on uplands at elevations above 1,800 feet

This map unit consists of soils that formed in loamy glacial till derived from siltstone, sandstone, and shale. The landscape is dominantly broad summits and saddles and dissected side slopes on plateaus at elevations above 1,800 feet. The unit is dominantly in the central and eastern part of the county. Slopes are dominantly 3 to 35 percent but range from 0 to 50 percent.

This unit makes up about 16 percent of the county and consists of 40 percent Ischua soils, 20 percent Yorkshire soils, 20 percent Napoli soils, and 20 percent soils of minor extent.

The Ischua soils are moderately deep, moderately well drained and are dominantly medium textured. They are gently sloping to very steep. They are on convex hilltops and side slopes in areas where the topography is influenced by the underlying bedrock. The rate of water movement is moderate in the surface and upper subsoil, and moderately slow or slow in the lower subsoil. A seasonal high water table is in the lower part of the subsoil from late fall through spring and during other excessively wet periods.

The Yorkshire soils are very deep, moderately well drained and are dominantly medium textured. They are gently sloping to moderately steep. They are in slightly convex areas on hilltops, knolls, ridges, and hillsides. The rate of water movement is moderate in the surface layer and subsoil above the fragipan, and slow in the fragipan and substratum. The dense fragipan, which occurs at a depth of 16 to 30 inches, restricts root growth and forms a perched seasonal high water table for brief periods from late fall through spring and during other excessively wet periods.

The Napoli soils are very deep, somewhat poorly drained and are dominantly medium to moderately fine textured. They are nearly level to moderately steep. They are mainly on the lower hillsides and concave foot slopes that receive runoff from the higher adjacent soils. Some areas are on the tops of broad, smooth divides where runoff is slow. The rate of water movement is moderate to moderately slow in the surface layer and upper part of the subsoil, and slow or moderately slow in the fragipan and substratum. The fragipan, which occurs at a depth of 12 to 27 inches, restricts root growth and forms a perched seasonal high water table in the upper part of the subsoil from late fall through spring and during other excessively wet periods.

The soils of minor extent include Almond, Salamanca, Willdin and Mandy soils. The somewhat poorly drained Almond soils are on summits of plateaus. They do not have a fragipan. The moderately well drained Salamanca soils are on broad side slopes and knolls. They also do not have a fragipan. The moderately well drained Willdin soils are on broad summits and contain less clay in the subsoil. Mandy soils have less clay in the subsoil, and occur on higher unglaciated hilltops where the bedrock is 20 to 40 inches below the surface.

Cleared areas to this unit are used for crops grown in support of dairy farming. The use of short-season or early maturing crop varieties is recommended. Many areas at the higher elevations were originally cleared and farmed. These areas have been reforested or are naturally reverting to woodland. Controlling erosion and providing drainage are the main management needs if crops are grown. Interceptor drains are needed to divert runoff and subsurface seepage in many areas. The depth to the saturated zone and the slow movement of water in the fragipan are the main limitations affecting community development.

7. Hornell-Orpark

Dominantly gently to strongly sloping, moderately deep, somewhat poorly drained, moderately fine textured soils that have a low content of lime; on uplands

This map unit consists of soils that formed in acid glacial till derived from siltstone and shale. These soils are on crests and side slopes on uplands and along escarpments in the northwestern part of the county. This unit is of minor extent in Cattaraugus County. Slopes are dominantly 3 to 15 percent but range from 0 to 25 percent.

This unit makes up about 1 percent of the county and consists of 40 percent Hornell soils, 30 percent Orpark soils, 30 percent soils of minor extent.

The Hornell soils formed in moderately deep glacial till that has a high content of clay. These soils are 20 to 40 inches deep over bedrock and are nearly level to moderately steep. They are in convex areas on hilltops and summits and on valley sides. The rate of water movement is moderate in the surface layer, and slow or very slow in the subsoil and substratum. A seasonal high water table is in the upper part of the subsoil from late fall through spring.

The Orpark soils are 20 to 40 inches deep over bedrock. These soils formed in moderately deep glacial till. They are nearly level to strongly sloping and are on hilltops, summits, and hillsides. The rate of water movement is moderate in the surface layer, and slow or moderately slow in the subsoil and substratum. A seasonal high water table is in the upper part of the subsoil from fall through spring.

The soils of minor extent include Barcelona, Fremont, Ashville, and Busti soils. The poorly drained Ashville soils are on low flats and along drainageways. The somewhat poorly drained Busti soils are very deep over bedrock and have less clay in the subsoil than the major soils of this map unit. Fremont soils are very deep over bedrock. Barcelona soils are 40 to 60 inches deep over bedrock, and contain less clay in the subsoil than the Hornell soils.

Some areas of this unit are farmed, but extensive areas are idle or are reverting to woodland. Most cleared areas are used for hay or pasture, but some are used for orchards or vineyards. Gullies and stream entrenchments are common along the side slopes of the escarpment. Providing drainage and controlling erosion are the main management needs if crops are grown. The soils dry out slowly in spring, and they are sticky when wet. The depth to the saturated zone, the slope, depth to bedrock, and the restricted movement of water in the subsoil are the main limitations affecting community development.

Areas Dominated by Very Deep Soils Formed in Glacial Lake Sediments

These soils make up about 6 percent of the county. They formed in clayey, silty, and sandy lake-laid deposits that generally have no rock fragments. They are mainly in the plains and valleys that dissect the upland plateau in the northern part of the county and in the major valleys in the western part of the county. In most areas the soils are nearly level and gently sloping and are somewhat poorly drained to very poorly drained. In a few areas where the glacial lake deposits have been dissected, the soils range to moderately steep and moderately well drained.

8. Rhinebeck-Hudson-Niagara

Dominantly gently sloping to moderately steep, very deep, somewhat poorly drained to moderately well drained, fine to medium textured soils that have a medium content of lime; on broad plains and dissected upland plateau.

This map unit consists of soils that formed in glacial lake-laid deposits. The landscape is that of broad plains and strongly dissected valleys sides. The unit is in the central and northern parts of the county. Slopes are dominantly 3 to 25 percent but range from 0 to 50 percent.

This unit makes up about 4 percent of the county and consists of 30 percent Rhinebeck soils, 15 percent Hudson soils, 15 percent Niagara soils, and 40 percent soils of minor extent.

The Rhinebeck soils formed in very deep, lake-laid deposits that are dominantly clay and silts. They are fine textured, somewhat poorly drained, and nearly level to strongly sloping. They are on broad flats on valley plains. They generally do not contain rock fragments. The rate of water movement is moderately slow or moderate in the surface layer, and slow in the subsoil and substratum. A seasonal high water table is in the upper part of the subsoil from fall through spring.

The Hudson soils formed in very deep, lake-laid deposits that are dominantly clay and silts. They are fine textured, moderately well drained, and strongly sloping to very steep. They are on dissected valley sides. They generally do not contain rock fragments. The rate of water movement is moderate or moderately slow in the surface layer and subsurface layer, and slow in the subsoil and substratum. A seasonal high water table is in the lower part of the subsoil from fall through spring.

The Niagara soils formed in very deep lake-laid deposits that are dominantly silt and some clay. They are medium and moderately fine textured, somewhat poorly drained, and nearly level and gently sloping. They are on broad flats on undulating areas on the lake plains. They generally do not contain rock fragments. The rate of water movement is moderate in the surface layer, moderately slow in the subsoil, and moderately slow or slow in the substratum. A seasonal high water table is in the upper part of the subsoil from fall through spring.

The soils of minor extent include Canandaigua, Canadice, Chenango, Collamer, Dunkirk, and Varysburg soils. The poorly drained Canandaigua and Canadice soils are silty or clayey soils along drainageways or depressional areas. The well drained Chenango soils contain stratified rock fragments and occur on higher terraces. The moderately well drained Collamer soils are silty soils on higher knolls. The well drained Dunkirk soils are silty soils on steeper dissected side slopes. The Varysburg soils are moderately well drained gravelly soils underlain with lacustrine clays and silts.

Less sloping areas of this unit have been cleared and are used for farming. The remaining areas are woodland or are idle land that supports brush. The soils in these areas are mainly those that are poorly drained and too steep to support farming. Many areas are still used for crops grown in support of dairy farming. Tilling only when the soil is at the proper moisture content, minimizes the surface crusting and clodding. The depth to the saturated zone is the main limitation affecting most uses. Excavations and cuts that extend into the substratum are subject to slumping, sloughing, or piping. Many areas of this unit should remain wooded and be developed for wildlife habitat.

9. Canandaigua-Swormville-Tonawanda

Dominantly nearly level, very deep, very poorly drained to somewhat poorly drained, medium textured soils that have a medium content of lime; on broad flats in valleys.

This map unit consists of soils that formed in glacial lake-laid deposits and in older alluvial deposits. The landscape is that of broad lowland valley floors traversed by sluggish, meandering streams. The unit is in the major valleys in the western part of the county. Slopes are dominantly 0 to 3 percent but range from 0 to 8 percent.

This unit makes up about 2 percent of the county and consists of 30 percent Canandaigua soils, 25 percent Swormville soils, 20 percent Tonawanda soils, and 25 percent soils of minor extent.

The Canandaigua soils formed in very deep lake-laid deposits that are dominantly silt. They are medium textured and moderately fine textured, poorly drained and very poorly drained, and nearly level. They have a surface layer that is enriched with humus. They are in the lower depressional areas on valley floors, commonly in slack-water areas. They do not contain rock fragments. The rate of water movement is moderate in the surface layer and moderately slow in the subsoil and substratum. An apparent seasonal high water table is at or near the surface for prolonged periods from fall through spring, and some areas are ponded during these periods.

The Swormville soils formed in a thin mantle of silty material over lake-laid sandy sediment. They are very deep, somewhat poorly drained and are nearly level. They commonly are on broad flats on valley floors. The rate of water movement is moderately slow in the surface layer, slow or moderately slow in the subsoil, and moderately rapid in the sandy substratum. A seasonal high water table is in the upper part of the subsoil from fall to late in the spring.

The Tonawanda soils formed in very deep lake-laid deposits that are dominantly silt and very fine sand. They are medium textured, somewhat poorly drained, and are nearly level and gently sloping. They are on broad flats on valley floors. They generally do not contain rock fragments. The rate of water movement is moderate or moderately slow in the surface layer and subsoil and slow or moderately slow in the substratum. A seasonal high water table is in the upper part of the subsoil from fall through spring.

The soils of minor extent include Getzville, Lamson, Halsey, Red Hook, Canadice, Wayland, and Minoa soil. The poorly drained Getzville soils have a mantle of silty material underlain by sandy sediment. The somewhat poorly drained Minoa soils, and poorly drained Lamson soils are sandy throughout the profile, the somewhat poorly drained Red Hook soils, and the very poorly drained Halsey soils formed in outwash. The poorly drained Canadice soils have a higher content of clay in the subsoil and substratum than the major soils. The poorly drained Wayland soils formed in recent alluvium.

Most areas of this unit have been cleared and are used for farming. The wettest areas of this unit are woodland or are idle land that supports brush. Many areas are still used for crops grown in support of dairy farming. If properly drained, most areas of this unit are easy to cultivate and respond well to good management. The depth to the saturated zone is the main limitation affecting most uses. Excavations and cuts that extend into the substratum are subject to slumping, sloughing, or piping. Many areas of this unit should remain wooded and are best suited for wildlife habitat.

Areas Dominated by Very Deep Soils Formed in Glacial Till and Glacial Outwash

These soils make up 10 percent of the county. They formed in morainic glacial till and gravelly outwash. They are well drained and moderately well drained. They are on valley terraces, outwash fans, and outwash plains throughout the county. The soils generally are nearly level to rolling, except along terrace fronts and in dissected hilly areas, where they range to very steep.

10. Valois-Chenango-Castile

Dominantly gently to strongly sloping, very deep, well drained to moderately well drained, medium and moderately coarse textured soils that have a low content of lime; on moraines and outwash plains in valleys

This map unit consists of soils that formed in morainic glacial till and gravelly outwash. The landscape is made up of rolling plains and a series of low hills, benches, stream terraces, and alluvial fans that are mainly on the lower valley sides. The unit is in the major valleys throughout the county. Slopes are dominantly 3 to 15 percent but range from 0 to 50 percent.

This unit makes up about 10 percent of the county and consists of 30 percent Valois soils, 25 percent Chenango soils, 10 percent Castile soils, and 35 percent soils of minor extent.

The Valois soils formed in a very deep glacial till that is derived from sandstone, siltstone, and shale and commonly is intricately intermingled with or underlain by glacial outwash. These soils are medium and moderately coarse textured, well drained and gently sloping to very steep. They are on low knolls, ridges, and hills on lower valley sides and valley floors. The rate of water movement is moderate in the surface layer and subsoil and moderate or moderately rapid in the substratum. The seasonal high water table is at a depth of more than 6 feet.

The Chenango soils formed in glacial outwash that has a high content of sand and gravel. They are well drained and have a medium or moderately coarse textured subsoil. The substratum is coarse textured and commonly is stratified. These soils are nearly level to sloping in areas where they occur on beach ridges, outwash plains, terrace tops, and alluvial fans on valley floors, and they are moderately steep to very steep in areas where they occur on the sides of terraces. The rate of water movement is moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum. The water table usually is at a depth of more than 6 feet.

The Castile soils formed in glacial outwash consisting dominantly of sandstone and siltstone fragments. They are moderately well drained, have a medium textured subsoil and a coarse textured substratum, and are nearly level to gently sloping. They are on broad terraces on valley floors and commonly are slightly lower on the landscape than the adjacent better-drained Chenango soils. The rate of water movement is moderate and moderately rapid in the surface layer, moderately rapid in the subsoil, and rapid in the substratum. A seasonal high water table is in the lower part of the subsoil from fall through spring.

The soils of minor extent include Red Hook, Halsey, Tioga, Middlebury, Scio, Unadilla, Olean, and Allard soils. The somewhat poorly drained Red Hook soils and the very poorly drained Halsey soils formed in similar outwash deposits and are on lower flats on valley floors. The well drained Tioga soils and the moderately well drained Middlebury soils are on alluvial flood plains adjacent to the major streams. The moderately well drained Scio soils have silty material throughout. The well drained Unadilla and Allard soils and moderately well drained Olean soils have a mantle of silty material.

Most areas of this unit have been cleared and are used for farming. The less sloping areas of the major soils are excellent sites for farming. These areas readily dry out early in spring and are easy to cultivate. Specialty crops, such as snap beans and strawberries, are produced along with corn, small grain, and alfalfa grown in support of dairy farming. Droughtiness is a management concern in some years, particularly in areas of gravelly Chenango soils. Generally, the better-drained outwash soils provide good sites for most uses and are suitable sources of sand and gravel. The slope, the depth to the saturated zone, and the high content of gravel are the main limitations affecting most uses.

Areas Dominated by Very Deep Soils Formed in Glacial Outwash and Recent Alluvium

These soils make up 4 percent of the county. They formed in glacial outwash and recent alluvium. They are mainly in the major valleys that dissect the upland plateau in the central and southern parts of the county. In most areas the soils are nearly level and gently sloping. They are well drained to somewhat poorly drained.

11. Chenango-Pawling-Holderton

Dominantly nearly level and gently sloping, very deep, well drained to somewhat poorly drained soils, on glacial outwash fans and flood plains, in valleys.

This map unit consists of soils that formed in glacial outwash and recent alluvium. The landscape consists of broad flats in the major valleys in the central and southern parts of the county. Slopes are dominantly 0 to 3 percent but range from 0 to 8 percent.

This unit makes up about 4 percent of the county and consists of 20 percent Chenango fan soils, 20 percent Pawling soils, 15 percent Holderton soils, and 45 percent soils of minor extent.

The Chenango fan soils are well drained, and have a medium and moderately coarse textured subsoil. The substratum is coarse textured and commonly is stratified. These soils are nearly level and gently sloping. They are on fans that formed in places where tributary streams enter the main valley. The rate of water movement is moderate or moderately rapid in the surface layer and subsoil and rapid in the substratum. The water table usually is at a depth of 3 to 6 feet from late fall through spring.

The Pawling soils are nearly level and moderately well drained. They formed in loamy alluvial deposits. They have a medium textured surface and subsoil, and a coarse textured substratum. They are on flood plains that are occasionally flooded by adjacent streams. The rate of water movement is moderate in the surface layer and subsoil, and moderately rapid to rapid in the substratum. A seasonal high water table is in the lower part of the subsoil from late fall through spring.

The Holderton soils are somewhat poorly drained and are nearly level. They formed in loamy alluvial deposits in major valleys. They have a medium and moderately coarse textured subsoil and substratum. They are occasionally flooded by adjacent streams. The rate of water movement is moderate in the surface layer and subsoil, and moderate or moderately rapid in the substratum. A seasonal high water table is in the upper part of the subsoil from fall to late spring.

The soils of minor extent include Minoa, Lamson, Red Hook, Halsey, Middlebury, Scio, Olean, Canandaigua, and Wayland soils. The somewhat poorly drained Minoa soils and the poorly drained Lamson soils are sandy throughout. The somewhat poorly drained Red Hook soils and the very poorly drained Halsey soils have gravel throughout. The Middlebury soils are on the flood plains in the larger valleys where the loamy alluvium is deeper than 40 inches. The moderately well drained Scio soils are silty throughout. Olean soils are moderately well drained soils with a silt cap underlain with gravel. The very poorly drained Canandaigua soils are in the lower slack-water areas and are silty throughout. The Wayland soils are poorly drained alluvial soils.

Most areas of this unit have been cleared and are farmed. The better drained Chenango and Pawling soils are used for corn, small grain, or alfalfa grown in support of dairy farming. Flat, channery fragments in the surface layer of the Chenango soils can limit the planting and cultivation of some crops. The wetter Wayland soils are sometimes used for hay or pasture. Some areas of the poorly drained soils remain wooded or are idle land that supports brush. Many areas on the alluvial fans, above the flood plain, provide good homesites. The depth to the saturated zone, the flooding potential, and rock fragments on the surface of the Chenango soils, are the main limitations affecting most uses.

Areas Dominated by Very Deep Soils and Moderately Deep Soils that Formed in Residual and Colluvial Material

These soils make up about 24 percent of the county. They formed in residual and colluvial material that are very deep to bedrock and residual material that is less than 40 inches deep over siltstone, sandstone and shale bedrock. They are in the southern part of the county. The soils are dominantly well drained to somewhat poorly drained.

12. Buchanan-Rayne-Portville

Dominantly gently sloping to moderately steep, very deep, well drained to somewhat poorly drained, moderately fine and medium textured soils that have a low content of lime; on uplands

This map unit consists of soils that formed in colluvial and residual material derived dominantly from acid shale, siltstone, and sandstone. The landscape consists of broad, divided hilltops, hillsides, saddles, and side slopes in the upland plateau in the southern part of the county. Slopes are dominantly 3 to 25 percent but range from 3 to 50 percent.

This unit makes up about 9 percent of the county and consists of about 30 percent Buchanan soils, 25 percent Rayne soils, 25 percent Portville soils, and 20 percent soils of minor extent.

The Buchanan soils formed in colluvium weathered from interbedded shale, siltstone, and sandstone. These soils are moderately well drained and are very deep over bedrock. They are gently sloping to moderately steep on broad hillsides and benches of the unglaciated plateau. The rate of water movement is moderate above the fragipan and slow in the fragipan and substratum. The fragipan is at a depth of 20 to 36 inches. A perched seasonal high water table is in the subsoil from late fall through spring.

The Rayne series consists of very deep, well drained, moderately steep to very steep soils that formed in residuum weathered from interbedded shale, siltstone, and some fine grained sandstone. They are on upland ridgetops and hillsides of the unglaciated plateau. The subsoil and substratum are medium to moderately fine textured. The rate of water movement is moderate in the surface layer, subsoil and substratum. A seasonal high water table is at a depth of more than 6 feet.

The Portville series consists of very deep, somewhat poorly drained, gently to strongly sloping soils on toeslopes, lower colluvial side slopes, and benches of the unglaciated plateau. These soils formed in colluvium derived from interbedded shale, siltstone, and fine-grained sandstone. The rate of water movement is moderate or moderately slow above the fragipan and moderately slow to slow in the fragipan and substratum. The fragipan is at a depth of 12 to 36 inches. A perched seasonal high water table is in the upper part of the subsoil from late fall through spring.

The soils of minor extent include Gilpin, Brinkerton, Cavode, Eldred, and Hartleton soils. The well drained Gilpin soils are 20 to 40 inches deep to bedrock. The poorly drained Brinkerton soils occupy concave basins and lower colluvial toeslopes. The moderately well drained Eldred soils are very deep and have a moderately fine textured subsoil. The somewhat poorly drained Cavode soils are very deep, and have a moderately fine or fine textured subsoil and substratum. The well drained Hartleton soils are deep to bedrock.

Most areas of this unit are wooded. Some areas of this unit, particularly the gently sloping areas on hilltops, have been cleared and are used for farming. Crops commonly grown include corn, hay, and small grain. Some areas are used for Christmas trees. Providing proper drainage and controlling erosion are the main management needs. The depth to the saturated zone, the slope, the depth to bedrock, and the restricted movement of water in the subsoil are the main limitations affecting community development.

13. Carrollton-Kinzua-Onoville

Dominantly gently sloping to moderately steep, moderately deep and very deep, well drained to moderately well drained, moderately fine and medium textured soils that have a low content of lime; on uplands above elevations of 1,800 feet

This map unit consists of soils that formed in residual and colluvial material derived dominantly from acid shale, siltstone, and sandstone. The landscape is dominantly broad summits, saddles and dissected side slopes on plateaus at elevations above 1,800 feet in the southern part of the county. Slopes are dominantly 3 to 25 percent but range from 3 to 60 percent.

This unit makes up about 15 percent of the county and consists of 30 percent Carrollton soils, 25 percent Kinzua soils, 20 percent Onoville soils, and 25 percent soils of minor extent.

The Carrollton soils formed in residuum weathered from interbedded shale, siltstone, and sandstone. They are well drained and are 20 to 40 inches deep over bedrock. They are gently sloping to very steep and are on broad hilltops and valley sides at elevations above 1,800 feet. The subsoil and substratum are medium to moderately fine textured. The rate of water movement is moderate in the surface layer, subsoil and substratum. A seasonal high water table is at a depth of more than 6 feet.

The Kinzua series consists of very deep, well drained, gently sloping to very steep soils that formed in residuum derived from interbedded shale, siltstone, and some fine grained sandstone. They are on upland ridgetops and hillsides of the unglaciated plateau at elevations above 1,800 feet. The subsoil and substratum are medium to moderately fine textured. The rate of water movement is moderate in the surface layer and subsoil, and moderately slow in the substratum. A seasonal high water table is at a depth of more than 6 feet.

The Onoville soils formed in colluvium derived from interbedded shale, siltstone, and sandstone. They are moderately well drained and very deep over bedrock. They are gently sloping to moderately steep on broad hillsides and benches of the unglaciated plateau at elevations above 1,800 feet. The rate of water movement is moderate above the fragipan and slow or moderately slow in the fragipan and substratum. The fragipan is at a depth of 12 to 36 inches. A perched seasonal high water table is in the upper part of the subsoil from late in fall through spring.

The soils of minor extent include Mandy, Shongo, Ivory, Elko, Knapp Creek, Flatiron, and Ceres soils. The well drained Mandy soils are 20 to 40 inches deep to bedrock. The somewhat poorly drained Shongo soils occupy concave basins and lower colluvial toeslopes. The moderately well drained Elko soils are very deep and occupy flat hilltops. The well drained Knapp Creek and Flatiron soils were derived from sandstone conglomerate and have coarser textured subsoil. The somewhat poorly drained Ivory soils are very deep and have a clayey subsoil and substratum. The well drained Ceres soils are deep to bedrock and have redder subsoil.

Most areas of this unit are wooded. Some gently sloping areas on hilltops have been cleared and are used for farming. Crops commonly grown include corn, hay, and small grain. Special varieties of crops must be used because of the shorter growing season. Some areas are used for Christmas trees. Providing proper drainage and controlling erosion are the main management needs. The depth to the saturated zone, the slope, the depth to bedrock, and the restricted movement of water in the subsoil are the main limitations affecting community development.

Detailed Soil Map Units

The map units delineated on the detailed soil maps in this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses.

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

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

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

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

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

Soils of one series can differ in texture of the surface layer, slope, stoniness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Chenango gravelly silt loam, 3 to 8 percent slopes is a phase of the Chenango series.

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

A *soil complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Udifluvents and Fluvaquents, frequently flooded, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually, but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Hornell and Hudson soils, 35 to 50 percent slopes, is an undifferentiated group in this survey area.

This survey includes *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Pits, gravel, is an example. Miscellaneous areas are shown on the soil maps. Some that are too small to be shown are identified by a special symbol on the soil maps.

The detailed soil maps of Cattaraugus County join with those of the adjacent counties, which are identified in the following paragraphs.

Allegany County, New York.—This county does not have a modern published soil survey. A survey is currently in progress and will be a perfect join.

Chautauqua County, New York.—This is a perfect join with the exception of one unit, Pompton (Chautauqua County) matches with Castile (Cattaraugus County). The soils are very similar in properties. Chautauqua County is published at a scale of 1:15,840 and digitized at a scale of 1:12,000; Cattaraugus County is mapped at a scale of 1:24,000 and digitized at a scale of 1:24,000.

Erie County, New York.—This county is separated by a double line stream, therefore is a perfect join. Erie County is published at a scale of 1:15,840 and digitized at a scale of 1:12,000; Cattaraugus County is mapped at a scale of 1:24,000 and digitized at a scale of 1:24,000.

McKean County, Pennsylvania.—The same or similar soils match across the survey boundaries. Minor discrepancies are the result of differences in the design of the legends, changes in the concept of the series, and differences in map scales (McKean County was published at a scale of 1:20,000, whereas Cattaraugus County was mapped at a scale of 1:24,000). In all cases the kind of deposits, drainage, and slope join across the survey boundaries. The difference in temperature regimes will be resolved when McKean County is digitized and correlates frigid soils. The Cattaraugus County Soil Survey will be accepted as correct on its borders with this county.

Seneca Nation of Indians, New York.—This is an acceptable join with the same or similar soils matching across the survey boundaries. The difference in temperature regimes with the Allegany Reservation will be resolved when it is correlated with frigid soils.

Warren County, Pennsylvania.—The same or similar soils match across the survey boundaries. Minor discrepancies are the result of differences in the design of the legends, changes in the concept of the series, and differences in map scales (Warren County was published at a scale of 1:20,000, whereas Cattaraugus County was mapped at a scale of 1:24,000). In all cases the kind of deposits, drainage, and slope join across the survey boundaries. The difference in temperature regimes will be resolved when Warren County is digitized and correlates frigid soils. The Cattaraugus County Soil Survey will be accepted as correct on its borders with this county.

Wyoming County, New York.—This is an acceptable join with the same or similar soils match across the survey boundaries. The difference in temperature regimes will be resolved when Wyoming County is digitized and correlated with frigid soils. Wyoming County Soil Survey is published at a scale of 1:20,000, whereas Cattaraugus County was mapped at a scale of 1:24,000.

Table 4 gives the acreage and proportionate extent of each map unit. Other tables give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils or miscellaneous areas.

Map Unit Descriptions

1—Udifluvents and Fluvaquents, frequently flooded

These nearly level, very deep soils consist of unconsolidated alluvium deposited in long, narrow strips along secondary streams. The soils are subject to frequent flooding from nearby streams. Individual areas are mostly elongated, and parallel the nearby streams and creeks. These areas commonly range from 10 to 20 acres, but range from 10 to 75 acres. Included areas make up about 15 to 35 percent of this unit.

This complex is about 40 percent Udifluvents, 35 percent Fluvaquents, and 25 percent other soils. The Udifluvents and Fluvaquents occur in such an intricate pattern that they were not separated in mapping. These soils show very little evidence of profile development. The soil characteristics vary considerably within short distances. Included in mapping are small areas of the poorly drained Wayland and Wyalusing soils in old meander scars and former drainageways; small areas of poorly drained silty Canandaigua soil; and small areas of somewhat poorly drained Holderton soil.

Udifluvents have a brown surface layer about 0 to 9 inches thick. The texture is sandy, silty or loamy. The substratum is brown or gray and is composed of sandy, silty, or loamy texture. The content of rock fragments consisting mainly of gravel, cobblestones, and flagstones, ranges, by volume, from 0 to 70 percent in individual horizons.

Fluvaquents have a black, gray or brown surface layer, 0 to 12 inches thick, which is loamy or silty in texture. The substratum is gray or brown material that is silty, sandy, or loamy in texture. The content of rock fragments consisting mainly of gravel, cobblestones, and flagstones, ranges, by volume, from 0 to 70 percent in individual horizons.

The Udifluvents and Fluvaquents are subject to frequent overflow from the adjacent streams, stream cutting, and erosion, all of which shift the deposits from one place to another. Udifluvents are generally moderately well drained, and Fluvaquents are generally poorly drained. Permeability, available water capacity, small stone content, and reaction vary considerably.

Most areas support native grasses or support water-tolerant trees such as willow, soft maple, and hemlock. Some areas consist of gravelly riverwash that does not support vegetation.

These soils have little potential for farming. Some cleared areas are used as pasture but are slowly reverting to brush and weeds. Areas that are suitable for pasture cannot be easily managed because they are commonly inaccessible, are long and narrow, and are dissected by old stream channels.

The capability subclass is 5w.

2—Hamlin silt loam

This soil is nearly level, very deep to bedrock and well drained. It is on the higher parts of flood plains along the major streams in the northern part of the county. Individual areas generally are oblong in shape and are parallel to the adjacent streams and creeks. Areas range from 5 to 30 acres in size. Slopes commonly are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 10 inches; dark grayish brown silt loam

Subsoil:
10 to 17 inches; brown very friable very fine sandy loam
17 to 36 inches; brown friable silt loam

Substratum:
36 to 48 inches; dark grayish brown very friable very fine sandy loam
48 to 72 inches; dark grayish brown friable silt loam

Included in mapping are small areas of the moderately well drained Teel soils in slight depressions and old drainageways and small areas of Tioga soils, which have more sand and gravel than the Hamlin soil. Also included are small areas of the poorly drained Wayland soils in old meander scars and former drainageways and small areas of Udifluvents and Fluvaquents, which consist of unconsolidated alluvial deposits. Included areas make up 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: High
Soil reaction: Reaction ranges from strongly acid to neutral to a depth of 20 inches and moderately acid to slightly alkaline below that depth through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Some of the acreage is idle land or woodland, which is generally in isolated areas that cannot be easily farmed. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops. Flooding is a hazard, but it generally occurs early in spring, before crops are planted. Deep-rooted perennial crops, such as alfalfa, grow especially well. The soil has a stone-free surface layer and can be easily tilled. If the wet included areas are drained, the fields can be managed more uniformly. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as growing cover crops, incorporating crop residue into the soil, growing occasional sod crops, and minimizing tillage. Measures that protect streambanks and improve channels are needed in places to protect the soil from flooding.

Hay and pasture plants grow well on this soil. Overgrazing can damage pasture plants and restrict plant growth. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and deferring livestock grazing in the spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Flooding is the main hazard on sites for dwellings with basements. Fill material is needed to elevate the construction sites above the water level during periods of flooding. Alternative sites, out of the active flood plain, should be considered for construction.

Flooding and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action. The roads and streets should be built on raised fill material so that they are above the level of flooding.

Flooding and depth to saturated zone are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The soil is a potential source of topsoil.

The capability class is 1.

3—Tioga silt loam

This soil is nearly level, very deep and well drained. It is in the higher positions on the flood plains along the major streams in the southern part of the county. Individual areas commonly are oblong and are parallel to the adjacent streams. They range from 5 to 50 acres. Slopes commonly are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches; dark grayish brown silt loam

Subsoil:
8 to 16 inches; brown very friable silt loam
16 to 34 inches; brown very friable very fine sandy loam

Substratum:
34 to 42 inches; yellowish brown very friable very fine sandy loam, with 5 percent gravel
42 to 72 inches; yellowish brown loose fine sandy loam, with 10 percent gravel

Included in mapping are small areas of the moderately well drained Middlebury and somewhat poorly drained Holderton soils in slight depressions and old drainageways and small areas of Hamlin soils that have more silt in the subsoil than the Tioga soil. Also included are small areas of Udifluvents and Fluvaquents, which consist of unconsolidated alluvial deposits, and small areas of soils that have a gravelly surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, moderate to rapid in the substratum
Available water capacity: Low to high
Soil reaction: Strongly acid to neutral in the surface layer and subsoil, and moderately acid to slightly alkaline in the substratum
Water table: At a depth of 3 to 6 feet from November through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops grown in support of dairy farming. Some of the acreage, in scattered areas that cannot be easily farmed, is idle land or woodland. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops. Flooding is a hazard, but it generally occurs early in spring, before crops are planted. Deep-rooted perennial crops, such as alfalfa, grow especially well. The soil has a stone free surface layer and can be easily tilled. If the wet included areas are drained, the fields can be managed more uniformly. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as incorporating crop residue into the soil, growing cover crops and occasional sod crops, and minimizing tillage. Measures that protect streambanks and improve channels are needed in places to protect the soil from flooding.

Hay and pasture plants grow well on this soil. Overgrazing can damage pasture plants and restrict plant growth. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and deferring grazing early in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Flooding is the main management concern if this soil is used as a site for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Alternative sites, out of the active flood plain, should be considered for construction.

Flooding and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action. Building on raised fill material reduces the hazard of flooding.

Flooding, poor filtering capacity, and depth to saturated zone are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Care is needed to prevent the contamination of ground water resulting from seepage.

This soil is a potential source of topsoil.

The capability class is 1.

4—Teel silt loam

This soil is nearly level, very deep, and moderately well drained. It is in low areas on flood plains along the major streams in the northern part of the county. Individual areas generally are oblong and are parallel to the adjacent streams, and range from 5 to 30 acres in size. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches; dark grayish brown silt loam

Subsoil:
8 to 22 inches; dark yellowish brown friable silt loam
22 to 34 inches; brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions

Substratum:
34 to 56 inches; brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions
56 to 72 inches; grayish brown very friable very fine sandy loam

Included in mapping are small areas of the somewhat poorly drained Wakeville soils, poorly drained Wayland soils in slight depressions and old meander scars, and small areas of the well drained Hamlin soils in the slightly higher positions on the landscape. Also included are areas of Udifluvents and Fluvaquents which consist of unconsolidated alluvial deposits. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate to a depth of 40 inches, moderate to rapid below this depth
Available water capacity: High
Soil reaction: Strongly acid to neutral above a depth of 30 inches; and moderately acid to slightly alkaline below that depth
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops in support of dairy farming. Some of the acreage is idle land or woodland, which generally is in small areas that are isolated and cannot easily be farmed. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops. Flooding may delay planting or damage crops in some years, but it usually is not a concern. The seasonal high water table may delay planting in the spring, especially in low areas. The wetness can be reduced by installing subsurface drains in areas where outlets are available. If the wet included areas are drained, the fields can be managed more uniformly.

This soil has a nearly stone-free surface layer and can be easily tilled. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as incorporating crop residue into the soil, growing cover crops and sod crops, and minimizing tillage. Deep-rooted perennial crops, such as alfalfa, grow especially well. Measures that protect streambanks are needed in some areas to prevent lateral erosion into the adjacent fields.

Hay and pasture plants grow well on this soil. Overgrazing and grazing when the soil is wet can cause surface compaction, deplete the stand of pasture plants, and restrict plant growth. Using proper stocking rates, rotating grazing, controlling weeds and brush, and deferring grazing early in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, ensures their survival.

Flooding and depth to saturated zone are the main management concerns for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Adding fill material, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Alternative sites, out of the active flood plain, should be considered for construction.

Flooding and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action. Building on raised fill material reduces the hazard of flooding and helps to overcome any wetness.

Flooding, poor filtering capacity, and depth to saturated zone are management concerns if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The capability subclass is 2w.

5—Wayland silt loam

This soil is nearly level, very deep, and poorly drained. It is in the lowest parts on the flood plains along the major streams in the county. Individual areas generally are oblong and are parallel to the adjacent streams, and range from 10 to 75 acres in size. Slopes commonly are smooth and ranges from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches; very dark gray silt loam with dark brown iron accumulations

Subsoil:
9 to 25 inches; dark gray friable silty clay loam, with dark yellowish brown iron accumulations

Substratum:
25 to 51 inches; dark grayish brown friable silt loam, with dark brown iron accumulations and gray iron depletions
51 to 72 inches; dark gray friable silt loam with 5 percent gravels

Included in mapping are small areas of Wakeville and Holderton soils in the higher positions on the flood plains, soils that have a mucky surface layer, and soils that have sand and gravel within a depth of 36 inches. Also included in broad flats are areas of poorly drained Canandaigua soils that are silty throughout. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow or moderate in the surface layer and slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and subsoil, strongly acid to moderately alkaline in the upper part of the substratum, and moderately acid to moderately alkaline in the lower part of the substratum
Water table: At the surface or at a depth of 0.5 feet
from October through June
Flooding hazard: Frequent, long
Depth to bedrock: More than 6 feet

Most of the acreage is idle land that supports water-tolerant grasses, brush and trees. Some areas are used as pasture. Some drained areas are cultivated. This soil meets the requirements for hydric soils.

This soil is not suited to cultivated crops because of the prolonged wetness and the frequent flooding. Draining the soil commonly is difficult because few suitable outlets are available. Where it can be drained, this gravel-free soil is suited to many crops. Tilth and soil structure deteriorate if the soil is plowed when wet. Growing cover crops, incorporating crop residue into the soil, plowing only when the soil is at the proper moisture content, and rotating crops, help to maintain a high content of organic matter and good tilth. Sod crops and cover crops protect the surface from scouring by floodwater.

Undrained areas of this soil can be used as pasture on a limited basis. The pasture grasses that can withstand wetness grow best. Restricting grazing when the soil is wet helps to prevent surface compaction and damage to the pasture. The pasture should be plowed, a seedbed prepared, and seed planted during dry periods in summer. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are other management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. Prolonged wetness results in a high seedling mortality rate and restricts the growth of roots. The trees that can withstand wetness grow best.

Depth to saturated zone and the hazard of flooding are the main management concerns if this soil is used as a site for dwellings with basements. Prolonged soil wetness is a severe limitation for the construction of dwellings with basements. Included areas of the somewhat poorly drained Wakeville soils are better sites for these dwellings. Building on raised fill material helps to overcome the wetness. Alternative sites, out of the active flood plain, should be considered for construction.

Depth to saturated zone, the hazard of flooding, and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and building on raised fill material reduce the hazard of flooding, help to overcome the prolonged wetness, and overcome frost action.

Flooding, depth to saturated zone, and the restricted permeability are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The capability subclass is 5w.

6A—Wyalusing silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and poorly drained. It is in the lowest parts on the flood plains along the secondary streams in the county. Individual areas generally are narrow strips along the adjacent streams, and range from 10 to 75 acres in size. Slopes commonly are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches; very dark grayish brown silt loam

Subsoil:
6 to 18 inches; gray friable silt loam, with brown iron accumulations
18 to 22 inches; dark grayish brown loam, with brown iron accumulations, and 10 percent fine gravel
22 to 27 inches; dark gray friable gravelly fine sandy loam, with brown iron accumulations, and 20 percent gravel

Substratum:
27 to 72 inches; dark grayish brown stratified very gravelly loamy sand with 50 percent gravel

Included in mapping are small areas of Wakeville and Holderton soils in the higher positions on the flood plains, soils that have a mucky surface layer, and soils that have sand and gravel within a depth of 36 inches. Also included are areas of Udifluvents and Fluvaquents which consist of unconsolidated alluvial deposits. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil and rapid in the substratum
Available water capacity: Moderate to high
Soil reaction: Strongly acid to slightly acid throughout the profile
Water table: At the surface or to a depth of 0.5 feet from November through May
Flooding hazard: Frequent, brief
Depth to bedrock: More than 6 feet

Most of the acreage is idle land that supports water-tolerant grasses, brush, and trees. Some areas are used as pasture. This soil meets the requirements for hydric soils.

This soil is not suited to cultivated crops because of the prolonged wetness and the frequent flooding. Draining the soil commonly is difficult because few suitable outlets are available. Tilth and soil structure deteriorate if the soil is plowed when wet. Growing cover crops, incorporating crop residue into the soil, plowing only when the soil is at the proper moisture content, and rotating crops help to maintain a high content of organic matter and good tilth. Sod crops and cover crops protect the surface from scouring by floodwater.

Undrained areas of this soil can be used as pasture on a limited basis. The pasture grasses that can withstand wetness grow best. Restricting grazing when the soil is wet helps to prevent surface compaction and damage to the pasture. The pasture should be plowed, a seedbed prepared, and seed planted during dry periods in summer. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are other management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. Prolonged wetness results in a high seedling mortality rate and restricts the growth of roots. The trees that can withstand wetness grow best.

Depth to saturated zone and flooding are the main management concerns if this soil is used as a site for dwellings with basements. Prolonged soil wetness is a severe limitation for the construction of dwellings with basements. Included areas of the somewhat poorly drained Wakeville soils are better sites for these dwellings. Building on raised fill material helps to overcome the wetness and flooding hazard. Alternative sites, out of the active flood plain, should be considered for construction.

The depth to the saturated zone, flooding, and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and building on raised fill material reduce the hazard of flooding and help to overcome the wetness and frost action.

Flooding, depth to the saturated zone, and poor filtering capacity are management concerns on sites for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The capability subclass is 5w.

7A—Philo silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and moderately well drained. It is in low areas on flood plains adjacent to the major streams in the southern part of the county. Individual areas generally are oblong and are parallel to the adjacent streams, and range from 5 to 30 acres in size. Slopes commonly are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches; dark grayish brown silt loam

Subsoil
8 to 14 inches; dark yellowish brown friable fine sandy loam
14 to 21 inches; yellowish brown friable fine sandy loam
21 to 34 inches; yellowish brown friable loam, with strong brown iron accumulations and grayish brown iron depletions

Substratum:
34 to 46 inches; strong brown friable loam with 5 percent gravel

46 to 72 inches; strong brown friable sandy loam with 10 percent gravel

Included in mapping are small areas of the poorly drained Atkins soils and poorly drained Wayland soils in slight depressions and old meander scars and small areas of the well drained Pope soils in the slightly higher positions on the landscape. Also included are small areas of Udifluvents and Fluvaquents, which consist of unconsolidated alluvial deposits, and small areas of soils that have a gravelly surface layer. Included soils make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderate or moderately rapid in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops grown in support of dairy farming. Some of the acreage is idle land or woodland, which generally is in isolated areas that cannot be easily farmed. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops. Flooding may delay planting or damage crops in some years, but it usually is not a concern. The seasonal high water table may delay planting in the spring, especially in low areas. The wetness can be reduced by installing subsurface drains in areas where outlets are available. If the wet included areas are drained, the fields can be managed more uniformly. This soil has a stone-free surface layer and can be easily tilled. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as growing cover crops, incorporating crop residue into the soil, and minimizing tillage. Deep-rooted perennial crops, such as alfalfa, grow especially well. Measures that protect streambanks are needed in some areas to prevent lateral erosion in the fields.

Hay and pasture plants grow well on this soil. Overgrazing and grazing when the soil is wet can cause surface compaction, restrict plant growth, and deplete the stand of pasture plants. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and deferring grazing early in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Flooding and depth to saturated zone are the main management concerns for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Adding fill material, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Alternative sites, out of the active flood plain, should be considered for construction.

Flooding, depth to saturated zone, and frost action are the main management concerns on sites for local roads and streets. Adding coarse textured subgrade or base material increases soil strength and reduces the potential for frost action. Building on raised fill material reduces the hazard of flooding and helps to overcome the wetness.

Flooding and depth to saturated zone are management concerns on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The capability subclass is 2w.

8—Middlebury silt loam

This soil is nearly level, very deep, and moderately well drained. It is in low areas on flood plains adjacent to the major streams. Individual areas generally are oblong and are parallel to the adjacent streams, and range from 5 to 50 acres in size. Slopes commonly are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches; dark grayish brown silt loam, with 5 percent gravel

Subsoil:
8 to 22 inches; brown friable loam
22 to 30 inches; yellowish brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions

Substratum:
30 to 48 inches; yellowish brown very friable very fine sandy loam, with strong brown iron accumulations
48 to 72 inches; yellowish brown very friable fine sandy loam

Included in mapping are small areas of the somewhat poorly drained Holderton soils in slight depressions and old meander scars, and small areas of the well drained Tioga soils in the slightly higher positions on the landscape. Also included are small areas of Udifluvents and Fluvaquents, which consist of unconsolidated alluvial deposits, and small areas of soils that have a gravelly surface layer. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderately rapid to rapid in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid to slightly acid in the surface layer and from moderately acid to neutral in the subsoil and substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops grown in support of dairy farming. Some of the acreage is idle land or woodland, which generally is in isolated areas that cannot be easily farmed. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops. Flooding may delay planting or damage crops in some years, but it usually is not a concern. The seasonal high water table may delay planting in the spring, especially in low areas. The wetness can be reduced by installing subsurface drains in areas where outlets are available. If the wet included areas are drained, the fields can be managed more uniformly. This soil has a relatively stone-free surface layer and can be easily tilled. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as growing cover crops, incorporating crop residue into the soil, and minimizing tillage. Deep-rooted perennial crops, such as alfalfa, grow especially well. Measures that protect streambanks are needed in some areas to prevent lateral erosion in the fields.

Hay and pasture plants grow well on this soil. Overgrazing and grazing when the soil is wet can cause surface compaction, restrict plant growth, and deplete the stand of pasture plants. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and deferring grazing early in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Flooding and depth to saturated zone are the main management concerns for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Adding fill material, installing drains around footings, and sealing foundations and basements walls help to prevent excessive wetness in basements. Alternative sites, out of the active flood plain, should be considered for construction.

Flooding, depth to saturated zone, and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material increases soil strength and reduces the potential for frost action. Building on raised fill material reduces the hazard of flooding and helps to overcome the wetness.

Flooding, poor filtering capacity, and depth to saturated zone are management concerns on sites used for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The capability subclass is 2w.

9—Pawling silt loam

This soil is nearly level, very deep, and moderately well drained. It is in low areas on flood plains adjacent to the major streams. Individual areas generally are oblong and are parallel to the adjacent streams, and range from 5 to 30 acres in size. Slopes commonly are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches; very dark grayish brown silt loam

Subsoil:
9 to 22 inches; brown very friable silt loam with 2 percent gravel
22 to 28 inches; brown very friable loam, with dark yellowish brown iron accumulations and gray iron depletions, and 5 percent gravel

Substratum:
28 to 39 inches; gray loose gravelly loamy sand, with brown iron accumulations, and 20 percent gravel
39 to 72 inches; dark gray loose very gravelly sand, with 50 percent gravel

Included in mapping are small areas of the somewhat poorly drained Holderton soils in slight depressions and old meander scars and small areas of the well drained Tioga soils in the slightly higher positions on the landscape. Also included are small areas of Udifluvents and Fluvaquents, which consist of unconsolidated alluvial deposits, and small areas of soils that have a gravelly surface layer. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderately rapid or rapid in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid to moderately acid above 20 inches and moderately acid to neutral in the lower part of the solum and substratum.

Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops grown in support of dairy farming. Some of the acreage is idle land or woodland, which generally is in isolated areas that cannot be easily farmed. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops. Flooding may delay planting or damage crops in some years, but it usually is not a concern. The seasonal high water table may delay planting in the spring, especially in low areas. The wetness can be reduced by installing subsurface drains in areas where outlets are available. If the wet included areas are drained, the fields can be managed more uniformly. This soil has a stone-free surface layer and can be easily tilled. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as growing cover crops, incorporating crop residue into the soil, and minimizing tillage. Deep-rooted perennial crops, such as alfalfa, grow especially well. Measures that protect streambanks are needed in some areas to prevent lateral erosion in the fields.

Hay and pasture plants grow well on this soil. Overgrazing and grazing when the soil is wet can cause surface compaction, restrict plant growth, and deplete the stand of pasture plants. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and deferring grazing early in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Flooding and the depth to saturated zone are the main management concerns if this soil is used as a site for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Adding fill material, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Alternative sites, out of the active flood plain, should be considered for construction.

Flooding, the depth to saturated zone, and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material increases soil strength and reduces the potential for frost action. Building on raised fill material reduces the hazard of flooding and helps to overcome the wetness.

Flooding, poor filtering capacity, and the depth to saturated zone are management concerns if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The capability subclass is 2w.

10—Atkins silt loam

This soil is nearly level, very deep, and poorly drained. It is in the lowest parts on the flood plains along the major streams in the southern part of the county. Individual areas generally are oblong and are parallel to the adjacent streams. The areas range from 10 to 25 acres in size. Slopes commonly are smooth and ranges from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches; very dark gray silt loam

Subsoil:
4 to 16 inches; dark gray friable loam, with strong brown iron concentrations
16 to 24 inches; gray friable loam, with strong brown iron concentrations
24 to 38 inches; gray firm silty clay loam with strong brown iron concentrations

Substratum:
38 to 55 inches; gray friable sandy loam
55 to 72 inches; gray friable gravelly sandy loam with 20 percent gravel

Included in mapping are small areas of Holderton soils in the higher positions on the flood plains, soils that have a mucky surface layer, and soils that have sand and gravel within a depth of 36 inches. Also included are small areas of Udifluvents and Fluvaquents, which consist of unconsolidated alluvial deposits. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderate to slow in the subsoil, and moderate or moderately rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid above depths of 40 inches and very strongly acid to moderately acid below that depth
Water table: At the surface or to a depth of 0.5 feet
from October through June
Flooding hazard: Frequent, long
Depth to bedrock: More than 6 feet

Most of the acreage is idle land that supports water-tolerant grasses, brush, and trees. Some areas are used as pasture. Some drained areas are cultivated. This soil meets the requirements for hydric soils.

This soil is not suited to cultivated crops because of the prolonged wetness and the frequent flooding. Draining the soil commonly is difficult because few suitable outlets are available. Where it can be drained, this gravel-free soil is suited to many crops. Tilth and soil structure deteriorate if the soil is plowed when wet. Growing cover crops, incorporating crop residue into the soil, plowing only when the soil is at the proper moisture content, and rotating crops help to maintain a high content of organic matter and good tilth. Sod crops and cover crops protect the surface from scouring by floodwater.

Undrained areas of this soil can be used as pasture on a limited basis. The pasture grasses that can withstand wetness grow best. Restricting grazing when the soil is wet helps to prevent surface compaction and damage to the pasture. The pasture should be plowed, a seedbed prepared, and seed planted during dry periods in summer. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are other management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and erosion on roads and trails is slight. The potential for seedling mortality is high. Prolonged wetness results in a high seedling mortality rate and restricts the growth of roots. The trees that can withstand wetness grow best.

Depth to saturated zone and the hazard of flooding are the main management concerns if this soil is used as a site for dwellings with basements. Prolonged soil wetness is a severe limitation for the construction of dwellings with basements. Included areas of the somewhat poorly drained Holderton soils are better sites for these dwellings. Building on raised fill material helps to overcome the wetness and flooding hazard. Alternative sites, out of the active flood plain, should be considered for construction.

Depth to saturated zone, the hazard of flooding, and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and building on raised fill material reduce the hazard of flooding and help to overcome the wetness and frost action.

Flooding, the depth to the saturated zone, and the restricted permeability are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed.

The capability subclass is 5w.

11B—Ischua channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and moderately well drained. It is on convex hilltops and side slopes in areas where the topography is influenced by the underlying bedrock. Siltstone and shale bedrock is at a depth of 20 to 40 inches. The soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches; dark grayish brown channery silt loam with 15 percent channers

Subsoil:

6 to 18 inches; yellowish brown friable silt loam, with 10 percent channers 18 to 23 inches; brown friable channery silt loam, with light brownish gray iron depletions, and 20 percent channers

23 to 28 inches; light brownish gray firm channery silty clay loam, with strong brown iron accumulations, and 20 percent channers

Substratum:

28 inches; gray and light brownish gray siltstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Gretor soils along drainageways and in slight depressions and small areas of Hornellsville soils, which have more clay in the subsoil than the Ischua soil. Also included are small areas of Salamanca soils which are very deep over bedrock, and small areas of soils that have a silt loam surface layer. Included areas make up about 10 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, slow or moderately slow in the lower subsoil

Available water capacity: Low or moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and upper subsoil, and very strongly acid to slightly acid in the lower subsoil and substratum

Water table: At a depth of 1.5 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for row crops grown in support of dairy farming. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations.

Tillage may be delayed by wetness in the spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Installing subsurface drainage systems is difficult because of the moderate depth to bedrock. A sufficient amount of lime and fertilizer is needed for most crops, especially legumes. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

The soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction restrict plant growth and can damage pasture plants and increase the runoff rate. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist.

The depth to saturated zone and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action, depth to bedrock, and depth to the saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations on sites for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption fields should be installed in suitable fill material. Installing a drainage system in the area around the absorption fields helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

11C—Ischua channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and moderately well drained. It is on hilltops and side slopes in areas where the topography is influenced by the underlying bedrock. Soft siltstone and shale bedrock is at a depth of 20 to 40 inches. The soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches; dark grayish brown channery silt loam, with 15 percent channers

Subsoil:

6 to 18 inches; yellowish brown friable silt loam, with 10 percent channers 18 to 23 inches; brown friable channery silt loam, with light brownish gray iron depletions, and 20 percent channers

23 to 28 inches; light brownish gray firm channery silty clay loam, with strong brown iron accumulations, and 20 percent channers

Substratum:

28 inches; gray and light brownish gray siltstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Gretor soils along drainageways and in slight depressions and small areas of Hornellsville soils, which have more clay in the subsoil than the Ischua soil. Also included are small areas of Salamanca soils which are very deep over bedrock, and small areas of soils that have a silt loam surface layer. Included soils make up about 10 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, slow or moderately slow in the lower subsoil
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and upper subsoil, and very strongly acid to slightly acid in the lower subsoil and substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for row crops grown in support of dairy farming. This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Tillage may be delayed by wetness in spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Installing subsurface drainage systems is difficult because of the moderate depth to bedrock. A sufficient amount of lime and fertilizer is needed for most crops, especially legumes. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

The soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction can restrict plant growth, damage pasture plants, and increase the runoff rate. Applying a sufficient amount of lime and fertilizer, using stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist.

The depth to saturated zone, depth to bedrock, and slope are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action, slope, depth to bedrock, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the frost action and wetness limitations.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption fields should be installed in suitable fill material. Installing a drainage system in the area around the absorption fields helps to overcome the depth to saturated zone.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 3e.

11D—Ischua channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, moderately deep, and moderately well drained. It is on valley sides that commonly are dissected by V-shaped gullies and receives runoff from the higher adjacent soils. This soil is in areas where the topography is influenced by the underlying bedrock. Bedrock is at a depth of 20 to 40 inches. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches; dark grayish brown channery silt loam, with 15 percent channers

Subsoil:
6 to 18 inches; yellowish brown friable silt loam, with 10 percent channers 18 to 23 inches; brown friable channery silt loam, with light brownish gray iron depletions, and 20 percent channers
23 to 28 inches; light brownish gray firm channery silty clay loam, with strong brown iron accumulations, and 20 percent channers

Substratum:
28 inches; gray and light brownish gray siltstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Gretor soils along drainageways and in slight depressions and small areas of Hornellsville soils, which have more clay in the subsoil than the Ischua soil. Also included are small areas of Salamanca soils which are very deep over bedrock, and small areas of soils that have a silt loam surface layer. Included soils make up about 10 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, slow or moderately slow in the lower subsoil
Available water capacity: Low or moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and upper subsoil, and very strongly acid to slightly acid in the lower subsoil and substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for hay or pasture. A few areas are used for row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The slope limits the use of farm equipment. Tillage may be slightly delayed by wetness in spring. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping will help to reduce erosion. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. A sufficient amount of lime and fertilizer is needed to maintain good crop growth.

This soil is better suited to hay and pasture than to cultivated crops. Overgrazing and grazing when the soil is wet restrict plant growth and can damage pasture plants. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and selecting the appropriate species for seeding are the main management concerns. Because the soil is naturally acid, applications of lime and fertilizer are needed to improve the growth of most pasture plants.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope, depth to saturated zone, and the restricted depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land shaping may be necessary to overcome the slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The slope, depth to saturated zone, frost action and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce wetness and the potential for frost action. Land grading helps to overcome the slope limitation. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The slope is the main limitation if this soil is used as a site for septic tank absorption fields. Less sloping soils should be considered first. Placing drain fields on the contour will help to overcome this limitation. Other limitations include the depth to saturated zone, the restricted permeability and the depth to bedrock. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption fields should be installed in suitable fill material. Installing a drainage system in the area around the absorption fields helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 4e.

11E—Ischua channery silt loam, 25 to 35 percent slopes

This soil is steep, moderately deep, and moderately well drained. It is on valley sides that commonly are dissected by V-shaped gullies and receives runoff from the higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Bedrock is at a depth of 20 to 40 inches. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches; dark grayish brown channery silt loam, with 15 percent channers

Subsoil:

6 to 18 inches; yellowish brown friable silt loam, with 10 percent channers 18 to 23 inches; brown friable channery silt loam, with light brownish gray iron depletions, and 20 percent channers

23 to 28 inches; light brownish gray firm channery silty clay loam, with strong brown iron accumulations, and 20 percent channers

Substratum:

28 inches; gray and light brownish gray siltstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Gretor soils along drainageways and in slight depressions and small areas of Hornellsville soils, which have more clay in the subsoil than the Ischua soil. Also included are small areas of Salamanca soils which are very deep over bedrock, and small areas of soils that have a silt loam surface layer. Included soils make up about 10 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, slow or moderately slow in the lower subsoil

Available water capacity: Low or moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and upper subsoil, and very strongly acid to slightly acid in the lower subsoil and substratum

Water table: At a depth of 1.5 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat. Some of the less sloping areas are idle or are used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The less sloping areas of this soil can be used as pasture on a limited basis. The growing season is shorter for this soil than for nearby valley soils at lower elevations. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope, depth to saturated zone, and the restricted depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land shaping may be necessary to overcome the slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The slope, depth to saturated zone, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength, reduce the wetness, and the potential for frost action. Land grading helps to overcome the slope limitation. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The slope is the main limitation if this soil is used for septic tank absorption fields. Less sloping soils should be considered first. Placing drain fields on the contour will help to overcome this limitation. Other limitations include depth to saturated zone, the restricted permeability, and the depth to bedrock. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption fields should be installed in suitable fill material. Installing a drainage system in the area around the absorption fields helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

11F—Ischua channery silt loam, 35 to 50 percent slopes

This soil is very steep, moderately deep, and moderately well drained. It is on valley sides that receive runoff from the higher adjacent soils and commonly is dissected by V-shaped gullies. It is in areas where the topography is influenced by the underlying bedrock. Bedrock is at a depth of 20 to 40 inches. This soil occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches; dark grayish brown channery silt loam, with 15 percent channers

Subsoil:

6 to 18 inches; yellowish brown friable silt loam, with 10 percent channers 18 to 23 inches; brown friable channery silt loam, with light brownish gray iron depletions, and 20 percent channers

23 to 28 inches; light brownish gray firm channery silty clay loam, with strong brown iron accumulations, and 20 percent channers

Substratum:

28 inches; gray and light brownish gray siltstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Gretor soils along drainageways and in slight depressions and small areas of Hornellsville soils, which have more clay in the subsoil than the Ischua soil. Also included are small areas of Salamanca soils which are very deep over bedrock, and small areas of soils that have a silt loam surface layer. Included areas make up about 10 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, slow or moderately slow in the lower subsoil
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid
in the surface layer and upper subsoil, and very strongly
acid to slightly acid in the lower subsoil and substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion and hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building logging roads and skid trails across the slope helps to control erosion and minimizes gullying along the roads and trails.

Construction is extremely difficult or impractical on this soil. The slope is the main limitation if this soil is used as a site for local roads and streets, dwellings with basements, and waste disposal systems. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Erosion is a very serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

12B—Franklinville channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is in convex areas on hilltops that receives little or no runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches; very dark gray channery silt loam with 15 percent channers

Subsoil:
3 to 14 inches; strong brown very friable channery silt loam, with 15 percent channers
14 to 32 inches; yellowish brown friable channery silt loam, with 25 percent channers
32 to 42 inches; dark yellowish brown firm channery silt loam, with 30 percent channers

Substratum:
42 to 72 inches; brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of a moderately well drained soil that is similar to Franklinville; moderately well drained Salamanca soils, which have more clay in the subsoil than the Franklinville soils; and Franklinville soils that have a silt loam surface layer. Also included are the Ischua soils which have bedrock within 40 inches and Yorkshire soils which have a fragipan. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, moderate or moderately slow in the lower subsoil and substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of 3.0 to 6.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Small woodlots are in some areas, and some of the acreage is idle land that is reverting to shrubs and brush. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. The growing season is shorter on this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. Crops respond well to sufficient applications of fertilizer and lime. Erosion is a hazard if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist.

This soil is somewhat limited as a site for dwellings with basements. Depth to the saturated zone is the main limitation. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and frost action.

The depth to saturated zone and the restricted permeability in the substratum are minor limitations on sites for septic tank absorption fields. Minimal engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome the wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

12C—Franklinville channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and well drained. It is in convex areas on hilltops and side slopes that do not receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches; very dark gray channery silt loam with 15 percent channers

Subsoil:
3 to 14 inches; strong brown very friable channery silt loam, with 15 percent channers
14 to 32 inches; yellowish brown friable channery silt loam, with 25 percent channers
32 to 42 inches; dark yellowish brown firm channery silt loam, with 30 percent channers

Substratum:
42 to 72 inches; brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of a moderately well drained soil that is similar to Franklinville soils; the moderately well drained Salamanca soils, which have more clay in the subsoil than the Franklinville soil; and Franklinville soils that have a silt loam surface layer. Also included are the Ischua soils which have bedrock within 40 inches and Yorkshire soils which have a fragipan. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, moderately slow or moderate in the lower subsoil and substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of 3.0 to 6.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to shrubs and brush. Some areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter on this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. Erosion is a serious hazard in intensively cultivated areas. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. Incorporating crop residue into the soil, minimizing tillage, including sod crops in the crop rotation, and growing cover crops help to maintain tilth and increase the content of organic matter. Installing drainage in the wetter included areas helps to make management of the fields more efficient. Crops respond well to applications of fertilizer and lime. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope and depth to saturated zone are the main limitations if this soil is used as a site for dwellings with basements. Grading the land will help overcome the slope limitation. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The depth to the saturated zone, slope, and the restricted permeability in the substratum are minor limitations if this soil is used as a site for septic tank absorption fields. Minimal engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system upslope from the absorption fields and adding permeable fill material help to overcome the wetness and the restricted permeability.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

12D—Franklinville channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches; very dark gray channery silt loam with 15 percent channers

Subsoil:
3 to 14 inches; strong brown very friable channery silt loam, with 15 percent channers
14 to 32 inches; yellowish brown friable channery silt loam, with 25 percent channers
32 to 42 inches; dark yellowish brown firm channery silt loam, with 30 percent channers

Substratum:
42 to 72 inches; brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of a moderately well drained soil that is similar to Franklinville soils; the moderately well drained Salamanca soils, which have more clay in the subsoil than the Franklinville soil; and Franklinville soils that have a silt loam surface layer. Also included are the Ischua soils which have bedrock within 40 inches and Yorkshire soils which have a fragipan. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, moderately slow or moderate in the lower subsoil and substratum

Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush and shrub. Some areas are used for hay or pasture. A small area is used for row crops.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the slope. The growing season is shorter on this soil than for nearby valley soils. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness restricts crop growth.

This soil is moderately well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Extensive land modification and grading may be needed to overcome the slope.

The slope is the main limitation if this soil is used as a site for local roads and streets. Frost action is an additional limitation on sites for local roads and streets. Installing roadside drainage systems helps to overcome this limitation.

The slope and restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption fields and adding permeable fill material help to overcome the restricted permeability.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

12E—Franklinville channery silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and well drained. It is on the side slopes of hills and on valley walls that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or occur as narrow strips on the side slopes. They range from 10 to several hundred acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches; very dark gray channery silt loam with 15 percent channers

Subsoil:
3 to 14 inches; strong brown very friable channery silt loam, with 15 percent channers
14 to 32 inches; yellowish brown friable channery silt loam, with 25 percent channers
32 to 42 inches; dark yellowish brown firm channery silt loam, with 30 percent channers

Substratum:
42 to 72 inches; brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of a moderately well drained soil that is similar to Franklinville soils; the moderately well drained Salamanca soils, which have more clay in the subsoil than the Franklinville soil; and Franklinville soils that have a silt loam surface layer. Also included are the Ischua soils which have bedrock within 40 inches and Yorkshire soils which have a fragipan. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, moderately slow or moderate in the lower subsoil and substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide habitat for wildlife. Some of the acreage is idle land or is used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The suitability of this soil for pasture is limited. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land shaping and grading help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

The slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The slope and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

14B—Hornellsville silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and somewhat poorly drained. It is on broad flats and side slopes in areas where the topography is influenced by the underlying bedrock. Soft shale bedrock is at a depth of 20 to 40 inches. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches; dark grayish brown silt loam with 5 percent channers

Subsoil:
5 to 11 inches; yellowish brown friable silty clay loam, with light brownish gray iron depletions, and 5 percent channers
11 to 16 inches; light olive brown firm silty clay loam, with strong brown iron accumulations, and 5 percent channers
16 to 26 inches; brown firm silty clay, with light gray iron depletions, and 5 percent channers
26 to 34 inches; yellowish brown firm silty clay, with gray iron depletions, and 10 percent channers

Substratum:
34 inches; soft shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, small areas of Gretor soils and moderately well drained Ischua soils, which have less clay than the Hornellsville soil and small areas of Salamanca soils which have less clay and are deeper to bedrock than the Hornellsville soils. Also included are small areas of Almond soils, which are very deep over bedrock and have less clay in the subsoil than the Hornellsville soil. Included areas make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, slow or very slow in the subsoil and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid in the surface layer, and very strongly or strongly acid in the subsoil and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Erosion is a hazard on long slopes that are intensively cultivated. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems may be difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of natural acidity and low fertility, the soil requires sufficient applications of fertilizer and lime.

This soil is suited to water-tolerant hay species and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns of managing pasture. Grazing when the soil is wet causes soil compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for northern red oak is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate.

The depth to saturated zone, restricted depth to bedrock, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. The shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements and reduce the shrink-swell potential.

The depth to saturated zone, shrink-swell potential, and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems decreases shrink-swell potential and reduce the wetness and the potential for frost action.

The depth to saturated zone, restricted permeability, and the moderate depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The shale bedrock generally can be ripped with a backhoe. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption fields should be installed in suitable fill material that is more permeable. Installing a drainage system in the area around the absorption fields helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

14C—Hornellsville silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and somewhat poorly drained. It is on valley sides and hillsides in areas where the topography is influenced by the underlying bedrock. Soft shale bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent areas. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer
0 to 5 inches; dark grayish brown silt loam with 5 percent channers

Subsoil:
5 to 11 inches; yellowish brown friable silty clay loam, with light brownish gray iron depletions, and 5 percent channers
11 to 16 inches; light olive brown firm silty clay loam, with strong brown iron accumulations, and 5 percent channers
16 to 26 inches; brown firm silty clay, with light gray iron depletions, and 5 percent channers
26 to 34 inches; yellowish brown firm silty clay, with gray iron depletions, and 10 percent channers

Substratum:
34 inches; soft shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, small areas of Gretor soils and moderately well drained Ischua soils, which have less clay than the Hornellsville soil and small areas of Salamanca soils, which have less clay and are deeper to bedrock than the Hornellsville soils. Also included are small areas of Almond soils, which are very deep over bedrock and have less clay in the subsoil than the Hornellsville soil. Included areas make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, slow or very slow in the subsoil and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid in the surface layer, and very strongly or strongly acid in the subsoil and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting may be delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Erosion is a serious hazard on long slopes that are intensively cultivated. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems may be difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, tilling at the proper moisture content, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of natural acidity and low fertility, the soil requires sufficient applications of fertilizer and lime.

This soil is suited to water-tolerant hay species and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns of managing pasture. Grazing when the soil is wet causes soil compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for northern red oak is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate.

The depth to saturated zone, slope, shrink-swell, and depth to bedrock and are the main limitations if this soil is used as a site for dwellings with basements. The shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Extensive land modification and grading may be needed to overcome the slope.

The depth to saturated zone, slope, frost action and high shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action and reduce the shrink-swell potential, and help to overcome the wetness limitation. Extensive land modification and grading may be needed to overcome the slope.

The depth to the saturated zone, restricted permeability, and the moderate depth to bedrock are limitations on sites for septic tank absorption fields. The shale bedrock generally can be ripped with a backhoe. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption fields should be installed in suitable fill material that is more permeable. Installing a drainage system in the area around the absorption fields helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

15B—Willdin channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on convex hilltops and on side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches; dark brown channery silt loam, with 20 percent channers

Subsoil:

6 to 15 inches; yellowish brown friable channery silt loam, with 20 percent channers

15 to 22 inches; brown friable channery silt loam, with 20 percent channers

22 to 24 inches; pale brown friable channery silt loam, with brownish yellow iron accumulations, and 25 percent channers

24 to 60 inches; dark grayish brown, very firm very channery loam, with brownish yellow iron accumulations, and 45 percent channers

Substratum:

60 to 72 inches; light olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the somewhat poorly drained Napoli soils along drainageways and in seepage spots; and Yorkshire soils, which have more clay in the subsoil than the Willdin soil. Also included are small areas of Franklinville soils which lack the fragipan and small areas of Willdin soils that have fewer channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage has been cleared and is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The surface layer has many flat stone fragments that interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, restricted permeability, and depth to dense material are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

15C—Willdin channery silt loam, 8 to 15 percent slopes

This soil is sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are rectangular and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches; dark brown channery silt loam, with 20 percent channers

Subsoil:
6 to 15 inches; yellowish brown friable channery silt loam, with 20 percent channers
15 to 22 inches; brown friable channery silt loam, with 20 percent channers
22 to 24 inches; pale brown friable channery silt loam, with brownish yellow iron accumulations, and 25 percent channers
24 to 60 inches; dark grayish brown, very firm very channery loam, with brownish yellow iron accumulations, and 45 percent channers

Substratum:
60 to 72 inches; light olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the somewhat poorly drained Napoli soils along drainageways and in seepage spots; and Yorkshire soils, which have more clay in the subsoil than the Willdin soil. Also included are small areas of Franklinville soils which lack the fragipan and small areas of Willdin soils that have fewer channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage has been cleared and is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is moderately well suited to row crops if erosion and runoff are controlled. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The surface layer has many flat stone fragments which can interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is well suited to pasture. Overgrazing is the main concern because it can damage pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and severe erosion. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist.

The slope and depth to saturated zone are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Extensive land modification and grading may be needed to overcome the slope.

Depth to saturated zone and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Extensive land modification and grading may be needed to overcome the slope.

The depth to saturated zone, restricted permeability, and depth to dense material are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e

15D—Willdin channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on smooth hillsides and valley sides that receive runoff from the higher adjacent soils. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong and narrow and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inch; dark brown channery silt loam, with 20 percent channers

Subsoil:

6 to 15 inches; yellowish brown friable channery silt loam, with 20 percent channers

15 to 22 inches; brown friable channery silt loam, with 20 percent channers

22 to 24 inches; pale brown friable channery silt loam, with brownish yellow iron accumulations, and 25 percent channers

24 to 60 inches dark grayish brown, very firm very channery loam, with brownish yellow iron accumulations, and 45 percent channers

Substratum:

60 to 72 inches; light olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the somewhat poorly drained Napoli soils along drainageways and in seepage spots; and Yorkshire soils, which have more clay in the subsoil than the Willdin soil. Also included are small areas of Franklinville soils which lack the fragipan and small areas of Willdin soils that have fewer channery fragments in the surface layer. Included soils make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for hay or pasture, and a few areas for row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The slope limits the use of farm equipment. Tillage is slightly delayed in spring because of the wetness. Channery fragments on the surface interfere with tillage and cause excessive wear on machinery. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. A large amount of lime and fertilizer is needed to maintain good crop growth.

This soil is generally better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope and depth to saturated zone are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Extensive land modification and grading may be needed to overcome the slope.

Depth to saturated zone and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Extensive land modification and grading may be needed to overcome the slope.

The slope, depth to saturated zone, restricted permeability, and depth to dense material are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption fields and adding permeable fill material help to overcome wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

16A—Almond silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on flat hilltops that receive little or no runoff and on upland benches that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are circular or irregularly shaped. They commonly range from 5 to 50 acres in size, but some are as large as 100 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown silt loam, with 10 percent channers

Subsoil:
7 to 11 inches, brown very friable silt loam, with yellowish brown iron concentrations and light brownish gray depletions, with 10 percent channers
11 to 22 inches, light olive brown friable channery silty clay loam, with strong brown iron concentrations and grayish brown and light brownish gray depletions, with 20 percent channers
22 to 37 inches, light olive brown firm channery silty clay loam, with yellowish brown iron concentrations and light brownish gray and grayish brown depletions, with 30 percent channers

Substratum:
37 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron concentrations and grayish brown depletions, with 30 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, Napoli soils which have a fragipan, and moderately well drained Salamanca soils where the soil is more sloping. Also included are small areas of Gretor and Hornellsville soils, which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or moderate in the subsoil, slow or very slow in the substratum
Available water capacity: Moderate to high
Soil reaction: Very strongly acid to moderately acid in the solum, and from strongly acid to neutral in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for small grain, corn, or hay grown in support of dairy farming. Much of the acreage is idle land or is farmed at a low level of intensity. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. The growing season is shorter than soils in valley areas. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops. Harvesting crops during prolonged wet periods in fall is more difficult on this soil than on the more sloping adjacent Almond soils. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. Wetness can be reduced by providing closely spaced tile and open-ditch drainage systems. Maintaining good tilth is a management concern in intensively cultivated areas. Crops respond well to sufficient applications of lime and fertilizer. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and the content of organic matter.

This soil is suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet restrict plant growth and can damage the pasture plants. Grazing when the soil is wet also results in compaction and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised, coarse textured fill material help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability.

The capability subclass is 3w.

16B—Almond silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on broad hilltops and valley sides that receive little runoff from the higher adjacent soils. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular. They commonly are 5 to 75 acres in size, but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, very dark grayish brown silt loam, with 10 percent channers

Subsoil:

7 to 11 inches, brown very friable silt loam, with yellowish brown iron concentrations and light brownish gray depletions, with 10 percent channers

11 to 22 inches, light olive brown friable channery silty clay loam, with strong brown iron concentrations and grayish brown and light brownish gray depletions, with 20 percent channers

22 to 37 inches, light olive brown firm channery silty clay loam, with yellowish brown iron concentrations and light brownish gray and grayish brown depletions, with 30 percent channers

Substratum:
37 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron concentrations and grayish brown depletions, with 30 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, Napoli soils which have a fragipan, and moderately well drained Salamanca soils where the soil is more sloping. Also included are small areas of Gretor and Hornellsville soils, which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or moderate in the subsoil, slow or very slow in the substratum
Available water capacity: Moderate to high
Soil reaction: Very strongly acid to moderately acid in the solum and from strongly acid to neutral in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Some areas are used for small grain, corn, or hay grown in support of dairy farming. A large acreage is idle land or is farmed at a low level of intensity. Some areas are wooded.

This soil is moderately well suited to cultivated crops. The growing season is shorter for this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops. Harvesting crops during prolonged wet periods in fall is difficult. The soil tends to become cloddy if plowed when wet. If drained and protected from erosion, this soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil and substratum. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and the content of organic matter. Crops respond well to sufficient applications of lime and fertilizer.

This soil is suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet restrict plant growth and can damage the pasture plants. Grazing when the soil is wet can cause surface compaction, restrict plant growth, deplete the stand of pasture grasses, and increase the hazard of erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised fill material help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

16C—Almond silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides and valley sides that receive a considerable amount of runoff from the higher adjacent soils. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size, but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown silt loam, with 10 percent channers

Subsoil:
7 to 11 inches, brown very friable silt loam, with yellowish brown iron concentrations and light brownish gray depletions, with 10 percent channers
11 to 22 inches, light olive brown friable channery silty clay loam, with strong brown iron concentrations and grayish brown and light brownish gray depletions, with 20 percent channers
22 to 37 inches, light olive brown firm channery silty clay loam, with yellowish brown iron concentrations and light brownish gray and grayish brown depletions, with 30 percent channers

Substratum:
37 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron concentrations and grayish brown depletions, with 30 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, Napoli soils which have a fragipan, and moderately well drained Salamanca soils where the soil is more sloping. Also included are small areas of Gretor and Hornellsville soils, which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or moderate in the subsoil, slow or very slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid in the solum and from strongly acid to neutral in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Some areas are farmed at a low level of intensity. These areas are used for small grain, corn, or hay grown in support of dairy farming. A large acreage is woodland or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. The growing season is shorter on this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops. Harvesting crops during prolonged wet periods in fall is difficult. The soil tends to become cloddy if plowed when wet. If the soil is drained and protected from erosion, it is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil and substratum. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content help to maintain tilth and the content of organic matter. Crops respond well to sufficient applications of lime and fertilizer.

This soil is suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the sol is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land modification and grading may be needed to overcome the slope.

The depth to saturated zone, frost action, and slope are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised fill material help to overcome these limitations. Extensive land modification and grading may be needed to overcome the slope limitation.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability.

Erosion is a serious hazard during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

17B—Salamanca silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is in convex areas on hilltops and upper side slopes that receive little runoff from the higher adjacent soils. This soil occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or circular, and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam, with 10 percent channers

Subsoil:
8 to 16 inches, brown very friable silt loam, with 5 percent channers
16 to 28 inches, light olive brown firm channery silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 20 percent channers,
28 to 37 inches, light olive brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

Substratum:
37 to 72 inches, olive brown firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Included in mapping are small areas of the somewhat poorly drained Almond soils in slight depressions and along drainageways, and moderately well drained Yorkshire soils, which have a fragipan in the subsoil. Also included are small areas of Ischua soils, which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow to very slow in the lower subsoil and substratum
Available water capacity: Moderate to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded or are used for row crops grown in support of dairy farming. Some of the acreage is idle land that is reverting to brush and shrubs. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. The growing season is shorter on this soil than for nearby valley soils. This may limit the choice of crops. The use of short-season or early maturing crop varieties is recommended. Tillage is delayed by wetness in spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed for most crops, especially legumes. Crops respond well to sufficient application of fertilizer. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the runoff rate. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements.

Frost action and the depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

17C—Salamanca silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam, with 10 percent channers

Subsoil:
8 to 16 inches, brown very friable silt loam, with 5 percent channers
16 to 28 inches, light olive brown firm channery silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 20 percent channers,
28 to 37 inches, light olive brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

Substratum:
37 to 72 inches, olive brown firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Included in mapping are small areas of the somewhat poorly drained Almond soils in slight depressions and along drainageways, and moderately well drained Yorkshire soils, which have a fragipan in the subsoil. Also included are small areas of Ischua soils, which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow to very slow in the lower subsoil and substratum
Available water capacity: Moderate to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded or are used for row crops grown in support of dairy farming. Some of the acreage is idle land that is reverting to brush and shrubs. This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter on this soil than for nearby valley soils. This may limit the choice of crops. The use of short-season or early maturing crop varieties is recommended. Tillage may be delayed by wetness in spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the runoff rate. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Slope is also a minor limitation. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Land modification and grading may be needed to overcome the slope limitation.

Frost action, slope, and the depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Extensive land modification and grading may be needed to overcome the slope.

The depth to saturated zone and the restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

17D—Salamanca silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on smooth hillsides and valley sides that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, dark grayish brown silt loam, with 10 percent channers

Subsoil:
8 to 16 inches, brown very friable silt loam, with 5 percent channers
16 to 28 inches, light olive brown firm channery silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 20 percent channers
28 to 37 inches, light olive brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

Substratum:
37 to 72 inches, olive brown firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Included in mapping are small areas of the somewhat poorly drained Almond soils in slight depressions and along drainageways, and moderately well drained Yorkshire soils, which have a fragipan in the subsoil. Also included are small areas of Ischua soils, which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow to very slow in the lower subsoil and substratum
Available water capacity: Moderate to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for hay and pasture. A small acreage is used for cultivated crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The growing season is shorter on this soil than for nearby valley soils. The slope limits the use of farm equipment. Tillage is slightly delayed by wetness in spring. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Lime and fertilizer are usually needed to maintain good crop growth.

This soil generally is better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Using proper stocking rates, rotating livestock grazing, applying a sufficient amount of lime and fertilizer, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping help to overcome the slope limitation.

Frost action, depth to saturated zone, and the slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and the potential for frost action.

The depth to saturated zone, slope, and the restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption fields and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by revegetating disturbed areas as soon as possible.

The capability subclass is 4e.

17E—Salamanca silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and moderately well drained. It is on hillsides and valley sides that receive runoff from the higher adjacent soils. Many areas along the valley sides are deeply dissected by V-shaped gullies. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are elongated or occur as narrow strips on the side slopes. They commonly are 20 to 75 acres in size, but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam, with 10 percent channers

Subsoil:
8 to 16 inches, brown very friable silt loam, with 5 percent channers
16 to 28 inches, light olive brown firm channery silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 20 percent channers,
28 to 37 inches, light olive brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

Substratum:
37 to 72 inches, olive brown firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Included in mapping are small areas of the somewhat poorly drained Almond soils in slight depressions and along drainageways, and moderately well drained Yorkshire soils, which have a fragipan in the subsoil. Also included are small areas of Ischua soils, which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow to very slow in the lower subsoil and substratum
Available water capacity: Moderate to high

Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide wildlife habitat. Some of the less sloping included areas are idle or are used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The less sloping areas of this soil can be used as pasture on limited basis. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for black cherry is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Seedlings should be planted early in spring, when the soil is moist. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and the slope are the main limitations on sites for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping help to overcome the slope limitation.

Frost action, depth to saturated zone, and the slope are the main limitations if this soil is used as a sites for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and the potential for frost action.

The depth to saturated zone, slope and the restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

18A—Pope fine sandy loam, 0 to 3 percent slopes

This soil is nearly level, very deep and well drained It is in the higher positions on the flood plains along the major streams in the southern part of the county. Individual areas commonly are oblong and are parallel to the adjacent streams. Areas range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 10 inches, dark grayish brown fine sandy loam

Subsoil:
10 to 17 inches, yellowish brown very friable very fine sandy loam
17 to 38 inches, dark yellowish brown very friable very fine sandy loam

Substratum:
38 to 64 inches, dark yellowish brown friable loam, with brown iron accumulations, with 10 percent gravel
64 to 80 inches, brown friable sandy loam, with 10 percent gravel

Included in mapping are small areas of the moderately well drained Philo and poorly drained Atkins soils in slight depressions and old drainageways. Also included are small areas of soils that are redder in color than the Pope soils and small areas of soils that have a gravelly surface layer. Also included are small areas of similar soils that have a water table at a depth of 3.0 to 6.0 feet. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer, subsoil, and substratum
Available water capacity: Moderate to high
Soil reaction: Strongly acid or very strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops grown in support of dairy farming. Some of the acreage in scattered areas that cannot be easily farmed is idle land or woodland. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops. Flooding is a hazard, but it generally occurs early in spring, before crops are planted. Deep-rooted perennial crops, such as alfalfa, grow especially well. The soil has a stone free surface layer and can be easily tilled. If the wet included areas are drained, the fields can be managed more uniformly. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as incorporating crop residue into the soil, growing cover crops and minimizing tillage. Measures that protect streambanks and improve channels are needed in places to protect the soil from flooding.

Hay and pasture plants grow well on this soil. Overgrazing can damage pasture plants and restrict plant growth. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and deferring grazing early in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. There is a slight hazard for off-road or off-trail erosion and erosion on roads and trails. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Flooding is the main management concern if this soil is used as a site for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Alternative sites, out of the active flood plain, should be considered for construction.

Flooding is the main management concern if this soil is used as a site for local roads and streets. Frost action is also a minor limitation. Building on raised fill material reduces the hazard of flooding. Adding coarse textured subgrade or base material reduces the potential for frost action.

Flooding is the main management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Care is needed to prevent the contamination of ground water resulting from seepage.

The capability class is 1.

19A—Olean silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep and moderately well drained. It is on silt-mantled outwash plains and stream terraces. Individual areas are rectangular or oblong and range from 5 to 75 acres in size. Slopes are smooth.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, dark grayish brown silt loam with less than 2 percent gravel

Subsoil:

9 to 23 inches, yellowish brown very friable silt loam with less than 2 percent gravel

23 to 36 inches, brown friable silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions and less than 2 percent gravel

Substratum:

36 to 72 inches, brown loose very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of somewhat poorly drained Swormville soils that are similar to the Olean soils, but are in slight depressions and along drainageways. Also included are the moderately well drained Scio soils in slightly depressional areas, where the silt mantle is thicker than 40 inches, moderately well drained Castile soils that have gravel in the surface and subsoil, well drained Allard soils on knolls and terraces, and soils that have a sandy or gravelly surface layer. Some areas are rarely flooded, but only for a very brief period. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, moderate or moderately slow in the lower part of the subsoil, and rapid or very rapid in the substratum

Available water capacity: High

Soil reaction: Very strongly acid to moderately acid in the surface and subsoil, and very strongly acid to neutral in the substratum

Water table: At a depth of 1.5 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Small scattered woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is well suited to most crops commonly grown in the county, including vegetables and legumes. The seasonal high water table may delay tillage and planting in spring. Draining the wetter included soils allows for more efficient management of the fields. This nearly gravel-free soil can be easily tilled and is well suited to specialty crops. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as incorporating crop residue into the soil, growing cover crops, and minimizing tillage. The soil generally can be easily kept in good tilth.

This soil is well suited to hay and pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing can damage pasture plants, and grazing when the soil is wet can compact the surface layer and cause the surface to become less permeable. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. There is a slight hazard of off-road or off-trail erosion and erosion on roads and trails. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone, shrink-swell potential, and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and poor filtering capacity are limitations if this soil is used as a site for septic tank absorption fields, particularly in early spring. Care is needed to prevent the contamination of ground water resulting from the rapid or very rapid permeability in the substratum. Installing a drainage system in the area around the absorption fields helps to overcome the seasonal wetness. Sloughing and the caving in of the unstable silty and gravelly material are limitations affecting excavations.

The capability subclass is 2w.

19B—Olean silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep and moderately well drained. It is on silt-mantled outwash plains and stream terraces. Individual areas are rectangular or oblong and range from 5 to 75 acres in size. Slopes are smooth.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silt loam with less than 2 percent gravel

Subsoil:
9 to 23 inches, yellowish brown very friable silt loam with less than 2 percent gravel
23 to 36 inches, brown friable silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions and less than 2 percent gravel

Substratum:
36 to 72 inches, brown loose very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of somewhat poorly drained Swormville soils that are similar to the Olean soil, but are in slight depressions and along drainageways. Also included are the moderately well drained Scio soils in slightly depressional areas, where the silt mantle is thicker than 40 inches, moderately well drained Castile soils that have more gravel in the surface and subsoil, well drained Allard soils on knolls and terraces, and soils that have a sandy or gravelly surface layer. Some areas are rarely flooded, but only for a very brief period. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, moderate or moderately slow in the lower part of the subsoil, and rapid or very rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface and subsoil, and very strongly acid to neutral in the substratum

Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for crops grown in support of dairy operations. Some of the acreage is idle land. Small woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is well suited to most crops commonly grown in the county, including vegetables and legumes. The seasonal high water table may delay tillage and planting in spring. Draining the wetter included soils allows for more efficient management of the fields. This nearly gravel-free soil can be easily tilled and is well suited to specialty crops. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Erosion is a concern on this unit, especially where slopes are long. Measures that minimize surface crusting and compaction, and reduce the hazard of erosion are needed. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter. Farming on the contour, minimizing tillage, stripcropping, and maintaining a year-round plant cover help to control erosion.

This soil is well suited to hay and pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing can damage pasture plants, and grazing when the soil is wet can compact the surface layer and cause it to be less permeable. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone, shrink-swell potential, and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and poor filtering capacity are limitations if this soil is used as a site for septic tank absorption fields, particularly in early spring. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum. Installing a drainage system in the area around the absorption fields helps to overcome the seasonal wetness. Sloughing and the caving in of the unstable silty and gravelly material are limitations affecting excavations.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

20A—Unadilla silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep and well drained. It is on broad flats in the larger valleys. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown silt loam

Subsoil:
9 to 14 inches, yellowish brown very friable silt loam
14 to 33 inches, brown friable silt loam, with 2 percent gravel

Substratum:
33 to 55 inches, brown friable silt loam, with yellowish brown iron accumulations, and 2 percent gravel
55 to 72 inches, brown loose gravelly sandy loam, with 25 percent gravel

Included in mapping are small areas of the moderately well drained Scio and Olean soils along drainageways and in slight depressions; the moderately well drained Castile soils which have more gravel throughout; and well drained Allard soils, which are underlain by sand and gravel. Also included are a few areas of soils that have some stone fragments in the surface layer. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderately rapid or rapid in the substratum below 40 inches
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, alfalfa, vegetables or small fruit. Scattered woodlots are in some areas, and some of the acreage is idle land. This soil meets the requirements for prime farmland (fig. 4).

This soil is well suited to most of the crops commonly grown in the county, including vegetables, legumes, and small fruit. This gravel-free soil can be easily tilled. It can be cultivated early in spring. Draining the wetter included soils allows for more efficient management of the fields. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as incorporating crop residue into the soil, plowing only when the soil is at the proper moisture content, growing cover crops, and rotating crops.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture plants, and grazing when the soil is wet causes surface compaction and seals the surface. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and applying the right kinds and amounts of fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. There is a slight hazard for off-road or off-trail erosion and erosion on roads and trails. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse-textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The poor filtering capacity is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the moderately rapid or rapid permeability in the substratum.

Figure 4.—Alfalfa crop in an area of Unadilla silt loam, 0 to 3 percent slopes. This soil is considered prime farmland.

This soil is a potential source of topsoil. Some areas are excellent sites for athletic fields or other recreational uses that require a nearly level, stone-free site.

The capability class is 1.

20B—Unadilla silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep and well drained. It is on broad flats in the larger valleys. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown silt loam

Subsoil:
9 to 14 inches, yellowish brown very friable silt loam
14 to 33 inches, brown friable silt loam, with 2 percent gravel

Substratum:
33 to 55 inches, brown friable silt loam, with yellowish brown iron accumulations, and 2 percent gravel
55 to 72 inches, brown loose gravelly sandy loam, with 25 percent gravel

Included in mapping are small areas of the moderately well drained Scio and Olean soils along drainageways and in slight depressions; the moderately well drained Castile soils, which have more gravel throughout; and well drained Allard soils, which are underlain by sand and gravel. Also included are a few areas of soils that have some stone fragments in the surface layer. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderately rapid or rapid in the substratum below 40 inches
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, alfalfa, vegetables or small fruit. Scattered woodlots are in some areas, and some of the acreage is idle land. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county, including vegetables, legumes, and small fruit. This gravel-free soil can be easily tilled. It can be cultivated early in spring. Draining the wetter included soils allows for more efficient management of the fields. If cultivated, erosion is a concern, especially where slopes are long. Measures that minimize surface crusting and compaction and control runoff are needed. Farming on the contour, minimizing tillage, stripcropping, and maintaining a year-round plant cover help to control erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture plants, and grazing when the soil is wet causes surface compaction and seals the surface. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and applying the right kinds and amounts of fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse-textured subgrade or base material, and installing roadside drainage systems reduce the potential for frost action.

The poor filtering capacity is a limitation as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the moderately rapid or rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e

20C—Unadilla silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep and well drained. It is on rolling plains, remnant ridges and terraces in the larger valleys. Individual areas are long and narrow, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown silt loam

Subsoil:
9 to 14 inches, yellowish brown very friable silt loam
14 to 33 inches, brown friable silt loam, with 2 percent gravel

Substratum:
33 to 55 inches, brown friable silt loam, with yellowish brown iron accumulations, and 2 percent gravel
55 to 72 inches, brown loose gravelly sandy loam, with 25 percent gravel

Included in mapping are small areas of the moderately well drained Scio and Olean soils along drainageways and in slight depressions; the moderately well drained Castile soils which have more gravel throughout; and well drained Allard soils, which are underlain by sand and gravel. Also included are a few areas of soils that have some stone fragments in the surface layer. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderately rapid or rapid in the substratum below 40 inches
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay, pasture, or woodland. Some of the acreage is used for cultivated crops grown in support of dairy farming or is idle land.

This soil is moderately well suited to most of the crops commonly grown in the county. It is suited to deeply-rooted perennial crops, such as alfalfa. Erosion is a hazard where cultivated crops are grown. Draining the wetter included soils allows for more efficient management of the fields. This soil commonly has few stones and can be easily tilled. Interceptor drains can divert seepage and runoff from the higher adjacent soils and thus reduce the hazard of erosion. Farming on the contour, minimizing tillage, stripcropping, and maintaining a year-round plant cover also help to control erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is better suited to hay and pasture than to row crops. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture plants, and grazing when the soil is wet causes surface compaction and seals the surface. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and applying the right kinds and amounts of fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along skid trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation.

Frost action and the slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems and backfilling with coarse textured subgrade or base material reduce the potential for frost action.

The poor filtering capacity is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the moderately rapid or rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

20D—Unadilla silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep and well drained. It is on rolling plains, remnant ridges and terraces in the larger valleys. Individual areas are long and narrow, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown silt loam

Subsoil:
9 to 14 inches, yellowish brown very friable silt loam
14 to 33 inches, brown friable silt loam, with 2 percent gravel

Substratum:
33 to 55 inches, brown friable silt loam, with yellowish brown iron accumulations, and 2 percent gravel
55 to 72 inches, brown loose gravelly sandy loam, with 25 percent gravel

Included in mapping are small areas of the moderately well drained Scio and Olean soils along drainageways and in slight depressions; the moderately well drained Castile soils which have more gravel throughout; and well drained Allard soils, which are underlain by sand and gravel. Also included are a few areas of soils that have some stone fragments in the surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderately rapid or rapid in the substratum below 40 inches
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for hay, pasture or row crops.

This soil is poorly suited to cultivated crops. The slope and the hazard of erosion are the main management concerns. It is suited to deeply-rooted perennial crops, such as alfalfa. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize erosion.

This soil is better suited to hay and pasture than to row crops. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture plants, and grazing when the soil is wet causes surface compaction and seals the surface. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and applying the right kinds and amounts of fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along skid trails and roads.

The slope is the main limitation is this is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation.

Frost action and slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems and backfilling with coarse textured subgrade or base material reduce the potential for frost action.

The poor filtering capacity and slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive land grading and shaping may help to overcome the slope limitation. Care is needed to prevent the contamination of ground water resulting from the moderately rapid or rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by revegetating disturbed areas as soon as possible.

The capability subclass is 4e.

22A—Allard silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep and well drained. It is on silt-mantled outwash plains and stream terraces. Individual areas are rectangular or oblong and range from 5 to 75 acres in size. Slopes are smooth.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silt loam

Subsoil:
9 to 17 inches, yellowish brown very friable silt loam
17 to 23 inches, yellowish brown friable silt loam
23 to 34 inches, pale brown friable silt loam

Substratum:
34 to 38 inches, brown loose very gravelly loamy sand with 40 percent gravel
38 to 72 inches, grayish brown loose stratified very gravelly sand with 50 percent gravel

Included in mapping are small areas of moderately well drained Olean soils in slight depressions and along drainageways. Also included are the moderately well drained Scio soils in slightly depressional areas, where a thick mantle of silty material is underlain by gravelly deposits; well drained Chenango soils where gravel occurs throughout the soil, and soils that have a sandy or gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, rapid or very rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, strongly acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Small scattered woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is well suited to most crops. It can be used intensively for row crops. It can be cultivated early in spring. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as incorporating crop residue into the soil, growing cover crops or occasional sod crops, and minimizing tillage. The soil generally can be easily kept in good tilth.

This soil is well suited to hay and pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action.

The poor filtering capacity is a limitation for septic tank absorption fields. Care is needed to prevent the contamination of the groundwater resulting from the rapid permeability in the substratum.

This soil is a potential source of topsoil. If the silty overburden is removed, this soil is a potential source of sand and gravel. Some areas are excellent sites for athletic fields or for other recreational uses that require a nearly level stone-free site.

The capability class is 1.

22B—Allard silt loam, 3 to 8 percent slopes

This gently sloping soil is very deep and well drained. It is on silt-mantled glacial outwash plains and stream terraces. Individual areas are rectangular or oblong in shape and are from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silt loam

Subsoil:
9 to 17 inches, yellowish brown very friable silt loam
17 to 23 inches, yellowish brown friable silt loam
23 to 34 inches, pale brown friable silt loam

Substratum:
34 to 38 inches, brown loose very gravelly loamy sand with 40 percent gravel
38 to 72 inches, grayish brown loose stratified very gravelly sand with 50 percent gravel

Included in mapping are small areas of moderately well drained Olean soils in slight depressions and along drainageways. Also included are the moderately well drained Scio soils in slightly depressional areas, where a thick mantle of silty material is underlain by gravelly deposits; well drained Chenango soils where gravel occurs throughout the soil; and soils that have a sandy or gravelly surface layer. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, rapid or very rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, strongly acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Small isolated woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is well suited to most intensively grown crops. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. Erosion is a hazard, particularly in areas where slopes are long. Farming on the contour and stripcropping help to control erosion. Returning crop residue to the soil, growing cover crops, and minimizing tillage help to maintain tilth and increase the content of organic matter. The soil generally can be easily kept in good tilth.

This soil is well suited to hay and pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action.

The poor filtering capacity is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of the groundwater resulting from the rapid or very rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of topsoil. If the silty overburden is removed, this soil is a potential source of sand and gravel.

The capability subclass is 2e.

25A—Chenango gravelly silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and well drained. It is on outwash plains, beach ridges and stream terraces. Individual areas are elongated or irregularly shaped.

They commonly range from 5 to 50 acres in size, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
9 to 17 inches, yellowish brown friable gravelly silt loam, with 20 percent gravel
17 to 25 inches, yellowish brown very friable very gravelly silt loam, with 35 percent gravel
25 to 30 inches, dark yellowish brown very friable very gravelly loam, with 40 percent gravel
30 to 35 inches, brown very friable very gravelly coarse sandy loam, with 50 percent gravel

Substratum:
35 to 72 inches, grayish brown loose, stratified very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys, and soils that have a sandy surface layer. Also included are silty, well-drained Allard soils in areas where the Chenango soil adjoin them, and well drained Valois soils where the Chenango soils adjoin the glaciated hillsides. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and early season vegetables. It can be cultivated early in spring and can be used intensively for row crops. Droughtiness and small rock fragments on the surface are the main limitations. The rock fragments may interfere with the planting of some fine-seeded crops and can increase the wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Increasing the content of organic matter improves the available water capacity of the soil.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Plant growth may be limited in midsummer. As a result, care is needed to prevent overgrazing during this period. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Removing the mantle of silty material and backfilling with coarse textured base material reduce the potential for frost action.

The poor filtering capacity is a limitation for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum.

This soil is a potential source of sand and gravel.

The capability class is 2s.

25B—Chenango gravelly silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is on outwash plains, beach ridges and stream terraces. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 50 acres in size, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
9 to 17 inches, yellowish brown friable gravelly silt loam, with 20 percent gravel
17 to 25 inches, yellowish brown very friable very gravelly silt loam, with 35 percent gravel
25 to 30 inches, dark yellowish brown very friable very gravelly loam, with 40 percent gravel
30 to 35 inches, brown very friable very gravelly coarse sandy loam, with 50 percent gravel

Substratum:
35 to 72 inches, grayish brown loose, stratified very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys and soils that have a sandy surface layer. Also included are silty, well-drained Allard soils in areas where the Chenango soil adjoins Allard soils, and well drained Valois soils where the Chenango soils adjoin the glaciated hillsides. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early season vegetables. It can be cultivated early in spring and can be used intensively for row crops. Droughtiness and small rock fragments on the surface are the main limitations. The rock fragments may interfere with the planting of some fine-seeded crops and can increase the wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Erosion is a hazard on long slopes if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Plant growth may be limited in midsummer. As a result, care is needed to prevent overgrazing during this period. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Removing the surface layer and backfilling with coarse textured base material reduce the potential for frost action.

The poor filtering capacity is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability class is 2s.

25C—Chenango gravelly silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and well drained. It is on rolling outwash plains, beach ridges and stream terraces. Individual areas are oblong and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:

9 to 17 inches, yellowish brown friable gravelly silt loam, with 20 percent gravel

17 to 25 inches, yellowish brown very friable very gravelly silt loam, with 35 percent gravel

25 to 30 inches, dark yellowish brown very friable very gravelly loam, with 40 percent gravel

30 to 35 inches, brown very friable very gravelly coarse sandy loam, with 50 percent gravel

Substratum:

35 to 72 inches, grayish brown loose, stratified very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys and soils that have a sandy surface layer. Also included are silty, well-drained Allard soils in areas where the Chenango soil adjoins Allard soils, and well drained Valois soils where the Chenango soils adjoin the glaciated hillsides. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay or for row crops grown in support of dairy farming. Scattered woodlots are in some areas, and some of the acreage is idle land.

This soil is moderately well suited to most of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. The slope, erosion, droughtiness, and gravel on the surface are the main limitations. The gravel may interfere with the planting of some crops and cause excessive wear on machinery. Erosion is a hazard on long slopes and in intensively cultivated areas. Farming on the contour, stripcropping, and establishing grassed waterways help to control erosion. Incorporating crop residue into the soil, minimizing tillage, growing cover crops, and including sod crops in the cropping sequence help to maintain tilth and reduce the hazard of erosion. These practices also increase the content of organic matter and thus improve the available water capacity of the soil. Crops respond well to applications of lime and fertilizer. Legumes respond especially well. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth, especially during dry periods, and can increase the hazard of erosion. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are important management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation.

Frost action and the slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The poor filtering capacity is a limitation for septic tank absorption fields. Care is needed to prevent the contamination of groundwater resulting from the rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability subclass is 3e.

25D—Chenango gravelly silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on hilly outwash plains, on terrace risers, and on dissected deltas. Individual areas are irregular in shape and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:

9 to 17 inches, yellowish brown friable gravelly silt loam, with 20 percent gravel

17 to 25 inches, yellowish brown very friable very gravelly silt loam, with 35 percent gravel

25 to 30 inches, dark yellowish brown very friable very gravelly loam, with 40 percent gravel

30 to 35 inches, brown very friable very gravelly coarse sandy loam, with 50 percent gravel

Substratum:

35 to 72 inches, grayish brown loose, stratified very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys and soils that have a sandy surface layer. Also included are silty, well-drained Allard soils in areas where the Chenango soil adjoins Allard soils, and well drained Valois soils where the Chenango soils adjoin the glaciated hillsides. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum

Water table: At a depth of more than 6 feet

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for hay, pasture or row crops.

This soil is poorly suited to cultivated crops. The slope, the hazard of erosion, and droughtiness are the main management concerns. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth, and can increase the hazard of erosion. Deep-rooted legumes can be grown, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are important management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The poor filtering capacity and the slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitations. Care is needed to prevent the contamination of ground water resulting from rapid permeability in the substratum.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

25E—Chenango gravelly silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and well drained. It is on terrace risers, the sides of ridges, and on the side slopes of dissected outwash plains. Individual areas are oblong or occur as narrow strips on the side slopes. They range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:

9 to 17 inches, yellowish brown friable gravelly silt loam, with 20 percent gravel

17 to 25 inches, yellowish brown very friable very gravelly silt loam, with 35 percent gravel

25 to 30 inches, dark yellowish brown very friable very gravelly loam, with 40 percent gravel

30 to 35 inches, brown very friable very gravelly coarse sandy loam, with 50 percent gravel

Substratum:

35 to 72 inches, grayish brown loose, stratified very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the well drained Chadakoin and Valois soils, which formed in glacial till. Also included are narrow bands of Udifluvents on the floodplains along the streams that dissect the unit. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum

Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used as woodland and wildlife habitat. Some of the acreage is idle land, or is used as pasture.

This soil is not suited to cultivated crops or hay fields because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult and hazardous because of the slope. A plant cover is needed to control runoff.

This unit is poorly suited for pasture. A good plant cover is needed to prevent erosion. Prevention of overgrazing helps to protect the soil from erosion and gullying. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

Slope and frost action are the main limitations on sites for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The poor filtering capacity and the slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitations. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

25F—Chenango gravelly silt loam, 35 to 50 percent slopes

This soil is very steep, very deep, and well drained. It is on terrace risers, the sides of ridges and on the side slopes of dissected outwash plains. Individual areas are oblong or occur as narrow strips on the side slopes. They range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
9 to 17 inches, yellowish brown friable gravelly silt loam, with 20 percent gravel
17 to 25 inches, yellowish brown very friable very gravelly silt loam, with 35 percent gravel
25 to 30 inches, dark yellowish brown very friable very gravelly loam, with 40 percent gravel
30 to 35 inches, brown very friable very gravelly coarse sandy loam, with 50 percent gravel

Substratum:
35 to 72 inches, grayish brown loose, stratified very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the well drained Chadakoin and Valois soils, which formed in glacial till. Also included are narrow bands of Udifluvents on the floodplains along the streams that dissect the unit. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture because of the slope and the very severe hazard of erosion. It is too steep for the safe operation of farm equipment. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is severe and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

Construction is extremely difficult or impractical on this soil. The slope is the main limitation if this soil is used as a site for dwellings with basements, local roads and streets and septic tank absorption fields. Erosion is a very serious hazard on construction sites. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

26A—Chenango channery silt loam, fan, 0 to 3 percent slopes

This soil is nearly level, very deep, and well drained. It is on alluvial fans and remnant deltas. Individual areas are essentially triangular or fan shaped. They commonly are 5 to 20 acres in size, but range from of 5 to 50 acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown channery silt loam, with 25 percent channers

Subsoil:
9 to 27 inches, yellowish brown friable channery silt loam, with 30 percent channers
27 to 45 inches, yellowish brown friable very channery fine sandy loam, with 45 percent channers

Substratum:
45 to 72 inches, brown friable very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils near the lower margin of the fans. Also included are small areas of moderately well drained Middlebury soils, and small areas of Chenango soils that have a gravelly surface layer. Middlebury soils are in areas where the alluvial fans adjoin silty soils on alluvial flood plains, and well drained Valois soils where the Chenango soils adjoin the glaciated hillsides. Included soils make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of 3.0 to 6.0 feet from November through May
Flooding hazard: Rare, very brief
Depth to bedrock: More than 6 feet

Most areas are used for the crops that commonly are grown in support of dairy farming such as corn, oats and alfalfa. Small woodlots are in some areas, and some of the acreage is idle land or is used as pasture. The soil meets the requirements for prime farmland (fig. 5).

This soil is well suited to cultivated crops and to early season vegetables. It can be cultivated early in spring and can be used intensively for row crops. The rare flooding, droughtiness, and small stones in the soil are the main limitations for crop production. When flooding occurs it is usually early in spring, before crops are planted. The stones may interfere with planting and can cause excessive wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Minimizing tillage, growing cover crops, incorporating crop residues into the soil, and rotating crops improve tilth and helps to maintain organic matter content. Increasing the organic matter content improves the available water capacity of the soil.

Figure 5.—Snap beans in an area of Chenango channery silt loam, fan, 0 to 3 percent slopes. This soil is considered to be prime farmland, but the rock fragments on the surface can interfere with tillage in some areas.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Plant growth may be limited in midsummer. As a result, care is needed to prevent overgrazing during this period. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The main management concerns on sites for dwellings with basements are the hazard of flooding and depth to saturated zone early in spring. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action and rare flooding are the main management concerns if this soil is used as a site for local roads and streets. Building on raised fill material reduces the hazard of flooding and the potential for frost action.

The poor filtering capacity, depth to saturated zone and rare flooding are limitations if this soil is used as a site for septic tank absorption fields. Building on raised fill material reduces the hazard of flooding. Installing a drainage system in the area around the absorption fields may help to overcome the seasonal wetness. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum.

This soil is a potential source of sand and gravel.

The capability class is 2s.

26B—Chenango channery silt loam, fan, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is on alluvial fans and remnant deltas. Individual areas are essentially triangular or fan shaped. They commonly are 5 to 20 acres in size, but range from 5 to 50 acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown channery silt loam, with 25 percent channers

Subsoil:
9 to 27 inches, yellowish brown friable channery silt loam, with 30 percent channers
27 to 45 inches, yellowish brown friable very channery fine sandy loam, with 45 percent channers

Substratum:
45 to 72 inches, brown friable very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils near the lower margin of the fans. Also included are small areas of moderately well drained Middlebury soils, and small areas of Chenango soils that have a gravelly surface layer. Middlebury soils are in areas where the alluvial fans adjoin silty soils on alluvial flood plains, and well drained Valois soils where the Chenango soils adjoin the glaciated hillsides. Included soils make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of 3.0 to 6.0 feet from November through May
Flooding hazard: Rare, very brief
Depth to bedrock: More than 6 feet

Most areas are used for the crops that commonly are grown in support of dairy farming such as corn, oats and alfalfa. Small woodlots are in some areas, and some of the acreage is idle land or is used as pasture. The soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early season vegetables. It can be cultivated early in spring and can be used intensively for row crops. The rare flooding, droughtiness, and small stones in the soil are the main limitations for crop production. When flooding occurs, it is usually early in spring, before crops are planted. The stones may interfere with planting and can cause excessive wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Erosion is a hazard on long slopes if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Plant growth may be limited in midsummer. As a result, care is needed to prevent overgrazing during this period. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The main management concerns on sites for dwellings with basements are rare flooding and depth to saturated zone early in spring. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action and the hazard of flooding are the main management concerns if this soil is used as a site for local roads and streets. Building on raised fill material reduces the hazard of flooding and the potential for frost action.

The poor filtering capacity, depth to saturated zone, and rare flooding are limitations if this soil is used as a site for septic tank absorption fields. Installing a drainage system in the area around the absorption fields may help to overcome the seasonal wetness. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The soil is a potential source of sand and gravel.

The capability class is 2s.

27A—Castile gravelly silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and moderately well drained. It is on outwash plains, beach ridges, and stream terraces. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 50 acres in size, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 10 inches, dark grayish brown gravelly silt loam with 30 percent gravel

Subsoil:

10 to 17 inches, yellowish brown friable very gravelly silt loam, with 35 percent gravel

17 to 30 inches, light olive brown friable very gravelly loam, with yellowish brown iron accumulations and gray iron depletions and 40 percent gravel

Substratum:

30 to 72 inches, grayish brown stratified loose very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the somewhat poorly drained Red Hook soils in slight depressions and along the fringes of valleys and soils that have a sandy surface layer. Chenango soils are a common inclusion on higher rises and knolls. Olean soils are common inclusions where there is a thicker silty surface layer, especially along the edges of alluvial fans. Pawling soils are included along streams. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer, moderately rapid in the subsoil, and rapid in the substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to neutral in the substratum

Water table: At a depth of 1.5 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early season vegetables. Seasonal wetness in the early spring and fall may delay tillage and harvesting activities. It can be used intensively for row crops. Small rock fragments on the surface are a limitation. The rock fragments may interfere with the planting of some fine-seeded crops and can increase the wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Increasing the content of organic matter improves the available water capacity of the soil.

This soil is well suited to hay and pasture. It is suitable for grazing early in the growing season. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings in spring when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. If suitable outlets can be found, installing drainage tile along the footings of the foundation and sealing the foundation can help overcome wetness.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Removing the mantle of silty material and backfilling with coarse textured base material reduce the potential for frost action. Installing roadside drainage systems reduces the potential for frost action and wetness.

The depth to saturated zone and poor filtering capacity are limitations if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum. Installing a drainage system in the area around the absorption fields may help to overcome the seasonal wetness.

This soil is a potential source of sand and gravel.

The capability subclass is 2w.

27B—Castile gravelly silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on outwash plains, beach ridges, and stream terraces. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 50 acres in size, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 10 inches, dark grayish brown gravelly silt loam with 30 percent gravel

Subsoil:

10 to 17 inches, yellowish brown friable very gravelly silt loam, with 35 percent gravel

17 to 30 inches, light olive brown friable very gravelly loam, with yellowish brown iron accumulations and gray iron depletions and 40 percent gravel

Substratum:

30 to 72 inches, grayish brown loose stratified very gravelly sand, with 55 percent gravel

Included in mapping are small areas of the somewhat poorly drained Red Hook soils in slight depressions and along the fringes of valleys and soils that have a sandy surface layer. Chenango soils are a common inclusion on higher rises and knolls. Olean soils are common inclusions where there is a thicker silty surface layer, especially along the edges of alluvial fans. Pawling soils are included along streams. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer, moderately rapid in the subsoil, and rapid in the substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to neutral in the substratum

Water table: At a depth of 1.5 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early season vegetables. Seasonal wetness in the early spring and fall may delay tillage and harvesting activities. It can be used intensively for row crops. Erosion is a hazard on long slopes if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Small rock fragments on the surface are a limitation. The rock fragments may interfere with the planting of some fine-seeded crops and can increase the wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Increasing the content of organic matter improves the available water capacity of the soil.

This soil is well suited to hay and pasture. It is suitable for grazing early in the growing season. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings in spring when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. If suitable outlets can be found, installing drainage tile along the footings of the foundation and sealing the foundation can help overcome wetness.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Removing the mantle of silty material and backfilling with coarse textured base material reduce the potential for frost action. Installing roadside drainage systems reduces the potential for frost action and wetness.

The depth to saturated zone and poor filtering capacity are limitations if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum. Installing a drainage system in the area around the absorption fields may help to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability subclass is 2w.

28A—Scio silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep and moderately well drained. It is on broad flats in the larger valleys, and lowland areas on the lake plains. Individual areas are oblong or irregularly shaped, and range from 10 to 50 acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, dark grayish brown silt loam

Subsoil:

9 to 17 inches, yellowish brown friable silt loam

17 to 26 inches, yellowish brown friable silt loam, with strong brown iron accumulations and gray iron depletions

26 to 36 inches, dark yellowish brown friable silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions

Substratum:

36 to 50 inches, brown friable silt loam, with light brownish gray iron depletions

50 to 72 inches, dark brown loose gravelly loamy sand, with yellowish brown iron accumulations, and 20 percent gravel

Included in mapping are small areas of the somewhat poorly drained Tonawanda soils in slight depressions and along drainageways, and small areas of the well-drained Unadilla soils on small knolls and in the slightly higher positions in the landscape. Also included are small areas of Collamer soils which have a higher content of clay in the subsoil than the Scio soil, small areas of Olean soils which are underlain with sand and gravel, and a few spots of soils that have more rock fragments in the surface layer than the Scio soil. Included areas make up make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, and moderately rapid or rapid in the substratum
Available water capacity: High
Soil reaction: Very strongly acid or strongly acid in the surface layer (unless limed) and upper subsoil, very strongly acid to moderately acid in the lower subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for crops grown in support of dairy operations. Some of the acreage is idle land. Small woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county, including vegetables and legumes. The seasonal high water table may delay tillage and planting in spring. Draining the wetter included soils allows for more efficient management of the fields. This gravel-free soil can be easily tilled and is well suited to specialty crops. Row crops can be grown repeatedly if tilth and the content of organic matter are maintained by such measures as incorporating crop residue into the soil, plowing only when the soil is at the proper moisture content, growing cover crops and rotating crops.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing can damage pasture plants, and grazing when the soil is wet can compact the surface layer and seal the surface. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings in spring when the soil is moist, helps to ensure their survival.

The seasonal wetness is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The seasonal wetness and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and poor filtering capacity are limitations if this soil is used as a site for tank absorption fields, particularly in early spring. Care is needed to prevent the contamination of ground water resulting from rapid permeability in the substratum. Installing a drainage system in the area around the absorption field may help to overcome the seasonal wetness. Sloughing and the caving in of the unstable silty material are limitations affecting excavations.

The capability subclass is 2w.

29A—Chenango fine gravelly sandy loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and well drained. It is on outwash plains, beach ridges, and stream terraces. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 75 acres in size, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown fine gravelly sandy loam with 20 percent gravel

Subsoil:
9 to 25 inches, yellowish brown very friable fine gravelly sandy loam, with 30 percent fine gravel
25 to 30 inches, yellowish brown friable very fine gravelly loam, with 45 percent gravel

Substratum:
30 to 72 inches, brown friable very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys, and soils that have a silt loam surface texture. Also included are small areas of sandy Colonie soils, and silty well drained soils in areas where the Chenango soil adjoins Allard soils. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early season vegetables (fig. 6). It can be cultivated early in spring and can be used intensively for row crops. Droughtiness and small rock fragments on the surface are the main limitations. The rock fragments may interfere with the planting of some fine-seeded crops and can increase the wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Increasing the content of organic matter improves the available water capacity of the soil.

This soil is well suited to hay and pasture. It is suitable for grazing early in the growing season. Plant growth may be limited in midsummer. As a result, care is needed to prevent overgrazing during this period. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and erosion on roads and trails is slight. The potential for seedling mortality is low.

Figure 6.—Nursery stock in an area of Chenango fine gravelly sandy loam, 0 to 3 percent slopes. The production of specialty horticultural crops is a growing industry on this soil.

Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Backfilling with coarse textured base material reduce the potential for frost action.

The poor filtering capacity is the main limitation for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability of the substratum.

This soil is a potential source of sand and gravel.

The capability class is 2s.

29B—Chenango fine gravelly sandy loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is on outwash plains, beach ridges, and stream terraces. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 50 acres in size, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown fine gravelly sandy loam with 20 percent gravel

Subsoil:
9 to 25 inches, yellowish brown very friable fine gravelly sandy loam, with 30 percent fine gravel

25 to 30 inches, yellowish brown friable very gravelly loam, with 45 percent fine gravel

Substratum:
30 to 72 inches, brown friable very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys, and soils that have a silt loam surface texture. Also included are small areas of sandy Colonie soils and silty well drained soils in areas where the Chenango soil adjoins Allard soils. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early season vegetables. It can be cultivated early in spring and can be used intensively for row crops. Droughtiness and small rock fragments on the surface are the main limitations. The rock fragments may interfere with the planting of some fine-seeded crops and can increase the wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. Erosion is a hazard on long slopes if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Plant growth may be limited in midsummer. As a result, care is needed to prevent overgrazing during this period. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. Building skid trails and roads across the slope minimizes gullying along the trails and roads. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Removing the surface layer and backfilling with coarse textured base material reduce the potential for frost action.

The poor filtering capacity is the main limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability class is 2s.

29C—Chenango fine gravelly sandy loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and well drained. It is on rolling outwash plains, beach ridges, and stream terraces. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown fine gravelly sandy loam with 20 percent gravel

Subsoil:
9 to 25 inches, yellowish brown very friable fine gravelly sandy loam, with 30 percent fine gravel
25 to 30 inches, yellowish brown friable very gravelly loam, with 45 percent fine gravel

Substratum:
30 to 72 inches, brown friable very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys, and soils that have a silt loam surface texture. Also included are small areas of sandy Colonie soils and silty well drained soils in areas where the Chenango soil adjoins Allard soils. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay or for row crops grown in support of dairy farming. Scattered woodlots are in some areas, and some of the acreage is idle land.

This soil is moderately well suited to most of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. The slope, erosion, droughtiness, and gravel on the surface are the main limitations. The gravel may interfere with the planting of some crops and cause excessive wear on machinery. Erosion is a serious hazard on long slopes and in intensively cultivated areas. Farming on the contour, stripcropping, and establishing grassed waterways help to control erosion. Incorporating crop residue into the soil, minimizing tillage, growing cover crops, and including sod crops in the cropping sequence help to maintain tilth and reduce the hazard of erosion. These practices also increase the content of organic matter and thus improve the available water capacity of the soil. Crops respond well to applications of lime and fertilizer. Legumes respond especially well. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth, especially during dry periods, and can increase the hazard of erosion. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are important management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation.

Frost action and slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The poor filtering capacity is the main limitation for septic tank absorption fields. Care is needed to prevent the contamination of groundwater resulting from the rapid permeability in the substratum.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability subclass is 3e.

29D—Chenango fine gravelly sandy loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on hilly outwash plains, on terrace risers, and on dissected deltas. Individual areas are irregular in shape and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, brown fine gravelly sandy loam with 20 percent gravel

Subsoil:
9 to 25 inches, yellowish brown very friable fine gravelly sandy loam, with 30 percent fine gravel
25 to 30 inches, yellowish brown friable very gravelly loam, with 45 percent fine gravel

Substratum:
30 to 72 inches, brown friable very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys, soils that have a silt loam surface texture, small areas of sandy Colonie soils, silty well drained Allard soils, and small areas of the less sloping Chenango soils. Valois soils are in areas where the Chenango soil adjoins areas of glacial till. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush and shrubs. Some areas are used for hay, pasture, or row crops.

This soil is poorly suited to cultivated crops. The slope, the hazard of erosion, and droughtiness are the main management concerns. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth, and can increase the hazard of erosion. Deep-rooted legumes can be grown, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are important management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

The slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The poor filtering capacity and slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitations. Care is needed to prevent the contamination of ground water resulting from rapid permeability in the substratum.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

29E—Chenango fine gravelly sandy loam, 25 to 35 percent slopes

This soil is steep, very deep, and well drained. It is on terrace risers, the sides of ridges, and on the side slopes of dissected outwash plains. Individual areas are oblong or occur as narrow strips on the side slopes. They range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, brown fine gravelly sandy loam with 20 percent gravel

Subsoil:
9 to 25 inches, yellowish brown very friable fine gravelly sandy loam, with 30 percent fine gravel
25 to 30 inches, yellowish brown friable very gravelly loam, with 45 percent fine gravel

Substratum:
30 to 72 inches, brown friable very gravelly loamy sand, with 55 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along the fringes of valleys, soils that have a silt loam surface texture, small areas of sandy Colonie soils, silty well drained Allard soils and small areas of the less sloping Chenango soils. Valois soils are in areas where the Chenango soil adjoins areas of glacial till. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the surface layer and subsoil, and rapid in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used as woodland and wildlife habitat. Some of the acreage is idle land or is used as pasture.

This soil is not suited to cultivated crops or hay fields because of the slope and the severe hazard of erosion. Operating farm equipment is difficult and hazardous because of the slope. A plant cover is needed to control runoff.

This soil is poorly suited for pasture. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

The slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The poor filtering capacity and slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitations. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the substratum.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

31B—Collamer silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep and moderately well drained. It is on higher knolls and convex shoulders of drainageways on lowland lake plains. Individual areas are oblong or round, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam

Subsurface layer:
6 to 18 inches, pale brown friable silt loam

Subsoil:
18 to 24 inches, brown friable silt loam
24 to 31 inches, brown firm silty clay loam, with yellowish brown iron accumulation and grayish brown iron depletions
31 to 45 inches, brown firm silty clay loam, with yellowish brown iron accumulation and grayish brown iron depletions

Substratum:
45 to 72 inches, brown firm silt loam

Included in mapping are small areas of the somewhat poorly drained Niagara soils along drainageways, poorly drained Canandaigua soils in slight depressions, and the well drained Dunkirk soils on the higher knolls. Also included are small areas of silty Scio soils which contain less clay than the Collamer soils. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, and slow or moderately slow in the lower subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and upper subsoil, moderately acid to slightly alkaline in the lower subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for crops that commonly are grown in support of dairy farming, such as corn, oats, and alfalfa. Small, scattered woodlots are in some areas, and some of the acreage is used for hay and pasture or is idle land. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. It is especially well suited to vegetables, but planting may be delayed because of the seasonal wetness. Draining wet spots permits earlier tillage of many fields. The soil commonly has no rock fragments, and can be easily tilled. It is highly erodible in cultivated areas, especially where slopes are long. Measures that minimize surface crusting and compaction, and reduce the hazard of erosion are needed. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter. Farming on the contour, minimizing tillage, stripcropping, and maintaining year-round plant cover help to control erosion.

This soil is well suited to pasture. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture and results in erosion. Grazing when the soil is wet seals the surface and compacts the soil. Using proper stocking rates, rotating livestock grazing, and controlling weeds by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings in spring when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

Frost action and the depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding of coarse textured subgrade or base material increases soil strength and reduces the potential for frost action. Installing roadside drainage systems and building on raised fill material help to overcome the wetness and reduce the potential for frost heaving.

The depth to saturated zone and restricted permeability in the subsoil are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness. Adding permeable fill material helps overcome the slow permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

31C—Collamer silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep and moderately well drained. It is on ridges and the side slopes along drainageways on lowland lake plains. Individual areas are oblong and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam

Subsurface layer:
6 to 18 inches, pale brown friable silt loam

Subsoil:
18 to 24 inches, brown friable silt loam
24 to 31 inches, brown firm silty clay loam, with yellowish brown iron accumulation and grayish brown iron depletions
31 to 45 inches, brown firm silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
45 to 72 inches, brown firm silt loam

Included in mapping are small areas of the somewhat poorly drained Niagara soils along drainageways, poorly drained Canandaigua soils in slight depressions, and the well drained Dunkirk soils on the higher knolls. Also included are small areas of silty Scio soils which contain less clay than the Collamer soils. Included soils make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper subsoil, and slow or moderately slow in the lower subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and upper subsoil, moderately acid to slightly alkaline in the lower subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Many areas are used as hayland, pasture, or woodland. Some of the acreage is used for cultivated crops grown in support of dairy farming or is idle land.

This soil is moderately well suited to most of the crops commonly grown in the county. Erosion is a hazard where cultivated crops are grown. Planting may be delayed by wetness in spring. Draining wet spots permits earlier tillage of many fields. The soil commonly has no rock fragments and can be easily tilled. It is highly erodible in cultivated areas, especially where slopes are long. Measures that minimize surface crusting and compaction, and reduce the hazard of erosion are needed. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter. Farming on the contour, minimizing tillage, stripcropping, and maintaining year-round plant cover help to control erosion.

This soil is well suited to pasture. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture and results in erosion. Grazing when the soil is wet seals the surface and compacts the soil. Using proper stocking rates, rotating livestock grazing, and controlling weeds by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings in spring when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material increases soil strength and reduces the potential for frost action. Installing roadside drainage systems and building on raised fill material help to overcome the wetness and reduce the potential for frost heaving. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness. Adding permeable fill material helps overcome the slow permeability.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

32A—Churchville silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on broad flats, on lowland till plains and on lower slopes of valleys that receive runoff from higher adjacent soils. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size. Slopes are smooth.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam with 5 percent gravel

Subsurface layer:
8 to 14 inches, grayish brown friable silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions and less than 2 percent gravel

Subsoil:
14 to 22 inches, yellowish brown firm silty clay loam, with strong brown iron accumulations and light gray iron depletions
22 to 37 inches, brown firm silty clay loam, with yellowish brown iron accumulations and light gray iron depletions and less than 2 percent gravel

Substratum:
37 to 55 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and light gray iron depletions and 15 percent gravel
55 to 72 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and light gray iron depletions and 25 percent gravel

Included in mapping are small areas of poorly drained soils along drainageways; the somewhat poorly drained Darien soils, which do not have a clayey mantle; and the somewhat poorly drained Rhinebeck soils, which formed in clayey deposits thicker than those of the Churchville soil. Also included on lake plains, are areas of poorly drained Canandaigua soils that are silty throughout the profile. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsurface layer, and slow or very slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsurface layer, slightly acid to slightly alkaline in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is used for hay or pasture or is idle land. Areas on lake plains are used for vegetables or vineyards. A small acreage is wooded. Where drained, this unit meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops, but the seasonal wetness delays planting in spring and makes harvesting difficult in fall. Crops in slightly depressional areas are damaged during prolonged wet periods. The soil is subject to puddling and compaction if it is tilled when wet. If the soil is drained, this map unit is suited to many of the crops commonly grown in the county. Tile drains generally should be closely spaced because of the slowly permeable, clayey subsoil. Tilling only when the soil is the proper moisture content minimizes the crusting and clodding. Growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize crusting and clodding.

This soil is well suited to water-tolerant hay species and to grazing late in spring. Grazing when the soil is wet is the main management concern. It results in surface compaction, restricts plant growth, damages pasture grasses, and increases the hazard of erosion. Using proper stocking rates, rotating livestock grazing, restricting grazing when the soil is wet, and controlling brush and weeds by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the shrink-swell potential and frost action. Installing roadside drainage systems and building on raised fill material helps to overcome the wetness and reduce the potential for frost heaving.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the slow permeability.

Recompacting the soil when it is disturbed is often difficult because of the clay content.

The capability subclass is 3w.

32B—Churchville silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on the lower side slopes of valleys that receive runoff from the higher adjacent soils. Individual areas are oblong or irregularly shaped. They range from 5 to 40 acres in size, but some are as large as 200 acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, very dark grayish brown silt loam with 5 percent gravel

Subsurface layer:

8 to 14 inches, grayish brown friable silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions and less than 2 percent gravel

Subsoil:

14 to 22 inches, yellowish brown firm silty clay loam, with strong brown iron accumulations and light gray iron depletions

22 to 37 inches, brown firm silty clay loam, with yellowish brown iron accumulations and light gray iron depletions and less than 2 percent gravel

Substratum:

37 to 55 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and light gray iron depletions and 15 percent gravel

55 to 72 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and light gray iron depletions and 25 percent gravel

Included in mapping are small areas of poorly drained soils along drainageways; the somewhat poorly drained Darien soils, which do not have a clayey mantle; and the somewhat poorly drained Rhinebeck soils, which formed in clayey deposits thicker than those of the Churchville soil. Also included on lake plains, are areas of poorly drained Canandaigua soils that are silty throughout the profile. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsurface layer and slow or very slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer and subsurface layer, slightly acid to slightly alkaline in the subsoil, and slightly alkaline or moderately alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is hayland, pasture, woodland or idle land. Some areas are used for cultivated crops. Areas on lake plains are used for vegetables or vineyards. Where drained, this unit meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. The seasonal wetness delays planting in spring and makes harvesting difficult in fall. Erosion is a hazard in some intensively cultivated areas where slopes are long. Interceptor drains can divert runoff and subsurface seepage from the higher adjacent soils, and thus reduce the hazard of erosion. Tile drains generally should be closely spaced because of the slowly permeable, clayey subsoil. Tilling only when the soil is at the proper moisture content minimizes the surface crusting and clodding. Growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize crusting and clodding. These practices, along with farming on the contour and stripcropping, also reduce the hazard of erosion.

This soil is well suited to water-tolerant hay species and to grazing late in spring. Grazing when the soil is wet is the main management concern. It results in surface compaction, restricts plant growth, damages pasture grasses, and increases the hazard of erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, and controlling brush and weeds by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone, frost action and shrink-swell potential are the main limitations on sites for local roads and streets. Adding coarse textured subgrade or base material reduces the shrink-swell potential and frost action. Installing roadside drainage systems and building on raised fill material helps to overcome the wetness and reduce the potential for frost heaving.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the slow permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3w.

33A—Wallington silt loam, 0 to 3 percent slopes

This soil is nearly level very deep, and somewhat poorly drained. It is mainly in low areas on lake plains and to a lesser extent on broad flats in the larger valleys. Individual areas are oblong or irregularly shaped. They range from 10 to 75 acres in size, but some are as large as 100 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsurface layer:
8 to 14 inches, light brownish gray friable silt loam, with strong brown iron accumulations

Subsoil:
14 to 23 inches, brown firm silt loam, with strong brown iron accumulations and light brownish gray iron depletions
23 to 38 inches, dark brown very firm silt loam, with yellowish brown iron accumulations and gray iron depletions

Substratum:
38 to 72 inches, brown firm silt loam, with gray iron depletions and 5 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways; moderately well drained Williamson soils on higher rises and knolls; somewhat poorly drained Tonawanda soils, and poorly drained silty Canandaigua soils where the fragipan is absent. Also included are small areas of Wallington soils that have a gravelly substratum. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface and slow in the fragipan and substratum
Available water capacity: Very low or Low
Soil reaction: Very strongly acid to moderately acid in the surface and subsurface layer, very strongly acid to neutral in the fragipan, and moderately acid to neutral in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops or hay grown in support of dairy farming, are idle land, or are woodland. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops and vegetables. The seasonal high water table may delay planting and can make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where outlets are available. Tile drains should be closely spaced because of the slow permeability in the fragipan and substratum. The soil is subject to puddling and compaction if it is tilled when wet. Growing cover crops, minimizing tillage, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter and minimize crusting and clodding.

This soil is suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to overcome these limitations.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the slow permeability.

The capability subclass is 3w.

34—Getzville silt loam

This soil is very deep, nearly level, and poorly drained. It is mainly on the lowland plains in the major valleys. Individual areas are oblong. Areas range from 10 to 50 acres in size, but some are as large as 100 acres or more. Slopes generally are smooth and are less than 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark gray silt loam

Subsoil:

9 to 16 inches, light brownish gray friable silt loam, with yellowish brown, yellowish red and reddish brown iron accumulations

16 to 24 inches, light brownish gray friable silty clay loam, with yellowish brown and reddish brown iron accumulations

Substratum:
24 to 50 inches, gray loose fine sand
50 to 72 inches, gray loose fine and medium sands

Included in mapping are small areas of the somewhat poorly drained Swormville soils on the slightly higher benches and small areas of the somewhat poorly drained Tonawanda soils and poorly drained Canandaigua soils, which are silty throughout. Also included are small areas of Lamson soils, which are sandy throughout, and a few areas having a mucky surface texture. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and subsoil, moderately rapid in the substratum
Available water capacity: Moderate to high
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and neutral to slightly alkaline in the substratum
Water table: At the surface or within 0.5 feet of the surface from November through June
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is idle land that supports water-tolerant grasses, brush and trees. Some areas are used as pasture, and a few areas have been drained and are cultivated. This soil meets the requirements for hydric soils.

This soil is poorly suited for cultivated crops because of prolonged wetness. If drained, this soil is suited to many crops. Draining the soil may be difficult because of its low position in the landscape. Generally, some combination of open ditches and subsurface drains is desirable. Because of the sandy substratum, drains do not have to be closely spaced. Tilth and soil structure deteriorate if the soil is plowed when wet. Growing cover crops, incorporating crop residue into the soil, tilling only when the soil is at the proper moisture content, and including sod crops in the cropping system help to maintain tilth and increase the content of organic matter.

This soil is marginally suited to pasture. Grazing when the soil is wet can result in surface compaction, puddling and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate. Tree species that can withstand the seasonal wetness grow best.

Depth to saturated zone is the main management concern on sites for dwellings with basements. This soil is too wet for the construction of dwellings with basements without major modifications. Included areas of the somewhat poorly drained Tonawanda soils are better sites for these dwellings. Building on raised fill material helps to overcome the wetness.

Depth to saturated zone and frost action are the main limitations on sites for local roads and streets. Building on raised fill material, adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and restricted permeability are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

This soil is suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

35A—Rhinebeck silt loam, 0 to 3 percent slopes

This soil is nearly level very deep, and somewhat poorly drained. It is formed in clayey lacustrine sediments on glacial lake plains. Individual areas are oblong and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam

Subsoil:
9 to 13 inches, dark yellowish brown friable silty clay loam, with yellowish brown iron accumulations and gray iron depletions
13 to 20 inches, dark yellowish brown firm silty clay, with yellowish brown iron accumulations and gray iron depletions
20 to 38 inches, brown firm silty clay, with yellowish brown iron accumulations and gray iron depletions

Substratum:
38 to 72 inches, grayish brown firm silty clay loam with gray lenses of silt loam, with brown iron accumulations and gray iron depletions

Included in mapping are small areas of the poorly drained Canadice soils in slight depressions and along drainageways, poorly drained Canandaigua soils which have less clay in the subsoil than the Rhinebeck soil, and the moderately well drained Collamer soils on small knolls and slight rises. Also included are small areas of Churchville soils which have glacial till within a depth of 40 inches, and somewhat poorly drained Niagara soils which have less clay in the subsoil than Rhinebeck soils. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately slow or moderate in the surface layer and slow in the subsoil and substratum
Available water capacity: Moderate to high
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops or hay grown in support of dairy farming, or are idle land or woodland. Where drained, this map unit meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. The seasonal high water table may delay planting and can make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where outlets are available. Tile drains should be closely spaced because of the restricted permeability. The soil is subject to puddling and compaction if it is tilled when wet. Growing cover crops, minimizing tillage, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter, and minimize crusting and clodding.

This soil is moderately well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone, frost action and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and the potential for frost action and increase soil strength.

The depth to saturated zone and restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3w.

35B—Rhinebeck silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is formed in clayey lacustrine sediments on glacial lake plains. Individual areas are oblong and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam

Subsoil:
9 to 13 inches, dark yellowish brown friable silty clay loam, with yellowish brown iron accumulations and gray iron depletions
13 to 20 inches, dark yellowish brown firm silty clay, with yellowish brown iron accumulations and gray iron depletions
20 to 38 inches, brown firm silty clay, with yellowish brown iron accumulations and gray iron depletions

Substratum:
38 to 72 inches, grayish brown firm silty clay loam with gray lenses of silt loam, with brown iron accumulations and gray iron depletions

Included in mapping are small areas of the poorly drained Canadice soils in slight depressions and along drainageways; poorly drained Canandaigua soils which have less clay in the subsoil than the Rhinebeck soil; and the moderately well drained Collamer soils on small knolls and slight rises. Also included are small areas of

Churchville soils which have glacial till within a depth of 40 inches, and somewhat poorly drained Niagara soils which have less clay in the subsoil than Rhinebeck soils. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately slow or moderate in the surface layer and slow in the subsoil and substratum
Available water capacity: Moderate to high
Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from
November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is hayland, pasture, woodland, or idle land. Some areas are used for cultivated crops in support of dairy farming. Where drained, this unit meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. The seasonal wetness delays planting in spring and makes harvesting difficult in fall. Erosion is a hazard on long slopes that are intensively cultivated. Interceptor drains can divert runoff and subsurface seepage from the higher adjacent soils and thus reduce the hazard of erosion. Tile drains generally should be closely spaced because of the slowly permeable, clayey subsoil. Tilling only when the soil is at the proper moisture content, minimizes the surface crusting and clodding. Growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize crusting and clodding. These practices, along with farming on the contour and stripcropping, also reduce the hazard of erosion.

This soil is moderately well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation on sites for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone, frost action, and shrink-swell potential are the main limitations on sites for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and the potential for frost action and increase soil strength.

The depth to saturated zone and restricted permeability in the subsoil and substratum are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3w.

35C—Rhinebeck silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is formed in clayey lacustrine sediments on glacial lake plains. Individual areas are oblong and range from 10 to 35 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown silt loam

Subsoil:

9 to 13 inches, dark yellowish brown friable silty clay loam, with yellowish brown iron accumulations and gray iron depletions

13 to 20 inches, dark yellowish brown firm silty clay, with yellowish brown iron accumulations and gray iron depletions

20 to 38 inches, brown firm silty clay, with yellowish brown iron accumulations and gray iron depletions

Substratum:

38 to 72 inches, grayish brown firm silty clay loam with gray lenses of silt loam, with brown iron accumulations and gray iron depletions

Included in mapping are small areas of the poorly drained Canadice soils in slight depressions and along drainageways; poorly drained Canandaigua soils which have less clay in the subsoil than the Rhinebeck soil; and the moderately well drained Collamer soils, on small knolls and slight rises. Also included are small areas of Churchville soils, which have glacial till within a depth of 40 inches, and somewhat poorly drained Niagara soils which have less clay in the subsoil than Rhinebeck soils. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately slow or moderate in the surface layer and slow in the subsoil and substratum

Available water capacity: Moderate to high

Soil reaction: Strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum

Water table: At a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is hayland, pasture, woodland or idle land. Some areas are used for cultivated crops in support of dairy farming.

This soil is moderately well suited to cultivated crops. Erosion is a hazard where cultivated crops are grown. The seasonal wetness delays planting in spring and makes harvesting difficult in fall. Interceptor drains can divert runoff and subsurface seepage from the higher adjacent soils and thus reduce the hazard of erosion. Tile drains generally should be closely spaced because of the slowly permeable, clayey subsoil. Tilling only when the soil is at the proper moisture content, minimizes the surface crusting and clodding. Growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize crusting and clodding. These practices, along with farming on the contour and stripcropping, also reduce the hazard of erosion.

This soil is moderately well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and the potential for frost action, and increase soil strength. Land grading and building on the contour help to overcome the slope limitation.

The depth to the saturated zone and restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3e.

36—Canadice silty clay loam

This soil is very deep, nearly level, and poorly drained. It is in depressions on lake plains and in the major valleys. Individual areas are oblong or circular and range from 10 to 30 acres in size. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark gray silty clay loam

Subsoil:
8 to 18 inches, grayish brown firm silty clay loam, with yellowish brown iron accumulations
18 to 29 inches, olive gray firm silty clay with strong brown iron accumulations
29 to 42 inches, dark gray firm silty clay, with strong brown iron accumulations

Substratum:
42 to 72 inches, grayish brown firm silty clay loam with varves of silty clay and brown iron accumulations and gray iron depletions

Included in mapping are small areas of the somewhat poorly Rhinebeck soils on the slightly elevated parts of the landscape and small areas of Canandaigua soils, which are more silty than the Canadice soil. Also included are small areas of poorly drained Getzville soils which are underlain with sand and gravel and small areas of soils that have a mucky surface layer and are in depressions and potholes. Included areas make up about 20 to 30 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer, and very slow in the subsoil and substratum
Available water capacity: Moderate to high
Soil reaction: very strongly acid to slightly acid in the surface layer, very strongly acid to slightly alkaline in the subsoil, and from neutral to moderately alkaline in the substratum
Water table: At the surface or at a depth of 1.0 foot from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is idle land that supports water-tolerant grasses, brush, and trees. Some areas are used for hay or pasture. This soil meets the requirements for hydric soils.

This soil is poorly suited to cultivated crops unless the soil is drained. Draining the soil is commonly difficult because slopes are nearly level and suitable outlets are not available. A combination of surface and tile drains is needed. Because of the very slow permeability, subsurface drains should be closely spaced. Where a drainage system is feasible, the soil can be used for selected crops, but maintaining tilth is a management concern. Because of the high content of clay, clodding and crusting of the surface are management concerns. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content, help to maintain good tilth and the content of organic matter.

This soil is marginally suited to hay and to late-spring pasture. Undrained areas cannot be grazed in spring because of the risk of damage to the surface layer. Overgrazing and surface compaction can damage desirable plant species and cause water to pond on the surface. Partially draining the soil, using proper stocking rates, rotating livestock grazing, controlling brush and weeds by mowing annually, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand seasonal wetness grow best.

Depth to saturated zone and shrink-swell potential are the main management concerns on sites for dwellings with basements. The soil is too wet for the construction of dwellings with basements without major modifications. Adjacent areas that are more suitable should be considered for dwellings.

Depth to saturated zone and shrink-swell potential are the main management concerns on sites for local roads and streets. Frost action is also a limitation. Building on raised fill material will help to reduce these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

Capability subclass is 4w.

37A—Tonawanda silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on broad flats on lake plains and in low areas in the larger valleys. Individual areas are irregular in shape and generally range from 10 to 75 acres in size, but some are as large as 200 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam with 2 percent gravel

Subsoil:
9 to 14 inches, brown friable silt loam, with yellowish brown iron accumulations, gray iron depletions and 2 percent gravel
14 to 22 inches, grayish brown friable silt loam, with yellowish brown and strong brown iron accumulations, gray iron depletions and 2 percent gravel
22 to 38 inches, grayish brown friable silt loam, with yellowish brown and yellowish red iron accumulations, gray iron depletions and 2 percent gravel

Substratum:
38 to 64 inches, grayish brown, yellowish brown, and gray friable silt loam, with 5 percent gravel
64 to 72 inches, grayish brown loose stratified loamy fine sand and medium sand and 10 percent gravel

Included in mapping are small areas of poorly drained Getzville soils in slight depressions which are underlain by sandy deposits; moderately well drained Scio soils on small knolls and in the slightly higher positions on the landscape; Swormville soils which are underlain by sandy deposits; and Red Hook soils which have gravelly layers in the subsoil. Included areas make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and subsoil, and moderately slow or slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and subsoil, and moderately acid to slightly alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops grown in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops and vegetables. The seasonal high water table may delay planting and make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where adequate outlets are available. This relatively stone-free soil generally can be easily tilled, but tilth and soil structure deteriorate if the soil is plowed when wet. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth and increase the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soils are wet, are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations on sites for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and restricted permeability.

The capability subclass is 3w.

37B—Tonawanda silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep and somewhat poorly drained. It is on broad flats on lake plains and in low areas in the larger valleys. Individual areas are irregular in shape and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown silt loam with 2 percent gravel

Subsoil:

9 to 14 inches, brown friable silt loam, with yellowish brown iron accumulations, gray iron depletions and 2 percent gravel

14 to 22 inches, grayish brown friable silt loam, with yellowish brown and strong brown iron accumulations, gray iron depletions and 2 percent gravel

22 to 38 inches, grayish brown friable silt loam, with yellowish brown and yellowish red iron accumulations, gray iron depletions and 2 percent gravel

Substratum:

38 to 64 inches, grayish brown, yellowish brown and gray friable silt loam, with 5 percent gravel

64 to 72 inches, grayish brown loose stratified loamy fine sand and medium sand and 10 percent gravel

Included in mapping are small areas of poorly drained Getzville soils in slight depressions which are underlain by sandy deposits; the moderately well drained Scio soils on small knolls and in the slightly higher positions on the landscape; Swormville soils which are underlain by sandy deposits; and Red Hook soils which have gravelly layers in the subsoil. Included areas make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and subsoil, and moderately slow or slow in the substratum

Available water capacity: High

Soil reaction: Strongly acid to neutral in the surface layer and subsoil, and moderately acid to slightly alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops grown in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops and vegetables. The seasonal high water table may delay planting and can make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where adequate outlets are available. Generally, this relatively stone-free soil can be easily tilled, but tilth and soil structure deteriorate if the soil is plowed when wet. If cultivated, erosion is a concern, especially where slopes are long. Measures that minimize surface crusting and compaction and control runoff are needed. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth and increase the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages the pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soils are wet, are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and the frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome the seasonal wetness and restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

38A—Niagara silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is mainly in low areas on lake plains and to a lesser extent on broad flats in the larger valleys. Individual areas are oblong or irregularly shaped. They range from 10 to 75 acres in size, but some are as large as 200 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsurface layer:
8 to 12 inches, brown friable silt loam

Subsoil:
16 to 24 inches, brown firm silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions
24 to 36 inches, brown firm silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
36 to 72 inches, brown firm silt loam, with light brownish gray iron depletions

Included in mapping are small areas of the poorly drained Canandaigua soils in slight depressions and along drainageways; Rhinebeck soils which have more clay in the subsoil than the Niagara soil; and Churchville soils which have glacial till within a depth of 40 inches. Also included are small areas of Niagara soils that have a gravelly substratum. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, moderately slow in the subsoil, and moderately slow or slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and subsurface layer, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops or hay grown in support of dairy farming, are idle land, or are woodland. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops and vegetables. The seasonal high water table may delay planting and can make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where outlets are available. Tile drains should be closely spaced because of the moderately slow or slow permeability. The soil is subject to puddling and compaction if it is tilled when wet. Growing cover crops, minimizing tillage, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter and minimize crusting and clodding.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations on sites for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the slow permeability.

The capability subclass is 3w.

38B—Niagara silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is mainly in low areas on lake plains and to a lesser extent on broad flats in the larger valleys. Individual areas are oblong or irregularly shaped. They commonly range from 10 to 75 acres in size, but some are as large as 100 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam

Subsurface layer:
8 to 12 inches, brown friable silt loam

Subsoil:
12 to 16 inches, grayish brown firm silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions
16 to 24 inches, brown firm silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions
24 to 36 inches, brown firm silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
36 to 72 inches, brown firm silt loam, with light brownish gray iron depletions

Included in mapping are small areas of the poorly drained Canandaigua soils in slight depressions and along drainageways; Rhinebeck soils which have more clay in the subsoil than the Niagara soil; and Churchville soils which have glacial till within a depth of 40 inches. Also included are small areas of Niagara soils that have a gravelly substratum. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, moderately slow in the subsoil, and moderately slow or slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer and subsurface layer, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops or hay grown in support of dairy farming, are idle land, or are woodland. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops and vegetables. The seasonal high water table may delay planting and can make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where outlets are available. Tile drains should be closely spaced because of the restricted permeability. If cultivated, erosion may be a concern, especially where slopes are long. Measures that minimize surface crusting and compaction, and control runoff are needed. Growing cover crops, minimizing tillage, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter and minimize crusting and clodding.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and restricted permeability in the subsoil and substratum are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the slow permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

39A—Halsey silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and very poorly drained. It is in low areas and depressions on outwash plains. Individual areas are circular or oblong. They generally range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, very dark gray silt loam with 10 percent gravel

Subsoil:
6 to 21 inches, gray very friable gravelly silt loam, with yellowish brown iron accumulations, and 15 percent gravel

21 to 34 inches, gray very friable gravelly loam, with yellowish brown iron accumulations, and 20 percent gravel

Substratum:
34 to 48 inches, dark grayish brown loose very gravelly loamy fine sand, with yellowish brown iron accumulations, and 45 percent gravel
48 to 72 inches, dark grayish brown loose stratified gravelly sand, with yellowish brown iron accumulations and 30 percent gravel

Included in mapping are small areas of the somewhat poorly drained Red Hook soils on the slightly higher rises and benches; soils having a subsoil that is finer textured than that of the Halsey soil; and soils that have a mucky surface layer. Also included are small areas of Alden and Lamson soils. Alden soils have more clay in the subsoil and Lamson soils are sandy throughout the profile. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderate or moderately rapid in the subsoil, and rapid in the substratum
Available water capacity: Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer and subsoil, slightly acid to moderately alkaline in the substratum
Water table: At the surface or to a depth of 0.5 feet from September through June
Flooding hazard: None
Depth to bedrock: More than 6 feet
Ponding hazard: As much as 0.5 feet above the surface from October through May

Most of the acreage is idle land that supports water-tolerant grasses, brush, and trees. Some areas are used as pasture, and some drained areas are cultivated. This soil meets the requirements for hydric soils.

Unless drained, this soil is not suited to cultivated crops. If properly drained, this soil is suited to a variety of crops. Draining this soil may be difficult because of its low position in the landscape. Tilth and structure will deteriorate if the soil is plowed when wet. If this soil is drained and cultivated, using cover crops, minimum tillage, incorporating crop residue into the soil, tillage at the proper soil moisture content and including sod crops in the cropping system helps to maintain tilth and increase organic matter content.

This soil is poorly suited for pasture. The surface layer can easily become compacted when wet. Surface compaction and overgrazing can deplete the stand of desirable plant species and result in ponding. The pasture plants selected for seeding should be those that can withstand long wet periods and restricted root growth. The pasture should be plowed, a seedbed prepared, and seeds planted during dry periods in summer. Using proper stocking rates, rotating livestock grazing, and controlling brush and weeds by mowing annually are the main management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

Ponding and depth to saturated zone are the main management concerns if this soil is used as a site for dwellings with basements. The soil is too wet for the construction of dwellings with basements without major modifications. Included areas of the somewhat poorly drained Red Hook soils may be slightly better sites for these dwellings. Building on raised fill material helps to overcome the wetness.

Ponding, depth to saturated zone, and frost action are the main management concerns if this soil is used as a site for local roads and streets. Building on raised fill material helps to overcome the wetness and reduces the potential for frost action.

Ponding, depth to saturated zone, and poor filtering capacity are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

This soil is suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 5w.

40A—Williamson silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and moderately well drained. It is on former lake plains and silt mantled uplands. Individual areas are oblong or circular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam

Subsoil:
8 to 14 inches, yellowish brown friable silt loam
14 to 20 inches, pale brown friable silt loam, with strong brown iron accumulations
20 to 38 inches, a fragipan of dark yellowish brown very firm silt loam, with strong brown iron accumulations and grayish brown iron depletions

Substratum:
38 to 54 inches, brown firm silt loam, with strong brown iron accumulations and grayish brown iron depletions
54 to 72 inches, olive brown firm silt loam, with varves of very fine sandy loam

Included in mapping are small areas of the somewhat poorly drained Wallington soils along drainageways and slight depressions, and somewhat poorly drained Tonawanda soils in depressions. Moderately well drained Scio soils and well drained Unadilla soils are included where the fragipan is absent. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface and upper part of the subsoil, very slow or slow in the fragipan and substratum
Available water capacity: Low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface, subsurface, and fragipan layer; and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.2 to 1.8 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops grown in support of dairy farming. Some of the acreage is idle land that is reverting to brush and shrubs, or is wooded. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. Draining wet spots permits earlier tillage of fields. The soil commonly has no stones on the surface and can be easily tilled. The soil is erodible in cultivated areas, especially where slopes are long. Measures that minimize surface crusting and compaction and reduce the hazard of erosion are needed. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to pasture. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture and results in erosion. Grazing when the soil is wet seals the surface and compacts the soil. Using proper stocking rates, rotating livestock grazing, and controlling weeds by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding a coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action and wetness.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps overcome the very slow or slow permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

40B—Williamson silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on former lake plains and silt mantled uplands. Individual areas are oblong or circular and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam

Subsoil:
8 to 14 inches, yellowish brown friable silt loam,
14 to 20 inches, pale brown friable silt loam, with strong brown iron accumulations
20 to 38 inches, a fragipan of dark yellowish brown very firm silt loam, with strong brown iron accumulations and grayish brown iron depletions

Substratum:
38 to 54 inches, brown firm silt loam, with strong brown iron accumulations and grayish brown iron depletions
54 to 72 inches, olive brown firm silt loam, with varves of very fine sandy loam

Included in mapping are small areas of the somewhat poorly drained Wallington soils along drainageways and slight depressions, and somewhat poorly drained Tonawanda soils in depressions. Moderately well drained Scio soils and well drained Unadilla soils are included where the fragipan is absent. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layers, very slow or slow in the fragipan layer and substratum
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid in surface, subsurface, and fragipan layer; and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.2 to 1.8 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops grown in support of dairy farming. Some of the acreage is idle land that is reverting to brush and shrubs, or is wooded. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. Draining wet spots permits earlier tillage of fields. The soil commonly has no stones and can be easily tilled. The soil is highly erodible in cultivated areas, especially where slopes are long. Measures that minimize surface crusting and compaction, and reduce the hazard of erosion are needed. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter. Farming on the contour, minimizing tillage, stripcropping, and maintaining year-round plant cover help to control erosion.

This soil is well suited to pasture. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture and results in erosion. Grazing when the soil is wet seals the surface and compacts the soil. Using proper stocking rates, rotating livestock grazing, and controlling weeds by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation on sites for dwellings with basements. Where outlets are available, installing drains around footings reduces wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding a coarse textured subgrade or base material and installing roadside drainage systems reduces the potential for frost action and wetness.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps overcome the slow permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e

40C—Williamson silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep and moderately well drained. It is on silt mantled uplands and the edges of lake plains. Individual areas are oblong, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam

Subsoil:
8 to 14 inches, yellowish brown friable silt loam,
14 to 20 inches, pale brown friable silt loam, with strong brown iron accumulations
20 to 38 inches, a fragipan of dark yellowish brown very firm silt loam, with strong brown iron accumulations and grayish brown iron depletions

Substratum:
38 to 54 inches, brown firm silt loam, with strong brown iron accumulations and grayish brown iron depletions
54 to 72 inches, olive brown firm silt loam, with varves of very fine sandy loam

Included in mapping are small areas of the somewhat poorly drained Wallington soils along drainageways and slight depressions, and somewhat poorly drained Tonawanda soils in depressions. Moderately well drained Scio soils and well drained Unadilla soils are included where the fragipan is absent. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layers, very slow or slow in the fragipan layer and substratum
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid in surface, subsurface and fragipan layer and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.2 to 1.8 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Many areas are used as hayland, pasture, or woodland. Some of the acreage is used for cultivated crops grown in support of dairy farming or is idle land.

This soil is moderately well suited to most of the crops commonly grown in the county. Erosion is a hazard where cultivated crops are grown. Planting may be delayed by wetness in spring. Draining wet spots permits earlier tillage of fields. The soil commonly has no stones and can be easily tilled. It is highly erodible in cultivated areas, especially where slopes are long. Measures that minimize surface crusting and compaction, and reduce the hazard of erosion are needed. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter. Farming on the contour, minimizing tillage, stripcropping, and maintaining year-round plant cover help to control erosion.

This soil is well suited to pasture. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture and results in erosion. Grazing when the soil is wet seals the surface and compacts the soil. Using proper stocking rates, rotating livestock grazing, and controlling weeds by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Frost action, depth to saturated zone, and slope are the main limitations if this soil is used as a site for local roads and streets. Adding a coarse textured subgrade or base material and installing roadside drainage systems reduces the potential for frost action and wetness. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps overcome the slow permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

41A—Barcelona silt loam, 0 to 3 percent slopes

This soil is nearly level, deep, and somewhat poorly drained. It is formed in glacial lake-laid sediment and in the underlying till. It is in areas of lake plains where bedrock is at a depth of 40 to 60 inches. Individual areas are oblong. They commonly are from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam with less than 2 percent channers

Subsurface layer:
9 to 21 inches, grayish brown friable silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 2 percent channers

Subsoil:
21 to 36 inches, brown firm silty clay loam, with yellowish brown iron accumulations and gray iron depletions and 2 percent channers
36 to 42 inches, brown firm channery silt loam, with yellowish brown iron accumulations and gray iron depletions and 15 percent channers

Substratum:
42 to 46 inches, gray, brown and yellowish brown firm very channery silt loam with 50 percent channers
46 inches, dark rippable shale bedrock

Included in mapping are small areas of Rhinebeck and Churchville soils, which have more clay in the subsoil than the Barcelona soil and are very deep over bedrock, and small areas of Niagara soils, which are not underlain by glacial till. Also included are small areas of soils that are similar to the Barcelona soil, but are poorly drained and are in depressions and along drainageways, and small areas of soils that have bedrock within a depth of 40 inches. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsurface layer and in the upper part of the subsoil, and moderately slow or moderate in the lower subsoil and substratum
Available water capacity: High

Soil reaction: Moderately acid to neutral in the surface layer, and from moderately acid to slightly alkaline in the subsurface layer, subsoil, and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most of the acreage is idle land. Cleared areas are used for cultivated crops, vegetables, hay, or vineyards. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. Undrained areas are better suited to short season crops and to hay and pasture. Wetness delays tillage in spring and makes harvesting difficult in fall. Crops in depressional areas are damaged during prolonged wet periods. The soil is subject to puddling and compaction if it is tilled when wet. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Growing cover crops, returning crop residues to the soil, and including sod crops in the cropping system help to maintain good tilth and minimize crusting and clodding.

This soil is well suited to water-tolerant hay and to late-spring pasture. Grazing when the soil is wet is the main concern in managing pasture. It causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses. Using proper stocking rates, rotating livestock grazing, restricting grazing when the soil is wet, and controlling brush and weeds by mowing annually are the major management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and depth to soft bedrock are the main limitations if this soil is used as a site for dwellings with basements. Although excavation is costly, the shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are limitations if this soil is used as a site for local roads and streets. Building on raised coarse textured fill material and installing a drainage system reduce the wetness and potential for frost action.

The depth to saturated zone, the restricted permeability in the subsoil and substratum, and depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness.

The capability subclass is 3w.

41B—Barcelona silt loam, 3 to 8 percent slopes

This soil is gently sloping, deep, and somewhat poorly drained. It formed in glacial lake-laid sediment and in the underlying till. It is in areas on former lake plains where bedrock is at a depth of 40 to 60 inches. Individual areas are oblong, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—
Surface layer:
0 to 9 inches, very dark grayish brown silt loam with less than 2 percent channers

Subsurface layer:
9 to 21 inches, grayish brown friable silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 2 percent channers

Subsoil:
21 to 36 inches, brown firm silty clay loam, with yellowish brown iron accumulations and gray iron depletions and 2 percent channers
36 to 42 inches, brown firm channery silt loam, with yellowish brown iron accumulations and gray iron depletions and 15 percent channers

Substratum:
42 to 46 inches, gray, brown and yellowish brown firm very channery silt loam with 50 percent channers
46 inches, dark rippable shale bedrock

Included in mapping are small areas of Rhinebeck and Churchville soils, which have more clay in the subsoil than the Barcelona soil and are very deep over bedrock, and small areas of Niagara soils which are very deep over bedrock and are not underlain by glacial till. Also included are small areas of soils that are similar to the Barcelona soil but are poorly drained, and are in depressions and along drainageways. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsurface layer and in the upper part of the subsoil, and moderately slow or moderate in the lower subsoil and substratum
Available water capacity: High
Soil reaction: Moderately acid to neutral in the surface layer, and moderately acid to slightly alkaline in the subsurface layer, subsoil, and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most of the acreage is idle land. Some areas are vineyards that have been abandoned. Cleared areas are used for cultivated crops, vegetables, hay, or vineyards. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. If a drainage system is installed, and tilth and fertility are maintained, the soil is suited to many of the crops commonly grown in the county. Undrained areas are better suited to short-season crops and to hay and pasture. Wetness delays tillage in spring and makes harvesting difficult in late fall. Erosion is a hazard in intensively cultivated areas where slopes are long. Interceptor drains can divert runoff and seepage from the higher adjacent soils, and thus reduce the hazard of erosion. Puddling and compaction can occur if the soil is tilled when wet. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Minimizing tillage, growing cover crops, tilling across the slope, returning crop residue to the soil, including grasses and legumes in the cropping system, and plowing only when the soil is at the proper moisture content help to maintain good tilth and control erosion.

This soil is well suited to water-tolerant hay and to late-spring pasture. Grazing when the soil is wet is the main concern in managing pasture. It causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, restricting grazing when the soil is wet, and controlling brush and weeds by mowing annually are desirable management practices.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and depth to soft bedrock are the main limitations if this soil is used as a site for dwellings with basements. Although excavation is costly, the shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are limitations if this soil is used as a site for local roads and streets. Building on coarse textured raised fill material and installing a drainage system reduce the wetness and potential for frost action.

The depth to saturated zone, restricted permeability in the subsoil and substratum, and depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness.

This soil is subject to erosion if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

42A—Elnora fine sandy loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and moderately well drained. It is on broad flats on lowland lake plains and in the major valleys. Individual areas are oblong or irregularly shaped and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 16 inches, strong brown friable, loamy fine sand
16 to 27 inches, yellowish brown friable loamy fine sand, with strong brown iron accumulations

Substratum:
27 to 30 inches, brown loose fine sand, with yellowish brown iron accumulations, and 10 percent gravel
30 to 72 inches, grayish brown loose fine sand, with yellowish brown iron accumulations, and 2 percent gravel

Included in mapping are small areas of the somewhat poorly drained Minoa soils along drainageways and in slight depressions. Also included are spots of the well drained Colonie soils on small knolls and slightly higher positions on the landscape, and small areas of soils that have an increased content of clay, occurring in bands or thin layers, in the subsoil. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately rapid in the surface layer, and rapid in the subsoil and substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid to slightly acid in the surface layer and subsoil, and strongly acid to neutral in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May

Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops grown in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops and to early season vegetables. Crop growth is limited by droughtiness in mid-summer and by low natural fertility. This stone-free soil generally can be easily tilled. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth, and increase the content of organic matter. Increasing the content of organic matter improves the available water capacity of the soil. Crops respond well to sufficient applications of lime and fertilizer.

This soil is moderately well suited to hay and pasture. The sandy texture, and potential for droughtiness in mid-summer are the main management concerns. Because plant growth commonly is limited during mid-summer, overgrazing at this time may deplete the stand of pasture grasses. Using proper stocking rates, rotating livestock grazing, deferring grazing as needed, controlling brush and weeds, applying a sufficient amount of lime and fertilizer, and seeding drought-tolerant species improve the quality and increase the quantity of pasture plants.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installation of drains around footings and sealing foundations and basement walls, help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and poor filtering capacity are limitations if this soil is used as a site for septic tank absorption fields, particularly in the spring. Care is needed to prevent the contamination of the ground water resulting from the rapid permeability in the subsoil and substratum. Sloughing and the caving in of the unstable sandy material are limitations affecting excavations. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

The capability subclass is 2w.

42B—Elnora fine sandy loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is in undulating areas on lowland lake plains and in dissected areas on the side slopes of the major valleys. Individual areas are oblong or irregularly shaped, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown fine sandy loam

Subsoil:
7 to 16 inches, strong brown friable, loamy fine sand
16 to 27 inches, yellowish brown friable loamy fine sand, with strong brown iron accumulations

Substratum:
27 to 30 inches, brown loose fine sand, with yellowish brown iron accumulations, and 10 percent gravel
30 to 72 inches, grayish brown loose fine sand, with yellowish brown iron accumulations, and 2 percent gravel

Included in mapping are small areas of the somewhat poorly drained Minoa soils along drainageways and in slight depressions. Also included are spots of the well drained Colonie soils on small knolls and slightly higher positions on the landscape, and small areas of soils that have an increased content of clay, occurring in bands or thin layers, in the subsoil. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately rapid in the surface layer and rapid in the subsoil and substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid to slightly acid in the surface layer and subsoil, and strongly acid to neutral in the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops grown in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops and to early season vegetables. It is limited by droughtiness in mid-summer and by low natural fertility. This stone-free soil generally can be easily tilled. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth, and increase the content of organic matter. Increasing the content of organic matter improves the available water capacity of the soil. Crops respond well to sufficient applications of lime and fertilizer.

This soil is moderately well suited to hay and pasture. The sandy texture, and potential for droughtiness in mid-summer are the main management concerns. Plant growth commonly is limited during mid-summer, and overgrazing at this time can deplete the stand of pasture grasses. Using proper stocking rates, rotating livestock grazing, deferring grazing as needed, controlling brush and weeds, applying a sufficient amount of lime and fertilizer, and seeding drought-tolerant species improve the quality and increase the quantity of pasture plants.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight, and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and poor filtering capacity are limitations if this soil is used as a site for septic tank absorption fields, particularly in early spring. Care is needed to prevent the contamination of the ground water resulting from the rapid permeability in the subsoil and substratum. Sloughing and the caving in of the unstable sandy material are limitations affecting excavations. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness. Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

43—Canandaigua silt loam

This soil is very deep, nearly level, and poorly drained. It is mainly in low areas in the major valleys, and to a lesser extent, in depressions on former lake plains. Individual areas are oblong. They generally range from 10 to 50 acres in size, but some are as large as 100 acres or more. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark gray silt loam

Subsoil:
9 to 18 inches, gray friable silty clay loam, with strong brown and yellowish brown iron accumulations
18 to 32 inches, gray friable silty clay loam, with yellowish brown iron accumulations and gray iron depletions

Substratum:
32 to 44 inches, gray friable silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions
44 to 72 inches, yellowish brown, grayish brown, and gray friable silt loam

Included in mapping are small areas of the somewhat poorly drained Niagara soils in the slightly higher positions on the landscape; the poorly drained Lamson soils which have more sand in the subsoil than the Canandaigua soil; the poorly drained Canadice soils which have more clay in the subsoil than the Canandaigua soil; and the very poorly drained Canandaigua soils that have a mucky surface layer, and are in small depressions. Also included are the poorly drained Getzville soils which are underlain with sand and gravel. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Moderately acid to slightly alkaline in the surface layer and subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At the surface or to a depth of 0.5 feet
from September through June
Flooding hazard: None
Depth to bedrock: More than 6 feet
Ponding hazard: As much as 0.5 feet above the surface from October through May

Most of the acreage is idle land that supports water-tolerant grasses, brush, and trees. Cleared areas are used for low-quality hay or pasture. This soil meets the requirements for hydric soils.

Unless drained, this soil is poorly suited to cultivated crops. If drained, this soil is suited to most of the crops commonly grown in the county, except for early and late season crops. Good tilth can be maintained fairly easily. The soil is subject to puddling and compaction if it is tilled when wet. Growing cover crops, incorporating crop residue into the soil, tilling only when the soil is at the proper moisture content, and rotating crops helps to maintain tilth and increase the content of organic matter.

This soil is marginally suited to water-tolerant hay and to late-spring pasture. It should not be used as pasture early in spring because compaction can damage desirable plants and result in ponding. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for red maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate. Tree species that can withstand the seasonal wetness grow best.

Depth to saturated zone and ponding are the main management concerns if this soil is used as a site for dwellings with basements. Building on raised fill material and installing a drainage system reduce the wetness. The soil is generally too wet for the construction of dwellings with basements without major modifications. Included areas of the somewhat poorly drained Niagara soils may be better suited. Depth to saturated zone and ponding are the main management concerns on sites for local roads and streets. Frost action is also a limitation for this use. Building on raised fill material and installing a drainage system reduce the wetness and the potential for frost action.

Ponding, depth to saturated zone, and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

44—Canandaigua mucky silt loam

This soil is very deep, nearly level, and very poorly drained. It is mainly in low areas in the major valleys, and to a lesser extent, in depressions on former lake plains. Individual areas are oblong or irregularly shaped. They commonly range from 10 to 75 acres in size. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark gray mucky silt loam

Subsoil:
9 to 22 inches, gray friable silty clay loam, with strong brown and yellowish brown iron accumulations
22 to 32 inches, gray friable silty clay loam, with yellowish brown iron accumulations and gray iron depletions

Substratum:
32 to 44 inches, gray friable silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions
44 to 72 inches, yellowish brown, grayish brown, and gray friable silt loam

Included in mapping are small areas of Alden soils, which have rock fragments in the lower part of the subsoil and in the substratum, and a few small pockets of Palms muck which have over 16 inches of muck. Also included are the poorly drained

Getzville soils which are underlain with sand and gravel. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Moderately acid to slightly alkaline in the surface layer and subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At or above the surface throughout the year
Flooding hazard: None
Depth to bedrock: More than 6 feet
Ponding hazard: As much as 1.0 feet above the surface from October through May, and as much as 0.5 feet above the surface from June through September

Most of the acreage is idle land that supports water-tolerant shrubs and trees. Some areas used for pasture. This soil meets the requirements for hydric soils.

This soil is generally unsuited to cultivated crops, hay, or pasture due to the water table being at or above the surface throughout most of the year.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails is slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

Depth to saturated zone and ponding are the main management concerns on sites for dwellings with basements. The soil is too wet for the construction of dwellings with basements without major modifications.

Depth to saturated zone and ponding are the main management concerns on sites for local roads and streets. Frost action is also a limitation for this use. Building on raised fill material and installing a drainage system reduce the wetness and the potential for frost action.

Ponding, depth to saturated zone and the restricted permeability in the subsoil and substratum are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. The soil is too wet for use as a site for septic tank absorption fields. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 5w.

45—Canandaigua silt loam, acid substratum

This soil is very deep, nearly level, and poorly drained. It is mainly in low areas in the major valleys, and to a lesser extent, in depressions on former lake plains in the southern parts of the county. Individual areas are oblong. They generally range from 10 to 50 acres in size. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark gray silt loam

Subsoil:
8 to 21 inches, gray friable silty clay loam, with strong brown and yellowish brown iron accumulations

21 to 32 inches, gray friable silty clay loam, with yellowish brown iron accumulations and gray iron depletions

Substratum:
32 to 44 inches, gray friable silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions
44 to 72 inches, yellowish brown, grayish brown, and gray friable silt loam

Included in mapping are small areas of the somewhat poorly drained Niagara soils in the slightly higher positions on the landscape; the poorly drained Lamson soils which have more sand in the subsoil than the Canandaigua soil; the poorly drained Canadice soils which have more clay in the subsoil than the Canandaigua soil; and the very poorly drained Canandaigua soils that have a mucky surface layer, and are in slightly lower landscape positions. Also included are the poorly drained Getzville soils which are underlain with sand and gravel. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Moderately acid to slightly alkaline in the surface layer and subsoil, and moderately acid to neutral in the substratum
Water table: At the surface or to a depth of 0.5 feet
from September through June
Flooding hazard: None
Depth to bedrock: More than 6 feet
Ponding hazard: As much as 0.5 feet above the surface from October through May

Most of the acreage is idle land that supports water-tolerant grasses, brush, and trees. Cleared areas are used for low-quality hay or pasture. This soil meets the requirements for hydric soils.

Unless drained, this soil is poorly suited to cultivated crops. If drained, this soil is suited to most of the crops commonly grown in the county, except for early and late season crops. The soil is subject to puddling and compaction if it is tilled when wet. Good tilth can be maintained fairly easily. Growing cover crops, incorporating crop residue into the soil, tilling only when the soil is at the proper moisture content, and rotating crops helps to maintain tilth.

This soil is marginally suited to water-tolerant hay and to late-spring pasture. It should not be used as pasture early in spring because compaction can damage desirable plants and result in ponding. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually and restricting grazing when the soil is wet are the main management concerns. Improving drainage increases forage production.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

Depth to saturated zone and ponding are the main management concerns if this soil is used as a site for dwellings with basements. The soil is too wet for the construction of dwellings with basements without major modifications. Included areas of the somewhat poorly drained Niagara soils may be better sites.

Depth to saturated zone and ponding are the main management concerns if this soil is used as a site local roads and streets. Frost action is also a limitation for this use. Building on raised fill material and installing a drainage system reduce the wetness and the potential for frost action.

Ponding, depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

46—Swormville silt loam

This soil is nearly level, very deep, and somewhat poorly drained. It is mainly on broad flats in the larger valleys, but is also in low areas on former lake plains. Individual areas are oblong. They range mainly from 20 to 50 acres in size, but some are as large as 100 acres or more. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, very dark grayish brown silt loam with 2 percent gravel

Subsoil:

8 to 19 inches, brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions and 2 percent gravel

19 to 31 inches, brown slightly firm silt loam, with yellowish brown iron accumulations and gray iron depletions and 2 percent gravel

Substratum:

31 to 35 inches, grayish brown friable sandy loam, with strong brown and yellowish brown iron accumulations and 5 percent gravel

35 to 52 inches, grayish brown very friable loamy sand, with yellowish brown iron accumulations and gray iron depletions and 10 percent gravel

52 to 72 inches, grayish brown loose sand, with 10 percent gravel

Included in mapping are small areas of the poorly drained Getzville soils in slight depressions and along drainageways; Minoa and Lamson soils, which are sandy throughout; and moderately well drained Olean soils in the slightly higher positions on the landscape. Also included in slightly higher positions are the Tonawanda soils which are silty throughout the profile. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow in the surface layer, slow or moderately slow in the subsoil, and moderately rapid in the substratum

Available water capacity: Moderate to high

Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil and slightly acid to slightly alkaline in the substratum

Water table: At a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is used for row crops grown in support of dairy farming. Some of the acreage is used for vegetables. The rest is idle land or woodland. Where drained, this soil meets the requirements for prime farmland (fig. 7).

This soil is moderately well suited to cultivated crops and vegetables. The seasonal high water table may delay planting and can make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to most of the crops

Figure 7.—Improved pasture in an area of Swormville silt loam. Where drained, this soil is considered prime farmland.

commonly grown in the county. In most areas where outlets are available, drainage can be improved by a combination of open ditches and subsurface drains. Because of the moderately rapid permeability in the sandy substratum, tile drains do not have to be closely spaced. The soil is subject to puddling and compaction if it is tilled when wet. Growing cover crops, minimizing tillage, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter, and minimize surface crusting and clodding.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages the pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation on sites for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems, help to overcome these limitations.

The depth to saturated zone and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields, particularly in early spring. Care is needed to prevent the contamination of ground water resulting from seepage. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness. Sloughing and caving in of the unstable silty material are limitations affecting excavations.

The capability subclass is 3w.

47A—Minoa very fine sandy loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on broad flats on former lake plains and on lowlands in the larger valleys. Individual areas are oblong or irregularly shaped, and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown very fine sandy loam with less than 2 percent gravels

Subsoil:

9 to 20 inches, brown friable fine sandy loam, with strong brown iron accumulations and grayish brown iron depletions, and less than 2 percent gravel

20 to 32 inches, yellowish brown very friable fine sandy loam, with strong brown iron accumulations and grayish brown iron depletions, and less than 2 percent gravel

32 to 36 inches, grayish brown loose sandy loam, with yellowish brown iron accumulations, and less than 2 percent gravel

Substratum:

36 to 72 inches, grayish brown loose stratified fine sandy loam and fine sand, with less than 2 percent gravel

Included in mapping are small areas of the poorly drained Lamson soils in slight depressions and along drainageways, and small areas of the moderately well drained Elnora soils on small knolls or slightly higher positions on the landscape. Also included are small areas of Tonawanda soils which are silty throughout the profile, and soils that are similar to the Minoa soil that have a surface layer of silt loam. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderate or moderately rapid in the substratum

Available water capacity: Moderate to high

Soil reaction: Strongly acid to neutral in the surface layer, from moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum

Water table: At a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for row crops grown in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops commonly grown in the county. The seasonal high water table may delay planting and make harvesting difficult, especially in low lying areas. If a drainage system is installed, the soil is suited to most of the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where outlets are available. Because of the sandy substratum, drains do not have to be closely spaced. Generally, this relatively stone free soil can be easily tilled, but tilth and soil structure deteriorate if the soil is plowed when wet. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth and increase the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages the pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling brush and weeds, and restricting grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for red maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone is a limitation if this soil is used as a site for septic tank absorption fields, particularly in early spring. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness. Sloughing and the caving of the unstable sandy material are limitations affecting excavation.

The capability subclass is 3w.

48A—Colonie fine sandy loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and well drained. It is in undulating areas in the major valleys and along valley sides. Individual areas are oblong or irregularly shaped, and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown fine sandy loam

Subsoil:
9 to 16 inches, strong brown very friable loamy fine sand
16 to 32 inches, brown very friable loamy fine sand
32 to 47 inches, dark yellowish brown very friable loamy fine sand, with thin bands of fine sandy loam

Substratum:
47 to 51 inches, brown loose loamy fine sand with 5 percent gravel
51 to 72 inches, brown loose fine sand

Included in mapping are small areas of the moderately well drained Elnora soils along drainageways, the somewhat poorly drained Minoa soils in slight depressions, and soils that have a surface layer of loamy fine sand or have a gravelly surface layer. Also included are small areas of Chenango soils which have more gravel in the profile than Colonie soils. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderately rapid in the surface layer and moderately rapid or rapid in the subsoil and substratum
Available water capacity: Low to moderate

Soil reaction: Very strongly acid to slightly acid in the surface layer and subsoil, moderately acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early-season vegetables. Crop growth is restricted by droughtiness in midsummer and by low natural fertility. This stone-free soil generally can be easily tilled. Wind erosion is a hazard where the plant cover has been removed. Minimizing tillage, growing cover crops, adding animal manure to the soil, incorporating crop residue, and including sod crops in the cropping system increase the content of organic matter and help to maintain tilth.

Because of a very low content of organic matter, droughtiness, and the sandy texture, this soil is only moderately well suited to hay and pasture. Some areas can be used for early season pasture, but plant growth commonly is limited during midsummer. Overgrazing in summer can deplete the stand of pasture grasses. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements and for local roads and streets.

Poor filtering capacity is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the subsoil and substratum. Because the soil is loose, the sides of excavations or cuts may tend to slough or slump.

The capability class is 2s.

48B—Colonie fine sandy loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is in undulating areas in the major valleys and along valley sides. Individual areas are oblong or irregularly shaped, and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown fine sandy loam

Subsoil:
9 to 16 inches, strong brown very friable loamy fine sand
16 to 32 inches, brown very friable loamy fine sand
32 to 47 inches, dark yellowish brown very friable loamy fine sand, with thin bands of fine sandy loam

Substratum:
47 to 51 inches, brown loose loamy fine sand with 5 percent gravel
51 to 72 inches, brown loose fine sand

Included in mapping are small areas of the moderately well drained Elnora soils along drainageways, the somewhat poorly drained Minoa soils in slight depressions, and soils that have a surface layer of loamy fine sand or have a gravelly surface layer. Also included are small areas of Chenango soils which have more gravel in the profile than Colonie soils. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderately rapid in the surface layer, and moderately rapid or rapid in the subsoil and substratum
Available water capacity: Low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer and subsoil, moderately acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. This soil meets the requirements for prime farmland.

This soil is well suited to cultivated crops and to early-season vegetables. However, Crop growth is restricted by droughtiness in midsummer and by low natural fertility. This stone-free soil generally can be easily tilled. Water erosion is a hazard on long slopes and where the soil is intensively cultivated. Wind erosion is a hazard where the plant cover has been removed. Minimizing tillage, growing cover crops, adding animal manure to the soil, incorporating crop residue, and including sod crops in the cropping system increase the content of organic matter and help to maintain tilth.

Because of a very low content of organic matter, droughtiness, and the sandy texture, this soil is only moderately well suited to hay and pasture. Some areas can be used for early season pasture, but plant growth commonly is limited during midsummer. Overgrazing in summer can deplete the stand of pasture grasses. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails are moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has few limitations as a site for dwellings with basements and for local roads and streets.

Poor filtering capacity is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the subsoil and substratum. Because the soil is loose, the sides of excavations or cuts may tend to slough or slump.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability class is 2s.

48C—Colonie fine sandy loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and well drained. It is on side slopes in dissected areas of the major valleys. Individual areas are oblong or irregularly shaped, and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown fine sandy loam

Subsoil:
9 to 16 inches, strong brown very friable loamy fine sand
16 to 32 inches, brown very friable loamy fine sand
32 to 47 inches, dark yellowish brown very friable loamy fine sand, with thin bands of fine sandy loam

Substratum:
47 to 51 inches, brown loose loamy fine sand with 5 percent gravel
51 to 72 inches, brown loose fine sand

Included in mapping are small areas of the moderately well drained Elnora soils along drainageways, the somewhat poorly drained Minoa soils in slight depressions, and soils that have a surface layer of loamy fine sand or have a gravelly surface layer. Also included are small areas of Chenango soils which have more gravel in the profile than Colonie soils. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderately rapid in the surface layer, and moderately rapid or rapid in the subsoil and substratum
Available water capacity: Low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer and subsoil, moderately acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas.

This soil is only moderately well suited to cultivated crops because of the slope, droughtiness in midsummer, and low natural fertility. Water erosion is a hazard particularly on long slopes and in intensively cultivated areas. Wind erosion is a hazard in areas where the plant cover has been removed. This stone-free soil generally can be easily tilled. Minimizing tillage, growing cover crops, adding animal manure to the soil, incorporating crop residue, and including sod crops in the cropping system increase the content of organic matter and help to maintain tilth. Farming on the contour and stripcropping help to control erosion and increase the supply of moisture in the soil.

Because of a very low content of organic matter, droughtiness, and the sandy texture, this soil is only moderately well suited to hay and pasture. Some areas can be used for early season pasture, and plant growth commonly is limited during midsummer. Overgrazing in summer can deplete the stand of pasture grasses and increase the hazard of erosion. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The slope is the main limitation if this soil is used as a site for dwellings with basements and for local roads and streets. Land grading and building on the contour help to overcome the slope limitation.

Poor filtering capacity is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from the rapid permeability in the subsoil and substratum. Because the soil is loose, the sides of excavations or cuts may tend to slough or slump.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

49A—Red Hook silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on low flats of outwash plains and older stream terraces. Individual areas are oblong or irregularly shaped and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown silt loam with 10 percent gravel

Subsoil:

9 to 21 inches, brown friable gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 20 percent gravel

21 to 32 inches, dark grayish brown friable gravelly sandy loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent gravel

Substratum:

32 to 72 inches, dark grayish brown loose very gravelly sandy loam, with 45 percent gravel

Included in mapping are small areas of the very poorly drained Halsey soils and poorly drained Lamson soils in slight depressions and along drainageways; small areas of the moderately well drained Castile soils on small knolls and in the slightly higher positions on the landscape. Lamson soils are sandy and lack the gravel associated with Red Hook soils. Also included are small areas of Red Hook soils that have a thin mantle of gravel-free silty material or that have a channery or gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, moderate or moderately rapid in the substratum

Available water capacity: Low to high

Soil reaction: Strongly acid to slightly acid in the surface layer, moderately acid to neutral in the subsoil, moderately acid to slightly alkaline in the substratum

Water table: At a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for row crops grown in support of dairy farming. Some of the acreage is idle land. Small woodlots are in some areas. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops commonly grown in the county. The seasonal high water table may delay planting and can make harvesting difficult, especially in low areas. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. A combination of open ditches and subsurface drains generally is effective in areas where outlets are available. Generally, this soil can be easily tilled, but tilth and soil structure deteriorate if the soil is plowed when wet. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain tilth and increase the content of organic matter.

The soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Overgrazing damages the pasture plants, and grazing when the soil is wet can result in surface compaction and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and restricted grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for red maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing drainage system in the area around the absorption fields and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

The capability subclass is 3w.

50A—Canaseraga silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and moderately well drained. It is in convex areas on hilltops that receive little or no runoff from the higher adjacent soils, and in flatter areas of toeslopes that receive runoff from the higher adjacent soils. Individual areas are oblong or circular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown silt loam

Subsoil:
5 to 9 inches, strong brown very friable silt loam
9 to 18 inches, yellowish brown friable silt loam
18 to 23 inches, brown friable silt loam, with brown iron accumulations
23 to 28 inches, brown firm silt loam, with strong brown iron accumulations and light brownish gray iron depletions and 5 percent gravels
28 to 53 inches, olive brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions and 20 percent gravels

Substratum:
53 to 72 inches, dark grayish brown firm channery silt loam, with dark yellowish brown iron accumulations and 25 percent gravels and channers

Included in mapping are small areas of the somewhat poorly drained Dalton soils in small depressions and along drainageways; Schuyler soils, which do not have a fragipan; Mardin soils which lack the silty mantle; and soils having a silty mantle that is less than 15 inches thick. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or very slow in the fragipan and substratum

Available water capacity: Low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and upper subsoil, strongly acid to neutral in the fragipan, moderately acid to moderately alkaline in the substratum
Water table: Perched at a depth of 1.2 to 1.9 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops, hay, and pasture used in support of dairy operations. Some areas are used as woodland. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops grown in the county, but wetness may delay planting early in the spring. Random tile drains are needed in the wetter included soils so that the fields can be managed more uniformly. Measures that maintain tilth, increase the content of organic matter, and control erosion include minimum tillage, tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and growing cover crops. The plow layer commonly has no stones and can be easily tilled. Crops respond well to applications of lime and fertilizer.

This soil is suitable for hay and pasture. Overgrazing and grazing when the soil is wet may compact the surface layer and cause temporary ponding. Topdressing with lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is low. Planting seedlings in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwelling with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

The capability subclass is 2w.

50B—Canaseraga silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is in convex areas on hilltops that receive little or no runoff from the higher adjacent soils, and in flatter areas of toe slopes that receive runoff from the higher adjacent soils. Individual areas are oblong or circular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown silt loam

Subsoil:
5 to 9 inches, strong brown very friable silt loam

9 to 18 inches, yellowish brown friable silt loam
18 to 23 inches, brown friable silt loam, with brown iron accumulations
23 to 28 inches, brown firm silt loam, with strong brown iron accumulations and light brownish gray iron depletions and 5 percent gravels
28 to 53 inches, olive brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions and 20 percent gravels

Substratum:
53 to 72 inches, dark grayish brown firm channery silt loam, with dark yellowish brown iron accumulations and 25 percent gravels and channers

Included in mapping are small areas of the somewhat poorly drained Dalton soils in small depressions and along drainageways; Schuyler soils, which do not have a fragipan; Mardin soils which lack the silty mantle; and soils having a silty mantle that is less than 15 inches thick. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or very slow in the fragipan and substratum
Available water capacity: Low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and upper subsoil, strongly acid to neutral in the fragipan, moderately acid to moderately alkaline in the substratum
Water table: Perched at a depth of 1.2 to 1.9 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops, hay, and pasture used in support of dairy operations. Some areas are used as woodland.

This soil is well suited to most of the crops grown in the county, but wetness may delay planting early in the spring. Erosion is a hazard on long slopes. Random tile drains are needed in the wetter included soils so that the fields can be managed more uniformly. Measures that maintain tilth, increase the content of organic matter, and control erosion include minimum tillage, tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and growing cover crops. The plow layer commonly has no stones and can be easily tilled. Farming on the contour and stripcropping help to control erosion on long slopes. Crops respond well to applications of lime and fertilizer.

This soil is suitable for hay and pasture. Overgrazing and grazing when the soil is wet, may compact the surface layer and cause temporary ponding. Topdressing with lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwelling with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

This soil is subject to erosion if the plant cover is removed during construction. Minimizing disturbance and revegetating the site as soon as possible can help to control erosion.

The capability subclass is 2e.

50C—Canaseraga silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is in areas on side slopes that receive runoff from the higher adjacent soils. Individual areas are oblong or circular, and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark brown silt loam

Subsoil:
5 to 9 inches, strong brown very friable silt loam
9 to 18 inches, yellowish brown friable silt loam
18 to 23 inches, brown friable silt loam, with brown iron accumulations
23 to 28 inches, brown firm silt loam, with strong brown iron accumulations and light brownish gray iron depletions and 5 percent gravels
28 to 53 inches, olive brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions and 20 percent gravels

Substratum:
53 to 72 inches, dark grayish brown firm channery silt loam, with dark yellowish brown iron accumulations and 25 percent gravels and channers

Included in mapping are small areas of the somewhat poorly drained Dalton soils in small depressions and along drainageways; Schuyler soils, which do not have a fragipan; Mardin soils which lack the silty mantle; and soils having a silty mantle that is less than 15 inches thick. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or very slow in the fragipan and substratum
Available water capacity: Low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and upper subsoil, strongly acid to neutral in the fragipan, moderately acid to moderately alkaline in the substratum
Water table: Perched at a depth of 1.2 to 1.9 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or idle land. Some areas have been cleared and are used for row crops, hay, or pasture. The row crops are grown in support of dairy farming.

This soil is moderately well suited to most of the crops grown in the county. Wetness may delay planting early in spring and can interfere with harvesting. Careful management is needed to control erosion and maintain fertility. A drainage system is needed on the wetter included soils so that the fields can be managed more uniformly. Contour farming and contour stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. The plow layer commonly has few stones and can be easily tilled. Incorporating crop residue into the soil, rotating crops, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter.

This soil is well suited for hay and pasture. Overgrazing and surface compaction are the main management concerns. Compaction seals the surface and thus increases the runoff rate and the hazard of erosion. Overgrazing results in increased erosion. Forage plants, including deep-rooted legumes, can be grown if lime and fertilizer are applied. Other suitable pasture management practices include using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Also, installing interceptor drains and diversion ditches in upslope areas divert surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Frost action, depth to saturated zone and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

51B—Chadakoin channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is in convex areas on hilltops that receive little or no runoff from higher adjacent soils. Individual areas are oblong and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
4 to 9 inches, brown very friable channery silt loam with 15 percent channers

Subsoil:
9 to 27 inches, brown very friable channery silt loam, with 15 percent channers
27 to 33 inches, dark yellowish brown friable channery silt loam, with strong brown iron accumulations and 20 percent channers

Substratum:
33 to 54 inches, brown friable channery loam, with 25 percent channers
54 to 72 inches, grayish brown friable very channery loam, with 40 percent channers

Included in mapping are small areas of the moderately well drained Chautauqua soils; the moderately well drained Schuyler soils, which have more clay in the subsoil than the Chadakoin soil; Valois soils, which have more gravel in the substratum; and Towerville soils which have bedrock within 40 inches. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow or moderate in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of 2.0 to 6.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Small woodlots are in some areas, and some of the acreage is idle land that is reverting to shrubs and brush. This soil meets the requirements for prime farmland.

This soil is well suited to all of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Erosion is a hazard if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The depth to saturated zone and the restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Minimal engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material, help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

51C—Chadakoin channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and well drained. It is in convex areas on hilltops that receive runoff from higher adjacent soils. Individual areas are oblong or rectangular and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
4 to 9 inches, brown very friable channery silt loam with 15 percent channers

Subsoil:
9 to 27 inches, brown very friable channery silt loam, with 15 percent channers
27 to 33 inches, dark yellowish brown friable channery silt loam, with strong brown iron accumulations and 20 percent channers

Substratum:
33 to 54 inches, brown friable channery loam, with 25 percent channers
54 to 72 inches, grayish brown friable very channery loam, with 40 percent channers

Included in mapping are small areas of the moderately well drained Chautauqua soils; the moderately well drained Schuyler soils, which have more clay in the subsoil than the Chadakoin soil; Valois soils, which have more gravel in the substratum; and Towerville soils which have bedrock within 40 inches. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow or moderate in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of 2.0 to 6.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to shrubs and brush. Some areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming.

This soil moderately well suited to most of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. Erosion is a serious hazard in intensively cultivated areas. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. Incorporating crop residue into the soil, minimizing tillage, including sod crops in the crop rotation, and growing cover crops help to maintain tilth and increase the content of organic matter. Installing drainage in the wetter included areas helps to make management of the fields more efficient. Crops respond well to applications of fertilizer. Legumes respond especially well. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Frost action and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Minimal engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system upslope from the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

51D—Chadakoin channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
4 to 9 inches, brown very friable channery silt loam with 15 percent channers

Subsoil:
9 to 27 inches, brown very friable channery silt loam, with 15 percent channers
27 to 33 inches, dark yellowish brown friable channery silt loam, with strong brown iron accumulations and 20 percent channers

Substratum:
33 to 54 inches, brown friable channery loam, with 25 percent channers
54 to 72 inches, grayish brown friable very channery loam, with 40 percent channers

Included in mapping are small areas of the moderately well drained Chautauqua soils; the moderately well drained Schuyler soils, which have more clay in the subsoil than the Chadakoin soil; Valois soils, which have more gravel in the substratum; and

Towerville soils which have bedrock within 40 inches. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow or moderate in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush and shrub. Some areas are used for hay or pasture. A small acreage is used for row crops.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the slope. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness restricts crop growth.

This soil is moderately well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

Slope is the main limitation if this soil is used as a site for dwellings with basements. Extensive land modification and grading may be needed to overcome the slope.

Slope is the main limitation if this soil is used as a site for local roads and streets. Extensive land modification and grading may be needed to overcome the slope. Frost action is an additional limitation on sites for local roads and streets. Installing roadside drainage systems helps to overcome this limitation.

The slope and restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption fields and adding permeable fill material help to overcome the restricted permeability.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

51E—Chadakoin channery silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and well drained. It is on the side slopes of hills and on valley walls. It is in areas that receive runoff from the higher adjacent soils. Individual areas are oblong or occur as narrow strips on the side slopes. They range from 10 to several hundred acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
4 to 9 inches, brown very friable channery silt loam with 15 percent channers

Subsoil:
9 to 27 inches, brown very friable channery silt loam, with 15 percent channers
27 to 33 inches, dark yellowish brown friable channery silt loam, with strong brown iron accumulations and 20 percent channers

Substratum:
33 to 54 inches, brown friable channery loam, with 25 percent channers
54 to 72 inches, grayish brown friable very channery loam, with 40 percent channers

Included in mapping are small areas of the moderately well drained Schuyler soils which have more clay in the subsoil than the Chadakoin soil; Towerville soils which have bedrock within a depth of 40 inches; and Valois soils which have more gravel in the substratum. Also included are narrow bands of Udifluvents on the flood plains along the streams that dissect the unit. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow or moderate in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide habitat for wildlife. Some of the acreage is idle land or is used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The suitability of this soil for pasture is limited. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land shaping and grading help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

The slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the potential for frost action.

The slope and the restricted permeability in the substratum are the main limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

51F—Chadakoin channery silt loam, 35 to 50 percent slopes

This soil is very steep, very deep, and well drained. It is on hillsides and valley sides that receive runoff from the higher adjacent soils. Many areas on the valley sides are deeply dissected by v-shaped gullies. Individual areas are elongated or occur as narrow strips on the side slopes. They commonly are 20 to 75 acres in size but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
4 to 9 inches, brown very friable channery silt loam with 15 percent channers

Subsoil:
9 to 27 inches, brown very friable channery silt loam, with 15 percent channers
27 to 33 inches, dark yellowish brown friable channery silt loam, with strong brown iron accumulations and 20 percent channers

Substratum:
33 to 54 inches, brown friable channery loam, with 25 percent channers
54 to 72 inches, grayish brown friable very channery loam, with 40 percent channers

Included in mapping are small areas of the moderately well drained Schuyler soils which have more clay in the subsoil than the Chadakoin soil; Towerville soils which have bedrock within a depth of 40 inches; and Valois soils which have more gravel in the substratum. Also included are narrow bands of Udifluvents on the flood plains along the streams that dissect the unit. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow or moderate in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly acid in the substratum
Water table: At a depth of more than 6 feet

Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used as woodland. A small acreage is idle land.

This soil is not suited to cultivated crops, hay or pasture. The slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope severely limits construction. It is the main limitation if this soil is used as a site for local roads and streets, dwellings with basements, and septic tank absorption fields. Erosion is a very severe hazard on construction sites. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

52B—Valois gravelly silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is on reglaciated moraines on the lower sides of the major valleys. Individual areas are oblong or irregularly shaped. They commonly range from 10 to 75 acres in size, but some areas are as large as 200 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown gravelly silt loam with 20 percent gravels

Subsoil:
6 to 17 inches, strong brown very friable gravelly silt loam, with 20 percent gravel
17 to 27 inches, yellowish brown very friable gravelly silt loam, with 15 percent gravel
27 to 48 inches, yellowish brown loose gravelly loam, with 20 percent gravel

Substratum:
48 to 72 inches, brown friable very gravelly sandy loam, with 35 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along drainageways. Also included are the moderately well drained Chautauqua and Mardin soils in areas where the Valois soil adjoins glacial till; Chenango soils in areas where the Valois soil adjoins gravelly outwash; and nearly level Valois soils, and soils that have a channery surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, moderate or moderately rapid in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil, and very strongly acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used for crops, alfalfa, hay or pasture. The crops are grown in support of dairy farming. Woodlots are in some areas, and some of the acreage is idle land that is reverting to brush. This soil meets the requirements for prime farmland.

This soil is well suited to all of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted legumes grow especially well. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Gravel and occasional channery fragments in the surface layer may interfere with the cultivation of some crops and can increase the wear on machinery. Erosion is a hazard in intensively cultivated areas. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season. Incorporating crop residue into the soil, minimizing tillage, growing cover crops, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter, and control erosion. In some years, droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

This soil has no major limitations as a site for dwellings with basements.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action.

The restricted permeability in the subsoil is a limitation if this soil is used as a site for septic tank absorption fields. Minimal engineering and design modifications are needed if onsite waste disposal systems are installed.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability subclass is 2e.

52C—Valois gravelly silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and well drained. It is on reglaciated moraines on the lower sides of valleys. Individual areas are oblong, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
6 to 17 inches, strong brown very friable gravelly silt loam, with 20 percent gravel
17 to 27 inches, yellowish brown very friable gravelly silt loam, with 15 percent gravel
27 to 48 inches, yellowish brown friable gravelly loam, with 20 percent gravel

Substratum:
48 to 72 inches, brown loose very gravelly sandy loam, with 35 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along drainageways. Also included are the moderately well drained Chautauqua and Mardin soils in areas where the Valois soil adjoins glacial till; Chenango soils in areas where the Valois soil adjoins gravelly outwash; and soils that have a channery surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, moderate or moderately rapid in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil, and very strongly acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used for crops, alfalfa, hay or pasture. The crops are grown in support of dairy farming. Woodlots are in some areas, and some of the acreage is idle land that is reverting to brush.

This soil is moderately well suited to all of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted legumes grow especially well. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Gravel and occasional channery fragments in the surface layer interfere with the cultivation of some crops and can increase the wear on machinery. Erosion is a hazard in intensively cultivated areas. Contour farming and stripcropping, in combination with diversion or grassed waterways, help to control erosion. Incorporating crop residue into the soil, minimizing tillage, growing cover crops, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter, minimize erosion, and conserve moisture.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help overcome this limitation.

Frost action and the slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems and backfilling with coarse textured subgrade or base material reduce the potential for frost action.

The restricted permeability in the subsoil is a limitation if this soil is used as a site for septic tank absorption fields. Minimal engineering and design modifications are needed if onsite waste disposal systems are installed.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability subclass is 3e.

52D—Valois gravelly silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on hilly reglaciated moraines on the lower sides of valleys. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
6 to 17 inches, strong brown very friable gravelly silt loam, with 20 percent gravel
17 to 27 inches, yellowish brown very friable gravelly silt loam, with 15 percent gravel
27 to 48 inches, yellowish brown friable gravelly loam, with 20 percent gravel

Substratum:
48 to 72 inches, brown loose very gravelly sandy loam, with 35 percent gravel

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along drainageways. Also included are the well drained Chadakoin and moderately well drained Mardin soils in areas where the Valois soils adjoin glacial till; Chenango soils in areas where the Valois soils adjoin gravelly outwash; and soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, moderate or moderately rapid in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil, and very strongly acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush. Some areas are used for hay or pasture. A few areas are used for row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The slope limits the use of farm equipment. Gravel on the surface may interfere with tillage and cause excessive wear on machinery. If cultivated, a maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than other crops.

This soil is moderately well suited to hay and pasture than to cultivated crops. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and building on the contour help to overcome the slope limitation.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems and backfilling with coarse textured subgrade or base material reduce the potential for frost action.

The slope and the restricted permeability in the subsoil are limitations if this soil is used as a site for septic tank absorption fields. Land grading and shaping help overcome the slope limitation.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

This soil is a potential source of sand and gravel.

The capability subclass is 4e.

52E—Valois gravelly silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and well drained. It is on reglaciated moraines on the sides of valleys. Many areas are deeply dissected by V-shaped gullies. Individual areas are elongated or occur as narrow strips on the valley sides. The areas range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
6 to 17 inches, strong brown very friable gravelly silt loam, with 20 percent gravel
17 to 27 inches, yellowish brown very friable gravelly silt loam, with 15 percent gravel
27 to 48 inches, yellowish brown friable gravelly loam, with 20 percent gravel

Substratum:
48 to 72 inches, brown loose very gravelly sandy loam, with 35 percent gravel

Included in mapping are small areas of the moderately well drained Castile and Chautauqua soils along drainageways and in seepage spots. Also included are the Chadakoin soils in areas where the Valois soil adjoins glacial till; Chenango soils in areas where the Valois soil adjoins gravelly outwash; and narrow bands of Udifluvents on the floodplains along the streams that dissect the unit. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, moderate or moderately rapid in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil, and very strongly acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide wildlife habitat. Some of the less sloping areas are idle or are used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The less sloping areas of this soil can be used as pasture on a limited basis. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Extensive land grading and shaping may be necessary. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems and backfilling with coarse textured subgrade or base material reduce the potential for frost action.

The slope and the restricted permeability in the subsoil are limitations if this soil is used as a site for septic tank absorption fields. Land grading and shaping help overcome the slope limitation.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

52F—Valois gravelly silt loam, 35 to 50 percent slopes

This soil is very steep, very deep, and well drained. It is on reglaciated moraines on the sides of valleys. Many areas are deeply dissected by V-shaped gullies. Individual areas are elongated or occur as narrow strips on the valley sides. The areas range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
6 to 17 inches, strong brown very friable gravelly silt loam, with 20 percent gravel
17 to 27 inches, yellowish brown very friable gravelly silt loam, with 15 percent gravel
27 to 48 inches, yellowish brown friable gravelly loam, with 20 percent gravel

Substratum:
48 to 72 inches, brown loose very gravelly sandy loam, with 35 percent gravel

Included in mapping are small areas of the moderately well drained Castile and Chautauqua soils along drainageways and in seepage spots. Also included are the Chadakoin soils in areas where the Valois soil adjoins glacial till; Chenango soils in areas where the Valois soil adjoins gravelly outwash; and narrow bands of Udifluvents and Fluvaquents on the flood plains along the streams that dissect the unit. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, moderate or moderately rapid in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil, and very strongly acid to neutral in the substratum

Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. It is limited by the slope and the very severe hazard of erosion. It is too steep for the safe operation of farm equipment. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

Construction is extremely difficult or impractical on this soil. The slope is the main limitation if this soil is used as a site for local roads and streets, dwellings with basements, and septic tank absorption fields. Erosion is a very serious hazard on construction sites. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

53C—Valois-Volusia-Mardin complex, 3 to 15 percent slopes

This unit consists of rolling, very deep, well drained Valois soils, somewhat poorly drained Volusia soils, and moderately well drained Mardin soils that formed in glacial till. It is on a series of ridges and knolls that slope in many directions. It is on dissected terraces, on long eskers, and in areas of kettle-kame deposits. This unit consists of about 30 percent Valois soils, 25 percent Volusia soils, 20 percent Mardin soils, and 25 percent other soils (fig. 8). The Valois-Volusia-Mardin complex soils are in such an intricate pattern that they were not able to be mapped separately. Individual areas are oblong or irregularly shaped, and range from 10 to 150 acres in size.

The typical sequence, depth, and composition of the layers of Valois soils are as follows—

Surface layer:
0 to 6 inches, dark grayish brown gravelly silt loam with 20 percent gravel

Subsoil:
6 to 17 inches, strong brown very friable gravelly silt loam, with 20 percent gravel
17 to 27 inches, yellowish brown very friable gravelly silt loam, with 15 percent gravel
27 to 48 inches, yellowish brown friable gravelly loam, with 20 percent gravel

Substratum:
48 to 72 inches, brown loose very gravelly sandy loam, with 35 percent gravel

The typical sequence, depth, and composition of the layers of Volusia soils are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
7 to 16 inches, light brownish gray friable channery loam, with yellowish brown iron accumulations, and 25 percent channers

Subsoil:
16 to 45 inches, brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Figure 8.—A typical area of Valois-Volusia-Mardin complex, 3 to 15 percent slopes. The better drained Valois soils occupy the higher and more sloping areas, while the Mardin soils and Volusia soils occupy the intermediate areas and wetter depressional areas, respectively.

Substratum:
45 to 68 inches, brown firm very channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 35 percent channers
68 to 72 inches, grayish brown firm very gravelly loam, with 45 percent gravel

The typical sequence, depth, and composition of the layers of Mardin soils are as follows—
Surface layer:
0 to 6 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with 10 percent channers
14 to 17 inches, light yellowish brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers
17 to 29 inches, olive brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers
29 to 41 inches, olive brown very firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
41 to 72 inches, grayish brown firm channery silt loam, with dark yellowish brown iron accumulations, and 20 percent channers

Included in mapping are small areas of the moderately well drained Castile soils in slight depressions and along drainageways, and the poorly drained Chippewa and Ashville soils in small potholes. Also included are the moderately well drained Chautauqua and Canaseraga soils in areas where this unit adjoins glacial till, and soils that have a silt loam surface layer. Included areas make up about 15 to 35 percent of this unit.

Soil properties of the Valois soils—

Permeability: Moderate in the surface layer and upper part of the subsoil, moderate or moderately rapid in the lower part of the subsoil and in the substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to moderately acid in the surface layer and subsoil, and very strongly acid to neutral in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Soil properties of the Volusia soils—

Permeability: Moderate in the surface and subsurface layer and slow or very slow in the fragipan layer and substratum
Available water capacity: Very low or low
Soil reaction: Very strongly acid to moderately acid in the surface layer, very strongly acid to slightly acid in the subsurface and upper subsoil, strongly acid to slightly acid in the fragipan, and from strongly acid to slightly alkaline in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Soil properties of the Mardin soils—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very Low or low
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.1 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used for crops, alfalfa, hay or pasture. The crops are grown in support of dairy farming. Woodlots are in some areas, and some of the acreage is idle land that is reverting to brush.

This soil is moderately well suited to all of the crops commonly grown in the county, but the complex topography makes intensive cropping impractical. The unit is better suited to long-term hay crops. Erosion is a hazard in intensively cultivated areas. Because of the rolling topography, farming on the contour, establishing diversions, and stripcropping are difficult. The crops that are planted early in spring and deep-rooted legumes grow especially well on the Valois portion of this unit. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Gravel and occasional channery fragments in the surface layer interfere with the cultivation of some crops and can increase the wear on machinery. Incorporating crop residue into the soil, minimizing tillage, growing cover crops, and including sod crops in the cropping system help to maintain tilth, increase the content of organic matter, minimize erosion, and conserve moisture. Installing drainage tile in the wet included areas helps to make management of the field more efficient, but may be difficult due to the complex topography of the unit.

The soil is well suited to hay and pasture. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate or moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality ranges from low in the Valois and Mardin parts of this unit to high in the Volusia part of this unit. The seasonal wetness increases the seedling mortality rate in the Volusia soils. Planting seedlings in spring, when the soil is moist, helps to ensure their survival in the Valois and Mardin soils. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome this limitation. In the wetter parts of this unit, depth to saturated zone is the main limitation on sites for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Also, installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and the slope are the main limitations if this soil is used as a site for local roads and streets. In the wetter parts of this unit, depth to saturated zone and frost action are the main limitations. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems and backfilling with coarse textured subgrade or base material reduce the potential for frost action and wetness.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields on the Mardin and Volusia parts of this unit. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability of these soils. Land grading and shaping, also help to overcome the slope.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

55A—Darien silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on flat benches and broad till plains. Individual areas are oblong in shape, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 5 percent gravel

Subsurface layer:
7 to 14 inches, pale olive friable silt loam, with olive brown iron accumulations and light brownish gray iron depletions, and 5 percent gravel

Subsoil:
14 to 23 inches, dark grayish brown firm silt loam, with light olive brown iron accumulations, and 10 percent gravel
23 to 38 inches, olive brown firm silty clay loam, with light brownish gray iron depletions, and 10 percent gravel

Substratum:
38 to 72 inches, grayish brown firm gravelly silt loam, with brown iron accumulations, and 15 percent gravel

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Erie soils which have a fragipan; Busti soils which have less clay in the subsoil; and Fremont soils which are more acid than the Darien soil. Also included are small areas of soils that have a gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsurface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer, subsurface and subsoil, and from slightly alkaline to moderately alkaline in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay, pasture or cultivated crops grown in support of dairy farming. Some of the acreage is woodland or idle land. Where drained, this soil meets the requirements of prime farmland.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is more difficult on this soil than on the more sloping adjacent Darien soils. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. Wetness can be reduced by closely spaced tile and open-ditch drainage systems. Maintaining good tilth is a management concern in intensively cultivated areas. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes compaction and damages the pasture. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

The capability subclass is 3w.

55B—Darien silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on hilltops, broad till plains, and valley toeslopes that receive runoff from the higher adjacent soils. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 5 percent gravel

Subsurface layer:
7 to 14 inches, pale olive friable silt loam, with olive brown iron accumulations and light brownish gray iron depletions, and 5 percent gravel

Subsoil:
14 to 23 inches, dark grayish brown firm silt loam, with light olive brown iron accumulations, and 10 percent gravel
23 to 38 inches, olive brown firm silty clay loam, with light brownish gray iron depletions, and 10 percent gravel

Substratum:
38 to 72 inches, grayish brown firm gravelly silt loam, with brown iron accumulations, and 15 percent gravel

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Erie soils which have a fragipan; Busti soils which have less clay in the subsoil; and Fremont soils which are more acid than the Darien soil. Also included are small areas of soils that have a gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsurface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer, subsurface and subsoil, and from slightly alkaline to moderately alkaline in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay, pasture or cultivated crops grown in support of dairy farming. Some of the acreage is woodland or idle land. Where drained, this soil meets the requirements of prime farmland.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content, help to maintain tilth and the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus increase the hazard of erosion. Using proper stocking rates, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

55C—Darien silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides and valley sides that receive runoff from the higher adjacent soils. Individual areas are oblong, and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 5 percent gravel

Subsurface layer:
7 to 14 inches, pale olive friable silt loam, with olive brown iron accumulations and light brownish gray iron depletions, and 5 percent gravel

Subsoil:
14 to 23 inches, dark grayish brown firm silt loam, with light olive brown iron accumulations, and 10 percent gravel
23 to 38 inches, olive brown firm silty clay loam, with light brownish gray iron depletions, and 10 percent gravel

Substratum:
38 to 72 inches, grayish brown firm gravelly silt loam, with brown iron accumulations, and 15 percent gravel

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Erie soils which have a fragipan; Busti soils which have less clay in the subsoil; and Fremont soils which are more acid than the Darien soil. Also included are small areas of soils that have a gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsurface layer, moderately slow in the subsoil, and slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer, subsurface and subsoil, and from slightly alkaline to moderately alkaline in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay, pasture or cultivated crops grown in support of dairy farming. Some of the acreage is woodland or idle land.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. Erosion is a hazard where cultivated crops are grown. If drained and protected from erosion, the soil is suited to most of the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content, help to maintain tilth and the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Overgrazing damages pasture and results in erosion. Grazing when the soil is wet causes surface compaction, restricts plant growth, depletes the stand of pasture grasses, and thus increases the hazard of erosion. Using proper stocking rates, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, and slope are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

56B—Chautauqua silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on convex hilltops and small knolls that receive little or no runoff from the higher adjacent soils. Individual areas are oblong or irregularly shaped. They commonly range from 5 to 50 acres, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silt loam with 10 percent gravel

Subsoil:
9 to 21 inches, yellowish brown friable silt loam, with 10 percent gravel
21 to 29 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and grayish brown iron depletions and 15 percent gravel
29 to 36 inches, brown firm gravelly loam, with yellowish brown iron accumulations and dark grayish brown iron depletions and 20 percent gravel

Substratum:
36 to 52 inches, brown firm gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 20 percent gravel
52 to 72 inches, grayish brown firm gravelly loam with 20 percent gravel

Included in mapping are small areas of the somewhat poorly drained Busti soils along drainageways and in wet spots; the well drained Chadakoin and Valois soils in the slightly higher positions on the landscape; the moderately well drained Langford soils which have a fragipan in the subsoil; and Chautauqua soils that have a gravelly surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Moderately acid or slightly acid in the surface layer, strongly acid to slightly acid in the subsoil and the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Some of the acreage is woodland or is idle land that is reverting to brush. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. The seasonal wetness delays planting for a short period in spring, but the soil can be easily worked after it has dried. Surface or tile drains commonly are needed so that fields can be farmed more uniformly. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Measures that maintain tilth, increase the content of organic matter, and control erosion include tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and growing cover crops. Minimizing tillage, farming on the contour, and stripcropping help to control erosion on long slopes. If wetter spots are adequately drained and field drainageways are provided, the soil is well suited to many crops, particularly corn, small grain, and hay.

This soil is well suited to pasture. Overgrazing is a major concern in managing pasture because it can damage the pasture plants. Grazing when the soil is wet in spring can result in compaction and can damage the pasture. Topdressing with lime and fertilizer, using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually, and deferring grazing when the soil is wet help to maintain high-quality pasture.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the substratum are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability. Sloughing and the caving-in of the unstable soil material are also limitations affecting excavations.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

56C—Chautauqua silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. Individual areas are rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silt loam with 10 percent gravel

Subsoil:
9 to 21 inches, yellowish brown friable silt loam, with 10 percent gravel
21 to 29 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and grayish brown iron depletions and 15 percent gravel
29 to 36 inches, brown firm gravelly loam, with yellowish brown iron accumulations and dark grayish brown iron depletions and 20 percent gravel

Substratum:
36 to 52 inches, brown firm gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 20 percent gravel
52 to 72 inches, grayish brown firm gravelly loam with 20 percent gravel

Included in mapping are small areas of the somewhat poorly drained Busti soils along drainageways and in seepage spots; the well drained Chadakoin soils in the slightly higher positions on the landscape; the moderately well drained Langford soils which have a fragipan in the subsoil; and the moderately well drained Schuyler soils which have more clay in the subsoil than the Chautauqua soil. Also included are Chautauqua soils that have a gravelly surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, moderately slow in the substratum
Available water capacity: Moderate to high
Soil reaction: Moderately acid or slightly acid in the surface layer, strongly acid to slightly acid in the subsoil and the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Some of the acreage is woodland or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. If wetter spots are adequately drained and field drainageways are provided, the soil can be used for many crops, particularly corn, small grain, and hay. The seasonal wetness delays planting for a short period in spring, but the soil can be easily worked after it has dried. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Erosion is a serious hazard on long slopes in intensively cultivated areas. Contour farming and stripcropping in combination with diversion or grassed waterways help to control erosion (fig. 9). Incorporating crop residue into the soil, rotating crops, minimizing tillage, and growing cover crops help to maintain tilth. Growing cover crops also helps control erosion, and increase the content of organic matter.

Figure 9.—Stripcropping helps to control erosion in this area of Chautauqua silt loam, 8 to 15 percent slopes.

This soil is well suited to pasture. Overgrazing is a major concern in managing pasture because it can damage the pasture plants and increase the hazard of erosion. Grazing when the soil is wet in spring can result in compaction and can damage the pasture. Topdressing with lime and fertilizer, using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually, and deferring grazing when the soil is wet help to maintain high-quality pasture.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and the slope are the main limitations on sites for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Also, installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping help overcome the slope limitation.

Frost action, depth to saturated zone, and the slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the wetness and the potential for frost action.

The depth to saturated zone and the restricted permeability in the substratum are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system upslope from the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability. Sloughing and the caving-in of the unstable soil material are also limitations affecting excavations.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

56D—Chautauqua silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on smooth hillsides and valley sides that receive runoff from the higher adjacent soils. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, dark grayish brown silt loam with 10 percent gravel

Subsoil:

9 to 21 inches, yellowish brown friable silt loam, with 10 percent gravel

21 to 29 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and grayish brown iron depletions and 15 percent gravel

29 to 36 inches, brown firm gravelly loam, with yellowish brown iron accumulations and dark grayish brown iron depletions and 20 percent gravel

Substratum:

36 to 52 inches, brown firm gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 20 percent gravel

52 to 72 inches, grayish brown firm gravelly loam with 20 percent gravel

Included in mapping are small areas of the somewhat poorly drained Busti soils along drainageways and in seepage spots; the well drained Chadakoin soils in the slightly higher positions on the landscape; the moderately well drained Langford soils which have a fragipan in the subsoil; and the moderately well drained Schuyler soils which have more clay in the subsoil than the Chautauqua soil. Also included are Chautauqua soils that have a gravelly surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Moderately acid or slightly acid in the surface layer, strongly acid to slightly acid in the subsoil and the substratum
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are used for hay or pasture. A small acreage is used for row crops.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the slope, which limits the use of farm machinery. Erosion is a hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, tilling on the contour, stripcropping, and frequently including grasses and legumes in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes can be grown, but applications of lime and fertilizer are required to maintain the quality of stands, and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Also, installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping help to overcome the slope limitation.

Slope, frost action and depth to saturated zone are the main limitations on sites for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Installing roadside drainage systems reduces the wetness and the potential for frost action.

The depth to saturated zone, the restricted permeability in the substratum, and the slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system upslope from the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability. Land grading and shaping help overcome this limitation.

Sloughing and the caving-in of the unstable soil material are also limitations affecting excavations.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

57A—Busti silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It occurs in uplands on benches and toeslopes and along the edges of drainageways in concave landscapes that receive runoff from the higher adjacent soils. Individual areas are circular or irregularly shaped and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam with 10 percent gravel

Subsurface layer:
8 to 13 inches, grayish brown friable loam, with yellowish brown iron accumulations and light brownish gray iron depletions and 10 percent gravel

Subsoil:
13 to 26 inches, brown friable gravelly loam, with strong brown iron accumulations and light brownish gray iron depletions and 20 percent gravel
26 to 35 inches, brown friable gravelly loam, with yellowish brown and reddish brown iron accumulations and grayish brown iron depletions and 25 percent gravel
35 to 39 inches, brown firm gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 25 percent gravel

Substratum:
39 to 72 inches, brown friable gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 25 percent gravel

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Erie soils which have more clay and a fragipan; and Fremont soils which have more clay in the subsoil than the Busti soil. Very deep, moderately well drained Chautauqua soils are included in more sloping and higher positions on the landscape. Also included are small areas of Orpark soils, which are 20 to 40 inches deep over bedrock, and small areas of Busti soils that have a channery or gravelly surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately slow or moderate in the surface and subsoil layers, and moderately slow or slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Moderately acid through neutral throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, hay, or pasture grown in support of dairy farming. Some of the acreage is woodland, or is idle land that is reverting to woodland. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is more difficult on this soil than on the more sloping adjacent Chautauqua soils. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. Wetness can be reduced in some areas by diverting runoff from the adjacent slopes and by installing tile and open-ditch drainage systems. Maintaining good tilth is a management concern in intensively cultivated areas. Minimizing tillage, incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management practices.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability. Sloughing and the caving-in of the unstable soil material are also limitations affecting excavations.

Erosion is a hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

57B—Busti silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is in convex areas on uplands, on side slopes, and in concave areas on foot slopes that receive runoff from the higher adjacent soils.Individual areas are irregularly shaped or rectangular. Most areas range from 10 to 75 acres in size, but some are as large as 100 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam with 10 percent gravel

Subsurface layer:
8 to 13 inches, grayish brown friable loam, with yellowish brown iron accumulations and light brownish gray iron depletions and 10 percent gravel

Subsoil:
13 to 26 inches, brown friable gravelly loam, with strong brown iron accumulations and light brownish gray iron depletions and 20 percent gravel
26 to 35 inches, brown friable gravelly loam, with yellowish brown and reddish brown iron accumulations and grayish brown iron depletions and 25 percent gravel
35 to 39 inches, brown firm gravelly loam, with yellowish brown iron accumulations andgrayish brown iron depletions and 25 percent gravel

Substratum:
39 to 72 inches, brown friable gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 25 percent gravel

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Erie soils which have more clay and a fragipan; and Fremont soils which have more clay in the subsoil than the Busti soil. Very deep, moderately well drained Chautauqua soils are included in more sloping and higher positions on the landscape. Also included are small areas of Orpark soils, which are 20 to 40 inches deep over bedrock, and small areas of Busti soils that have a channery or gravelly surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately slow or moderate in the surface and subsoil layers, and moderately slow or slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Moderately acid through neutral throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, hay, or pasture. Some of the acreage is woodland or is idle land that is reverting to woodland. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. Undrained areas are better suited to short-season crops and to hay and pasture. Wetness delays tillage in spring and may make harvesting difficult in fall. If drained and protected from erosion, the soil is suited to most of the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile drains and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability. Sloughing and the caving-in of the unstable soil material are also limitations affecting excavations.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

57C—Busti silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on side slopes and foot slopes that receive runoff from the higher adjacent soils. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam with 10 percent gravel

Subsurface layer:
8 to 13 inches, grayish brown friable loam, with yellowish brown iron accumulations and light brownish gray iron depletions and 10 percent gravel

Subsoil:
13 to 26 inches, brown friable gravelly loam, with strong brown iron accumulations and light brownish gray iron depletions and 20 percent gravel
26 to 35 inches, brown friable gravelly loam, with yellowish brown and reddish brown iron accumulations and grayish brown iron depletions and 25 percent gravel
35 to 39 inches, brown firm gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 25 percent gravel

Substratum:
39 to 72 inches, brown friable gravelly loam, with yellowish brown iron accumulations and grayish brown iron depletions and 25 percent gravel

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Erie soils which have more clay and a fragipan; and Fremont soils which have more clay in the subsoil than the Busti soil. Very deep, moderately well drained Chautauqua soils are included in more sloping and higher positions on the landscape. Also included are small areas of Orpark soils, which are 20 to 40 inches deep over bedrock, and small areas of Busti soils that have a channery or gravelly surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderately slow or moderate in the surface and subsoil layers, and moderately slow or slow in the substratum
Available water capacity: Moderate or high

Soil reaction: Moderately acid through neutral throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay, pasture, or cultivated crops grown in support of dairy farming. Some of the acreage is woodland, or is idle land that is reverting to woodland.

This soil is moderately well suited to farming. If drained and protected from erosion, this soil can be used for most of the crops commonly grown in the county. Undrained areas are better suited to short-season crops and to hay and pasture. Wetness delays planting in spring and may make harvesting difficult in fall. Interceptor drains can divert runoff and seepage from the higher adjacent soils. Tile can drain the wetter included soils and thus permit a more uniform use of fields. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Grazing when the soil is wet damages the pasture. If the plant cover is depleted as a result of overgrazing, the hazard of erosion is increased. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action and slope are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability. Sloughing and the caving-in of the unstable soil material are also limitations affecting excavations.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

58B—Rushford channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on valley toeslopes and elevated lake plains that receive runoff from the higher adjacent soils. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, brown channery silt loam, with 15 percent channers

Subsoil:
4 to 9 inches, yellowish brown very friable channery silt loam, with 15 percent channers
9 to 21 inches, yellowish brown very friable channery silt loam, with yellowish brown iron accumulations, and 20 percent channers
21 to 28 inches, pale brown very firm channery loam, with yellowish brown iron accumulations, and 25 percent channers
28 to 36 inches, yellowish brown firm silt loam

Substratum:
36 to 72 inches, olive brown firm silt loam, with varves of dark yellowish brown silty clay loam

Included in mapping are small areas of the somewhat poorly drained Wiscoy soils along drainageways and in seepage spots; Mardin and Langford soils where the lacustrine silts and clays are absent below 36 inches; Schuyler soils where the fragipan is lacking; and areas where the loamy mantle is thin or absent. Also included are small areas of Rushford soils that do not have channery fragments in the surface layer. Included areas make up about 10 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, very slow or slow in the fragipan, and moderately slow in the substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer, very strongly acid to moderately acid in the upper subsoil, and very strongly acid to slightly acid in the lower subsoil and substratum
Water table: Perched at a depth of 1.1 to 2.0 feet
from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage has been cleared and is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is well suited to most of the crops commonly grown in the county. The surface layer has many flat stone fragments that interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations on sites for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

58C—Rushford channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on lower hillsides and side slopes near elevated lake plains that receive runoff from the higher adjacent soils. Individual areas are rectangular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 4 inches, brown channery silt loam with 15 percent channers

Subsoil:

4 to 9 inches, yellowish brown very friable channery silt loam, with 15 percent channers

9 to 21 inches, yellowish brown very friable channery silt loam, with yellowish brown iron accumulations, and 20 percent channers

21 to 28 inches, brown very firm channery loam, with yellowish brown iron accumulations, and 25 percent channers

28 to 36 inches, yellowish brown firm silt loam

Substratum:

36 to 72 inches, olive brown firm silt loam, with varves of dark yellowish brown silty clay loam

Included in mapping are small areas of the somewhat poorly drained Wiscoy soils along drainageways and in seepage spots; Mardin and Langford soils where the lacustrine silts and clays are absent or below 36 inches; Schuyler soils where the fragipan is lacking; and areas where the loamy mantle is thin or absent. Also included are small areas of Rushford soils that do not have channery fragments in the surface layer. Included areas make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, very slow or slow in the fragipan and moderately slow in the substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to slightly acid in the surface layer, very strongly acid to moderately acid in the upper subsoil, and very strongly acid to slightly acid in the lower subsoil and substratum

Water table: Perched at a depth of 1.1 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage has been cleared and is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is moderately well suited to crops if erosion and runoff are controlled. The surface layer has many flat stone fragments which would interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is well suited to pasture. Overgrazing is the main concern in managing pasture because it can damage pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and severe erosion. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations on sites for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Frost action, depth to saturated zone and slope are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the limitations due to frost action and wetness.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e

59B—Yorkshire channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It occurs on convex hilltops and on side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, dark grayish brown channery silt loam with 20 percent channers

Subsoil:

8 to 13 inches, yellowish brown very friable channery silt loam, with 20 percent channers

13 to 17 inches, yellowish brown friable channery silt loam, with brown iron accumulations and grayish brown iron depletions, and 20 percent channers

17 to 19 inches, brown friable channery loam, with grayish brown iron depletions, and 15 percent channers

19 to 31 inches, olive brown firm channery silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 25 percent channers

31 to 56 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:

56 to 72 inches, olive brown firm channery silt loam, with yellowish brown iron accumulations and 30 percent channers

Included in mapping are small areas of the somewhat poorly drained Napoli soils along drainageways and in seepage spots; Salamanca soils which do not have a fragipan in the subsoil; Ischua soils which have bedrock within 40 inches; and Willdin soils which lack the clay accumulation in the subsoil. Also included are small areas of Yorkshire soils that do not have channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, and slow in the fragipan and substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to slightly acid in the surface layer, from very strongly acid to moderately acid in the upper subsoil, from very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum

Water table: Perched at a depth of 1.2 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage has been cleared and is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The surface layer has many flat stone fragments that interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

59C—Yorkshire channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It occurs on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are rectangular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown channery silt loam with 20 percent channers

Subsoil:
8 to 13 inches, yellowish brown very friable channery silt loam, with 20 percent channers
13 to 17 inches, yellowish brown friable channery silt loam, with brown iron accumulations and grayish brown iron depletions, and 20 percent channers
17 to 19 inches, brown friable channery loam, with grayish brown iron depletions, and 15 percent channers
19 to 31 inches, olive brown firm channery silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 25 percent channers
31 to 56 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:
56 to 72 inches, olive brown firm channery silt loam, with yellowish brown iron accumulations and 30 percent channers

Included in mapping are small areas of the somewhat poorly drained Napoli soils along drainageways and in seepage spots; Salamanca soils which do not have a fragipan in the subsoil; Ischua soils which have bedrock within 40 inches; and Willdin soils which lack the clay accumulation in the subsoil. Also included are small areas of Yorkshire soils that do not have channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, and slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer, from very strongly acid to moderately acid in the upper subsoil, from very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage has been cleared and is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is moderately well suited to row crops if erosion and runoff are controlled. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The surface layer has many flat stone fragments which would interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is well suited to pasture. Overgrazing is the main concern in managing pasture because it can damage pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture, and severe erosion. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Frost action, slope and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e

59D—Yorkshire channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It occurs on smooth hillsides and valley sides that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong and narrow, and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, dark grayish brown channery silt loam with 20 percent channers

Subsoil:

8 to 13 inches, yellowish brown very friable channery silt loam, with 20 percent channers

13 to 17 inches, yellowish brown friable channery silt loam, with brown iron accumulations and grayish brown iron depletions, and 20 percent channers

17 to 19 inches, brown friable channery loam, with grayish brown iron depletions, and 15 percent channers

19 to 31 inches, olive brown firm channery silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 25 percent channers

31 to 56 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:

56 to 72 inches, olive brown firm channery silt loam, with yellowish brown iron accumulations and 30 percent channers

Included in mapping are small areas of the somewhat poorly drained Napoli soils along drainageways and in seepage spots; Salamanca soils which do not have a fragipan in the subsoil; Ischua soils which have bedrock within 40 inches; and Willdin soils which lack the clay accumulation in the subsoil. Also included are small areas of Yorkshire soils that do not have channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, and slow in the fragipan and substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to slightly acid in the surface layer, from very strongly acid to moderately acid in the upper subsoil, from very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum

Water table: Perched at a depth of 1.2 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to brush and shrubs. Some areas are used for hay, pasture, or row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The slope limits the use of farm equipment. Tillage is slightly delayed in spring because of the wetness. Channery fragments on the surface interfere with tillage and cause excessive wear on machinery. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Applying a sufficient amount of lime and fertilizer is needed to maintain good crop growth.

This soil is generally better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Frost action, slope and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The slope, depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

60A—Napoli silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It occurs on flat hilltops that receive little or no runoff, and on upland benches that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are circular or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam with 10 percent channers

Subsoil:
9 to 15 inches, dark yellowish brown very friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
15 to 23 inches, grayish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
23 to 33 inches, dark yellowish brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers
33 to 46 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:
46 to 72 inches, grayish brown firm channery silty clay loam, with light olive brown and brown iron accumulations, and 30 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, and Almond soils which do not have a fragipan, and have more clay in the subsoil than the Napoli soil. Also included are small areas of Gretor soils which are 20 to 40 inches deep over bedrock, and small areas of Napoli soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and upper subsoil, and slow or moderately slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface, very strongly acid to moderately acid in the upper subsoil, very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, hay, or pasture. Some of the acreage is woodland, or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is more difficult on this soil than on the more sloping adjacent Napoli soils. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. The wetness can be reduced by closely spaced tile and open-ditch drainage systems. Maintaining good tilth is a management concern in intensively cultivated areas. Minimizing tillage, incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content, help to maintain tilth and the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability.

The capability subclass is 3w.

60B—Napoli silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It occurs on hilltops, side slopes and concave toeslopes on uplands that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown silt loam with 10 percent channers

Subsoil:

9 to 15 inches, dark yellowish brown very friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

15 to 23 inches, grayish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

23 to 33 inches, dark yellowish brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

33 to 46 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:

46 to 72 inches, grayish brown firm channery silty clay loam, with light olive brown and brown iron accumulations, and 30 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, and Almond soils which do not have a fragipan, and have more clay in the subsoil than the Napoli soil. Also included are small areas of Gretor soils, which are 20 to 40 inches deep over bedrock, and small areas of Napoli soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and upper subsoil and slow or moderately slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface, very strongly acid to moderately acid in the upper subsoil, very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, hay, or pasture. Some of the acreage is woodland, or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the fragipan. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

60C—Napoli silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It occurs on hillsides, valley sides and the side slopes of dissecting drainageways. It receives runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown silt loam with 10 percent channers

Subsoil:

9 to 15 inches, dark yellowish brown very friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

15 to 23 inches, grayish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

23 to 33 inches, dark yellowish brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

33 to 46 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:

46 to 72 inches, grayish brown firm channery silty clay loam, with light olive brown and brown iron accumulations, and 30 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, and Almond soils which do not have a fragipan, and have more clay in the subsoil than the Napoli soil. Also included are small areas of Gretor soils, which are 20 to 40 inches deep over bedrock, and small areas of Napoli soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and upper subsoil and slow or moderately slow in the fragipan and substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to slightly acid in the surface, very strongly acid to moderately acid in the upper subsoil, very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum

Water table: Perched at a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for hay and pasture. Some acreage is woodland, or is idle land that is reverting to woodland. A few areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to cultivated crops (fig. 10). The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, this soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, slope, and frost action are limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and

Figure 10.—Christmas tree plantation in an area of Napoli silt loam and Fremont silt loam, 8 to 15 percent slopes. The production of Christmas trees is an important industry in Cattaraugus County.

building on raised coarse textured fill material help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

60D—Napoli silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and somewhat poorly drained. It occurs on valley sides that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or long and narrow, and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam with 10 percent channers

Subsoil:
9 to 15 inches, dark yellowish brown very friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
15 to 23 inches, grayish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
23 to 33 inches, dark yellowish brown firm channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers
33 to 46 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:
46 to 72 inches, grayish brown firm channery silty clay loam, with light olive brown and brown iron accumulations, and 30 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, and Almond soils which do not have a fragipan, and have more clay in the subsoil than the Napoli soil. Also included are small areas of Gretor soils, which are 20 to 40 inches deep over bedrock, and small areas of Napoli soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and upper subsoil and slow or moderately slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface, very strongly acid to moderately acid in the upper subsoil, very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum

Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used as woodland. Some areas are used for hay, pasture, or row crops grown in support of dairy farming.

This soil is poorly suited to cultivated crops because of the hazard of erosion and the slope. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Because of the slope, operating farm machinery is difficult and hazardous on this soil.

This soil is better suited to hay and pasture than to cultivated crops. Overgrazing and grazing when the soil is wet restrict plant growth and can damage pasture plants. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns. Because the soil is naturally acid, applications of lime and fertilizer are needed to improve the growth of most pasture plants.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, slope, and frost action are limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations. Land grading and shaping help overcome the slope.

The slope, depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Land grading and shaping help overcome the slope limitation. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

61B—Schuyler silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is in convex areas on hilltops and upper side slopes that receive little runoff from the higher adjacent soils. Individual areas are oblong or circular, and range from 5 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:

6 to 13 inches, light yellowish brown friable silt loam, with 5 percent channers

13 to 23 inches, yellowish brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 10 percent channers

23 to 35 inches, light brownish gray firm channery silty clay loam, with strong brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Substratum:

35 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Fremont soils in slight depressions and along drainageways; Chautauqua soils which have less clay in the subsoil than the Schuyler soil; and Langford soils which have a fragipan in the subsoil. Also included are small areas of Towerville soils which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderate or moderately slow in the subsoil, and slow or moderately slow in the substratum

Available water capacity: Moderate or high

Soil reaction: Very strongly acid to moderately acid throughout the profile

Water table: At a depth of 1.5 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are wooded or are used for row crops grown in support of dairy farming. Some of the acreage is idle land that is reverting to brush. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. Tillage may be delayed by wetness in spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Sufficient applications of fertilizer and lime are needed for most crops, especially legumes. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the runoff rate. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

61C—Schuyler silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. Individual areas are rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
6 to 13 inches, light yellowish brown friable silt loam, with 5 percent channers
13 to 23 inches, yellowish brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 10 percent channers
23 to 35 inches, light brownish gray firm channery silty clay loam, with strong brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Substratum:
35 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Fremont soils in slight depressions and along drainageways; Chautauqua soils which have less clay in the subsoil than the Schuyler soil; and Langford soils which have a fragipan in the subsoil. Also included are small areas of Towerville soils which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderate or moderately slow in the subsoil, and slow or moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded or are used for row crops grown in support of dairy farming. Some of the acreage is idle land that is reverting to brush.

This soil is moderately well suited to most of the crops commonly grown in the county. Tillage is delayed by wetness in spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed for most crops, especially legumes. Crops respond well to sufficient application of fertilizer. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the runoff rate. Applying the recommended amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Frost action, slope, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

61D—Schuyler silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on smooth hillsides and valley sides that receive runoff from the higher adjacent soils. Individual areas are oblong or long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
6 to 13 inches, light yellowish brown friable silt loam, with 5 percent channers
13 to 23 inches, yellowish brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 10 percent channers
23 to 35 inches, light brownish gray firm channery silty clay loam, with strong brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Substratum:
35 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Fremont soils in slight depressions and along drainageways; Chautauqua soils which have less clay in the subsoil than the Schuyler soil; and Langford soils which have a fragipan in the subsoil. Also included are small areas of Towerville soils which have bedrock at a depth or 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderate or moderately slow in the subsoil, and slow or moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are used for hay and pasture. A small acreage is used for row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The slope limits the use of farm equipment. Tillage is slightly delayed by wetness in spring. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Applying the recommended amounts of lime and fertilizer is needed to maintain good crop growth.

This soil generally is better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Using proper stocking rates, rotating livestock grazing, applying a sufficient amount of lime and fertilizer, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping help to overcome the slope.

Slope, frost action, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the wetness and the potential for frost action.

The depth to saturated zone, slope, and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope.

Installing a subsurface drainage system upslope from the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

61E—Schuyler silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and moderately well drained. It is on hillsides and valley sides that receive runoff from the higher adjacent soils. Many areas along the valley are deeply dissected by V-shaped gullies. Individual areas are elongated or occur as narrow strips on the side slopes. They commonly are 20 to 75 acres in size, but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
6 to 13 inches, light yellowish brown friable silt loam, with 5 percent channers
13 to 23 inches, yellowish brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 10 percent channers
23 to 35 inches, light brownish gray firm channery silty clay loam, with strong brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Substratum:
35 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Fremont soils in slight depressions and along drainageways; Chadakoin soils which have less clay in the subsoil than the Schuyler soil; and Langford soils which have a fragipan in the subsoil. Also included are small areas of Towerville soils which have bedrock at a depth or 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderate or moderately slow in the subsoil, and slow or moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide wildlife habitat. Some of the less sloping areas are idle, or are used as pasture.

This soil is not suited to cultivated crops or hay because of the slope, and the very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The less sloping areas of this map unit can be used as pasture on limited basis. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope and depth to saturated zone are the main limitations if this soil is used as a site for dwellings with basements. Land grading and shaping may help to overcome the steep slope. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Slope, frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and the potential for frost action.

The slope, depth to saturated zone, and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

61F—Schuyler silt loam, 35 to 50 percent slopes

This soil is very steep, very deep, and moderately well drained. It is on hillsides and valley sides that receive runoff from the higher adjacent soils. Many areas along the valley are deeply dissected by V-shaped gullies. Individual areas are elongated or occur as narrow strips on the side slopes. They commonly are 20 to 75 acres in size, but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
6 to 13 inches, light yellowish brown friable silt loam, with 5 percent channers
13 to 23 inches, yellowish brown friable silt loam, with strong brown iron accumulations and grayish brown iron depletions, and 10 percent channers
23 to 35 inches, light brownish gray firm channery silty clay loam, with strong brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Substratum:
35 to 72 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light olive gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Fremont soils along drainageways and in seepage spots; the well drained Chadakoin soils which have less clay in the subsoil than the Schuyler soil; Towerville soils which have bedrock at a depth or 20 to 40 inches; and small areas of soils that have a channery surface layer. Also included are small areas of soils that are similar to the Schuyler soil, but are well drained and narrow bands of Udifluvents on the flood plains along the streams that dissect the unit. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderate or moderately slow in the subsoil, and slow or moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is severe and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails and roads across the slope helps to reduce erosion and minimizes gullying along the trails and roads.

Construction is extremely difficult or impractical on this soil. The slope is the main limitation if this soil is used as a site for local roads and streets, dwellings with basements, and septic tank absorption fields. Erosion is a very severe hazard on construction sites. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

62B—Mardin channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on convex hilltops and on side slopes that receive runoff from the higher adjacent soils. Individual areas are oblong and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with 10 percent channers
14 to 17 inches, light yellowish brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers
17 to 29 inches, olive brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers
29 to 41 inches, olive brown very firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
41 to 72 inches, grayish brown firm channery silt loam, with dark yellowish brown iron accumulations, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Volusia soils along drainageways and in seepage spots; Chautauqua soils which do not have a fragipan; Chadakoin soils which are better drained; and Schuyler soils which do not have a fragipan and have more clay in the subsoil than the Mardin soil. Also included are small areas of Mardin soils that do not have channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very low to low
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.1 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is well suited to most of the crops commonly grown in the county. The surface layer has many flat stone fragments that may interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate (fig. 11). The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

62C—Mardin channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. Individual areas are rectangular, and range from 5 to 30 acres in size.

Figure 11.—An improved stand of sugar maple on Mardin channery silt loam, 3 to 8 percent slopes. More than 65 percent of Cattaraugus County is in woodland; commercial timber production is a viable industry.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with 10 percent channers
14 to 17 inches, light yellowish brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers
17 to 29 inches, olive brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers
29 to 41 inches, olive brown very firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
41 to 72 inches, grayish brown firm channery silt loam, with dark yellowish brown iron accumulations, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Volusia soils along drainageways and in seepage spots; Chadakoin soils which are better drained; Chautauqua soils which do not have a fragipan; Schuyler soils which do not have a fragipan and have more clay in the subsoil than the Mardin soil; and Mardin soils that do not have channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very low to low
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.1 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is used for row crops grown in support of dairy farming. The rest is woodland, pasture, or idle land.

This soil is moderately well suited to row crops if erosion and runoff are controlled. The surface layer has many flat stone fragments which may interfere with tillage and harvesting operations but do not prevent cultivation. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is well suited to pasture. Overgrazing is the main concern in managing pasture because it can damage pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and severe erosion. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping will help to overcome the slope.

Frost action, slope, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e

62D—Mardin channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on smooth hillsides and valley sides that receive runoff from the higher adjacent soils. Individual areas are oblong and narrow, and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with 10 percent channers
14 to 17 inches, light yellowish brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers
17 to 29 inches, olive brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers
29 to 41 inches, olive brown very firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
41 to 72 inches, grayish brown firm channery silt loam, with dark yellowish brown iron accumulations, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Volusia soils along drainageways and at the base of slopes, where seepage water comes to the surface; Schuyler soils, which do not have a fragipan and are finer textured than the Mardin soil; Chautauqua soils which do not have a fragipan; Chadakoin soil which are better drained; and Valois soils which are friable, do not have a fragipan, and are along the lower sides of valleys. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very low to low
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.1 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to brush. Some areas are used for hay, pasture, or row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The slope limits the use of farm equipment. Tillage is slightly delayed in spring because of the wetness. Channery fragments on the surface may interfere with tillage and cause excessive wear on machinery. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Applying the recommended amounts of lime and fertilizer is needed to maintain good crop growth.

This soil is generally better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping will help to overcome the slope.

Slope, frost action, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The slope, depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

63B—Langford channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on convex hilltops and on side slopes that receive runoff from the higher adjacent soils. Individual areas are oblong and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:

7 to 21 inches, yellowish brown very friable silt loam, with 5 percent channers

21 to 25 inches, brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

25 to 34 inches, dark yellowish brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

34 to 44 inches, brown firm gravelly silt loam, with gray iron depletions, and 20 percent gravel

Substratum:

44 to 72 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions and 15 percent gravel

Included in mapping are small areas of somewhat poorly drained Erie soils along drainageways and in seepage spots; Chautauqua soils which do not have a fragipan; and Schuyler soils which do not have a fragipan and have more clay in the subsoil than the Langford soil. Also included are spots of Langford soils that have a gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of the subsoil, slow or very slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer, strongly acid to neutral in the upper subsoil, strongly acid to slightly alkaline in the fragipan, and neutral to moderately alkaline in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for row crops, alfalfa, hay, or pasture. The row crops are grown in support of dairy farming. Some of the acreage is woodland, or is idle land that is reverting to brush.

This soil is well suited to most of the crops commonly grown in the county, particularly corn, small grain, and alfalfa. A subsurface drainage system may be needed in wet spots, and diversion ditches are needed to control runoff in many fields. Erosion is a hazard on long slopes. Measures that maintain tilth and increase the content of organic matter include tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and growing cover crops. Minimizing tillage, farming on the contour, and stripcropping help to control erosion on long slopes.

This soil is well suited to pasture. Overgrazing is a major concern in managing pasture because it can damage pasture plants. Grazing early in spring, when the soil is wet, can result in surface compaction and can damage the pasture. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations on sites for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

63C—Langford channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:

7 to 21 inches, yellowish brown very friable silt loam, with 5 percent channers

21 to 25 inches, brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

25 to 34 inches, dark yellowish brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

34 to 44 inches, brown firm gravelly silt loam, with gray iron depletions, and 20 percent gravel

Substratum:

44 to 72 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 15 percent gravel

Included in mapping are small areas of somewhat poorly drained Erie soils along drainageways and in seepage spots; Chautauqua soils which do not have a fragipan; and Schuyler soils which do not have a fragipan and have more clay in the subsoil than the Langford soil. Also included are small areas of Langford soils that have a gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of the subsoil slow or very slow in the fragipan and substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to slightly acid in the surface layer, strongly acid to neutral in the upper subsoil, strongly acid to slightly alkaline in the fragipan, and neutral to moderately alkaline in the substratum

Water table: Perched at a depth of 1.2 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas have been cleared and are used for row crops, alfalfa, hay, or pasture. The row crops are grown in support of dairy farming. Some of the acreage is woodland, or is idle land that is reverting to brush.

This soil is moderately well suited to cultivated crops. If a drainage system is installed, the soil can be used for many crops, including corn, small grain, and alfalfa. The seasonal wetness may delay planting for a short period in spring. Erosion is a serious hazard on long slopes and in intensively cultivated areas. Contour farming and stripcropping in combination with diversions or grassed waterways help to control erosion. Incorporating crop residue into the soil, rotating crops, minimizing tillage, and growing cover crops help to maintain tilth, control erosion, and increase the content of organic matter.

This soil is well suited to pasture. Overgrazing is a major concern in managing pasture because it can damage pasture plants. Grazing early in spring, when the soil is wet, can result in surface compaction, damage to the pasture, and severe erosion. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping help to overcome the slope.

Frost action, slope, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

63D—Langford channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:

7 to 21 inches, yellowish brown very friable silt loam, with 5 percent channers

21 to 25 inches, brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

25 to 34 inches, dark yellowish brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

34 to 44 inches, brown firm gravelly silt loam, with gray iron depletions, and 20 percent gravel

Substratum:

44 to 72 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 15 percent gravel

Included in mapping are small areas of somewhat poorly drained Erie soils along drainageways and in seepage spots; Chautauqua soils which do not have a fragipan; and Schuyler soils which do not have a fragipan and have more clay in the subsoil than the Langford soil. Also included are small areas of Langford soils that have a gravelly surface layer. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of the subsoil slow or very slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to slightly acid in the surface layer, strongly acid to neutral in the upper subsoil, strongly acid to slightly alkaline in the fragipan, and neutral to moderately alkaline in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are used for hay, pasture, or row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The slope limits the use of farm equipment. Tillage is slightly delayed in spring because of the wetness. Channery fragments on the surface may interfere with tillage and cause excessive wear on machinery. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes, and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Applying a sufficient amount of lime and fertilizer is needed to maintain good crop growth.

This soil is better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping help to overcome the slope limitation.

Slope, frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The slope, depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption field, and adding permeable fill material help overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

64C—Mardin channery silt loam, 8 to 15 percent slopes, very stony

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. The soil surface is covered by 0.1 to 3 percent stones. Individual areas are oblong, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with 10 percent channers
14 to 17 inches, light yellowish brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers
17 to 29 inches, olive brown firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers
29 to 41 inches, olive brown very firm channery silt loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
41 to 72 inches, grayish brown firm channery silt loam, with dark yellowish brown iron accumulations, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Volusia soils along drainageways and in seepage spots; Chautauqua soils which do not have a fragipan; Schuyler soils which do not have a fragipan, and have more clay in the subsoil than the Mardin soil. Also included area areas that have fewer stones on the surface and areas that are extremely stony. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or very slow in the fragipan and substratum
Available water capacity: Very low to low
Soil reaction: Very strongly acid to moderately acid above the fragipan, very strongly acid to slightly acid in the fragipan, and strongly acid to neutral in the substratum
Water table: Perched at a depth of 1.1 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, pasture, or idle land.

This soil is poorly suited to row crops and improved pasture due to the excessive number and size of stones on the surface. The stones make tillage and harvesting operations impossible or impractical.

This soil is moderately well suited to unimproved pasture. Overgrazing is the main concern in managing pasture because it can damage pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and severe erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping will help to overcome the slope.

Frost action, slope, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6s.

66B—Volusia channery silt loam, 3 to 8 percent slopes, very stony

This soil is gently sloping, very deep, and somewhat poorly drained. It is on hilltops, side slopes and concave toeslopes in uplands where it receives runoff from the higher adjacent soils. The soil surface is covered by 0.1 to 3 percent stones. Individual areas are oblong or rectangular in shape, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
7 to 16 inches, light brownish gray friable channery loam, with yellowish brown iron accumulations, and 25 percent channers

Subsoil:
16 to 45 inches, brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Substratum:
45 to 68 inches, brown firm very channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 35 percent channers
68 to 72 inches, grayish brown firm very gravelly loam, with 45 percent gravel

Included in mapping are small areas of the poorly drained Chippewa soils in slight depressions and along drainageways; Busti soils which are coarser textured and do not have a fragipan; and Fremont soils which do not have a fragipan and have more clay in the subsoil than the Volusia soil. Small areas of the moderately well drained

Mardin soils are included on the higher, more sloping positions of the landscape. Small spots of Orpark soils which have bedrock within a depth of 40 inches, are also included. Some areas have fewer stones on the surface and some areas are extremely stony. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, and slow or very slow in the fragipan layer and substratum
Available water capacity: Very low or low
Soil reaction: Very strongly acid to moderately acid in the surface layer, very strongly acid to slightly acid in the subsurface and upper subsoil, strongly acid to slightly acid in the fragipan, and from strongly acid to slightly alkaline in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, pasture, or idle land.

This soil is poorly suited to row crops and improved pasture due to the excessive number and size of stones on the surface and seasonal wetness. The stones make tillage and harvesting operations impossible or impractical.

This soil is moderately well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6s.

67A—Dalton silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on the top of hills in the uplands and on broad flats on till plains. Individual areas are oblong or irregularly shaped. They commonly range from 10 to 50 acres in size, but some are as large as 100 acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown silt loam

Subsurface:
9 to 17 inches, light brownish gray friable silt loam, with strong brown and olive brown iron accumulations

Subsoil:
17 to 29 inches, olive brown firm silt loam, with brown iron accumulations and grayish brown iron depletions, and 5 percent gravel
29 to 50 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and gray iron depletions, and 25 percent gravel

Substratum:
50 to 72 inches, grayish brown firm gravelly loam, with yellowish brown iron accumulations, and 20 percent gravel

Included in mapping are small areas of poorly drained Ashville soils along drainageways and in slight depressions; moderately well drained Canaseraga soils on slight rises and knolls; Fremont soils in areas with no fragipans; and Volusia soils having a silty mantle less than 20 inches thick. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsurface layer, slow or very slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsurface layer, strongly acid to moderately acid in the upper fragipan, moderately acid to neutral in the lower fragipan, and slightly acid to neutral in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay, pasture, or cultivated crops in support of dairy farming. Some of the acreage is woodland or idle land.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If a drainage system is installed, the soil is suited to most of the crops commonly grown in the county. Wetness can be reduced by closely spaced tile and open-ditch drainage systems. The soil commonly does not have stones on the surface and can be easily cultivated. Crops respond well to sufficient applications of lime and fertilizer. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to water-tolerant hay and to late spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damages the pasture. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, topdressing with lime and fertilizer, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

67B—Dalton silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on the top of hills in the uplands and on broad flats on till plains. It receives some runoff from the higher adjacent soils. Individual areas are oblong or irregularly shaped, and commonly range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown silt loam

Subsurface:

9 to 17 inches, light brownish gray friable silt loam, with strong brown and olive brown iron accumulations

Subsoil:

17 to 29 inches, olive brown firm silt loam, with brown iron accumulations and grayish brown iron depletions, and 5 percent gravel

29 to 50 inches, brown firm gravelly silt loam, with yellowish brown iron accumulations and gray iron depletions, and 25 percent gravel

Substratum:

50 to 72 inches, grayish brown firm gravelly loam, with yellowish brown iron accumulations, and 20 percent gravel

Included in mapping are small areas of poorly drained Ashville soils along drainageways and in slight depressions; moderately well drained Canaseraga soils on slight rises and knolls; Fremont soils in areas with no fragipans; and Volusia soils having a silty mantle less than 20 inches thick. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsurface layer, slow or very slow in the fragipan and substratum

Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsurface layer, strongly acid to moderately acid in the upper fragipan, moderately acid to neutral in the lower fragipan, and slightly acid to neutral in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay, pasture, or cultivated crops grown in support of dairy farming. Some of the acreage is woodland or idle land.

This soil is moderately well suited to cultivated crops. Undrained areas are better suited to short-season crops, and to hay and pasture. Wetness delays tillage in spring and may make harvesting difficult in fall. If drained and protected from erosion, the soil is suited to most of the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter. The soil commonly does not have stones on the surface and can be easily cultivated. Crops respond well to recommended applications of lime and fertilizer.

This soil is well suited to water-tolerant hay and to late spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damages the pasture. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, topdressing with lime and fertilizer, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help reduce the seasonal wetness and the restricted permeability.

This soil is subject to erosion if plant material is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

68A—Volusia channery silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on flat hilltops that receive little or no runoff and on upland benches that receive runoff from the higher adjacent soils. Individual areas are circular or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:

7 to 16 inches, light brownish gray friable channery loam, with yellowish brown iron accumulations, and 25 percent channers

Subsoil:

16 to 45 inches, brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Substratum:

45 to 68 inches, brown firm very channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 35 percent channers

68 to 72 inches, grayish brown firm very gravelly loam, with 45 percent gravel

Included in mapping are small areas of the poorly drained Chippewa soils in slight depressions and along drainageways; Busti soils which do not have a fragipan; better drained Mardin soil on higher knolls; and Fremont soils which do not have a fragipan and have more clay in the subsoil than the Volusia soil. Also included are small areas of Orpark soils which are less than 40 inches deep over bedrock, and small areas of Volusia soils that do not have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer and slow or very slow in the fragipan layer and substratum

Available water capacity: Very low to low

Soil reaction: Very strongly acid to moderately acid in the surface layer, very strongly acid to slightly acid in the subsurface and upper subsoil, strongly acid to slightly acid in the fragipan, and from strongly acid to slightly alkaline in the substratum

Water table: Perched at a depth of .5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. These areas generally are farmed at a low level of intensity.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is more difficult on this nearly level soil than on the more sloping Volusia soils. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. The wetness can be reduced by closely spaced tile and open-ditch drainage systems. Maintaining good tilth is a management concern in intensively cultivated areas. Minimizing tillage, incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content, help to maintain tilth and the content of organic matter. Crops respond well to recommended applications of lime and fertilizer.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

68B—Volusia channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on hilltops, side slopes and concave toeslopes on uplands that receive runoff from the higher adjacent soils. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:

7 to 16 inches, light brownish gray friable channery loam, with yellowish brown iron accumulations, and 25 percent channers

Subsoil:

16 to 45 inches, brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Substratum:

45 to 68 inches, brown firm very channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 35 percent channers

68 to 72 inches, grayish brown firm very gravelly loam, with 45 percent gravel

Included in mapping are small areas of the poorly drained Chippewa soils in slight depressions and along drainageways; better drained Mardin soils on higher knolls;

Busti soils which do not have a fragipan; and Fremont soils which do not have a fragipan, and have more clay in the subsoil than the Volusia soil. Also included are small areas of Orpark soils, which are less than 40 inches deep over bedrock, and small areas of Volusia soils that do not have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer and slow or very slow in the fragipan layer and substratum
Available water capacity: Very low or low
Soil reaction: Very strongly acid to moderately acid in the surface layer, very strongly acid to slightly acid in the subsurface and upper subsoil, strongly acid to slightly acid in the fragipan, and from strongly acid to slightly alkaline in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. These areas generally are farmed at a low level of intensity.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter. Crops respond well to recommended applications of lime and fertilizer.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

68C—Volusia channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides, valley sides and the side slopes of dissected drainageways. It receives runoff from the higher adjacent soils. Individual areas are oblong or rectangular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:

7 to 16 inches, light brownish gray friable channery loam, with yellowish brown iron accumulations, and 25 percent channers

Subsoil:

16 to 45 inches, brown very firm channery silt loam, with yellowish brown iron accumulations and grayish brown iron depletions, and 30 percent channers

Substratum:

45 to 68 inches, brown firm very channery silt loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 35 percent channers

68 to 72 inches, grayish brown firm very gravelly loam, with 45 percent gravel

Included in mapping are small areas of the poorly drained Chippewa soils in slight depressions and along drainageways; Busti soils which do not have a fragipan; moderately well drained Mardin soil; and Fremont soils which do not have a fragipan and have more clay in the subsoil than the Volusia soil. Also included are small areas of Orpark soils which are less than 40 inches deep over bedrock, and small areas of Volusia soils that do not have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, and slow or very slow in the fragipan layer and substratum

Available water capacity: Very low to low

Soil reaction: Very strongly acid to moderately acid in the surface layer, very strongly acid to slightly acid in the subsurface and upper subsoil, strongly acid to slightly acid in the fragipan, and from strongly acid to slightly alkaline in the substratum

Water table: Perched at a depth of .5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for hay and pasture. Some acreage is woodland, or is idle land that is reverting to woodland. A few areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter. Crops respond well to recommended applications of lime and fertilizer.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and the slope are the main limitations on sites for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping will help to overcome the slope.

Frost action, slope, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

69A—Erie channery silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on broad flats on hilltops and till plains. Some areas receive runoff from the higher adjacent soils. Individual areas are oblong or circular, and commonly are from 10 to 50 acres in size, but range from 5 to 60 acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
9 to 14 inches, light brownish gray friable silt loam, with yellowish brown and brown iron accumulations, and 10 percent channers

Subsoil:
14 to 28 inches, brown firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers
28 to 45 inches, dark grayish brown firm channery silt loam, with yellowish brown iron accumulations, and 20 percent channers

Substratum:
45 to 72 inches, grayish brown firm channery silt loam, with yellowish brown iron accumulations, and 25 percent channers

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Darien soils which do not have a fragipan; and Fremont soils which do not have a fragipan, and have a higher content of clay in the subsoil than the Erie soil. Also included are areas of the moderately well drained Langford soils on slight rises and knolls. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, slow in the fragipan and substratum
Available water capacity: Very low to low
Soil reaction: Strongly acid to slightly acid in the surface and subsurface, moderately acid to slightly alkaline in the fragipan, and slightly acid to moderately alkaline in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, hay, or pasture. Some of the acreage is woodland, or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay or pasture. Harvesting crops during prolonged wet periods in fall is more difficult on this soil than on the more sloping Erie soils. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. Wetness can be reduced by installing closely spaced tile and open-ditch drainage systems. Maintaining good tilth is a management concern in some intensively cultivated areas. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damages the pasture. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand seasonal wetness grow best.

The depth to saturated zone is the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption fields reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

The capability subclass is 3w.

69B—Erie channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is in areas on broad hilltops, concave toe slopes, and low till plains that receives runoff from the higher adjacent soils. Individual areas are oblong or circular, and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
9 to 14 inches, light brownish gray friable silt loam, with yellowish brown and brown iron accumulations, and 10 percent channers

Subsoil:
14 to 28 inches, brown firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers
28 to 45 inches, dark grayish brown firm channery silt loam, with yellowish brown iron accumulations, and 20 percent channers

Substratum:
45 to 72 inches, grayish brown firm channery silt loam, with yellowish brown iron accumulations, and 25 percent channers

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Darien soils which do not have a fragipan; and Fremont soils which do not have a fragipan, and have a higher content of clay in the subsoil than the Erie soil. Also included are areas of the moderately well drained Langford soils on slight rises and knolls. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, slow in the fragipan and substratum
Available water capacity: Very low or low
Soil reaction: Strongly acid to slightly acid in the surface and subsurface, moderately acid to slightly alkaline in the fragipan, and slightly acid to moderately alkaline in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, hay, or pasture. Some of the acreage is woodland, or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the fragipan. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

69C—Erie channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides, valley sides, and the side slopes of dissecting drainageways. It receives some runoff from the higher adjacent soils. Individual areas are oblong or rectangular in shape, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:

9 to 14 inches, light brownish gray friable silt loam, with yellowish brown and brown iron accumulations, and 10 percent channers

Subsoil:

14 to 28 inches, brown firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

28 to 45 inches, dark grayish brown firm channery silt loam, with yellowish brown iron accumulations, and 20 percent channers

Substratum:

45 to 72 inches, grayish brown firm channery silt loam, with yellowish brown iron accumulations, and 25 percent channers

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways; Darien soils which do not have a fragipan; and Fremont soils which do not have a fragipan, and have a higher content of clay in the subsoil than the Erie soil. Also included are areas of the moderately well drained Langford soils on slight rises and knolls. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, slow in the fragipan and substratum
Available water capacity: Very low or low
Soil reaction: Strongly acid to slightly acid in the surface and subsurface, moderately acid to slightly alkaline in the fragipan, and slightly acid to moderately alkaline in the substratum
Water table: Perched at a depth of .5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops, hay, or pasture. Some of the acreage is woodland, or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. If drained and protected from erosion, this soil can be used for most of the crops commonly grown in the county. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the fragipan. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and the slope are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and shaping will help to overcome the slope.

Frost action, slope and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

71E—Mongaup channery silt loam, 25 to 35 percent slopes, very stony

This soil is steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. Large stones cover 0.1 to 3 percent of the soil surface. It occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 8 inches, strong brown very friable channery silt loam, with 15 percent channers
8 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 27 inches, brown friable channery silt loam, with 25 percent channers

Substratum:
27 inches, hard grayish sandstone and siltstone bedrock

Included in mapping are small areas of moderately well drained Ischua soils; well drained Franklinville soils where the bedrock is deeper below the surface; and Mongaup soils that lack the very stony surface layer, or that are extremely stony on the surface. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum

Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat. Some areas are idle, or are used as pasture.

This soil is not suited to cultivated crops or hay because of the surface stones, slope and the very severe hazard of erosion. The stones make tillage and harvesting operations impossible or impractical. A plant cover that controls runoff and erosion is essential.

The suitability of this soil for pasture is limited due to the excessive number and size of stones on the surface. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope and surface stones. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope and the depth to hard bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land shaping may be necessary to overcome the slope. Hard bedrock can make excavation difficult and costly. Blasting may be necessary.

The slope, frost action, and depth to hard bedrock are the main limitations if this soil is used as a site for local roads and streets. Careful planning and design of roads and streets along the contour, along with land grading, can help to overcome the limitation imposed by slope. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the frost action. Hard bedrock can make excavation difficult and costly. Blasting may be necessary.

Depth to bedrock and slope are limitations if this soil is used as a site for septic tank absorption fields. Hard bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Extensive engineering, design modifications and land shaping are necessary to overcome the limitations imposed by slope.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 7s.

71F—Mongaup channery silt loam, 35 to 70 percent slopes, very stony

This soil is very steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. Large stones cover 0.1 to 3 percent of the soil surface. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 8 inches, strong brown very friable channery silt loam, with 15 percent channers
8 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 27 inches, brown friable channery silt loam, with 25 percent channers

Substratum:
27 inches, hard grayish sandstone and siltstone bedrock

Included in mapping are small areas of moderately well drained Ischua soils; well drained Franklinville soils where the bedrock is deeper below the surface; and Mongaup soils that lack the very stony surface layer, or soils that have an extremely stony surface layer. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The slope, surface stones and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is severe and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails across the slope helps to control erosion and minimizes gullying along the trails and roads.

Construction is extremely difficult or impractical on this soil. The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements, local roads and streets, and septic tank absorption fields. Extensive engineering, design modifications and land shaping are necessary to overcome the limitations imposed by slope and depth to bedrock.

Erosion is a very serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. In most areas the native plant cover should not be removed.

The capability subclass is 7s.

72B—Towerville silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and moderately well drained. It is on convex hilltops and side slopes in areas where the topography is influenced by the underlying bedrock. Siltstone, shale or sandstone bedrock is at a depth of 20 to 40 inches. Individual areas are long and narrow, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
7 to 15 inches, yellowish brown friable silt loam, with 5 percent channers
15 to 23 inches, light yellowish brown friable silt loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers
23 to 32 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:
32 inches, interbedded sandstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Orpark soils along drainageways and in slight depressions, and small areas of Hornell soils, which have more clay in the subsoil than the Towerville soil. Also included are small areas of Schuyler soils which are very deep over bedrock, small areas of soils that have a channery surface layer, and small areas that are less than 20 inches deep to bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or moderately slow in the lower part of the subsoil
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid throughout the soil
Water table: At a depth of 1.5 to 2.0 feet from December through April
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to brush. Some areas are used for row crops grown in support of dairy farming. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. Tillage is delayed by wetness in spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Installing subsurface drainage systems is difficult because of the moderate depth to bedrock. Sufficient applications of lime are needed for most crops, especially legumes. Crops respond well to recommended applications of fertilizer. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

The soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction restrict plant growth and can damage pasture plants and increase the runoff rate. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements.

Frost action, depth to saturated zone and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to saturated zone and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

72C—Towerville silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and moderately well drained. It is on hilltops and side slopes in areas where the topography is influenced by the underlying bedrock. Siltstone, shale or sandstone bedrock is at a depth of 20 to 40 inches. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
7 to 15 inches, yellowish brown friable silt loam, with 5 percent channers
15 to 23 inches, light yellowish brown friable silt loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers
23 to 32 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:
32 inches, interbedded sandstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Orpark soils along drainageways and in slight depressions, and small areas of Hornell soils which have more clay in the subsoil than the Towerville soil. Also included are small areas of Schuyler soils which are very deep over bedrock, small areas of soils that have a channery surface layer, and small areas than are less than 20 inches deep to bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or moderately slow in the lower part of the subsoil
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid throughout the soil
Water table: At a depth of 1.5 to 2.0 feet from December through April
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to brush. Some areas are used for row crops grown in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. Tillage is delayed by wetness in spring. Draining the wetter included soils allows for earlier planting and more uniform management of the fields. Installing subsurface drainage systems is difficult because of the moderate depth to bedrock. Sufficient applications of lime are needed for most crops, especially legumes. Crops respond well to recommended applications of fertilizer. Erosion is a hazard on long slopes in intensively cultivated areas. Minimizing tillage, farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Growing cover crops, incorporating crop residue into the soil, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

The soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if it is grazed when wet. Overgrazing and surface compaction can restrict plant growth, damage pasture plants, and increase the runoff rate. Applying the proper kinds and amounts of lime and fertilizer, using stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, depth to bedrock and slope are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Frost action, slope, depth to saturated zone, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the frost action and wetness. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

72D—Towerville silt loam, 15 to 25 percent slopes

This soil is moderately steep, moderately deep, and moderately well drained. It is on valley sides that commonly are dissected by V-shaped gullies. It is in areas where the topography is influenced by the underlying bedrock. Siltstone, shale and sandstone bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
7 to 15 inches, yellowish brown friable silt loam, with 5 percent channers
15 to 23 inches, light yellowish brown friable silt loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers
23 to 32 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:
32 inches, interbedded sandstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Orpark soils along drainageways and in slight depressions, and small areas of Hornell soils which have more clay in the subsoil than the Towerville soil. Also included are small areas of Schuyler soils which are very deep over bedrock, small areas of soils that have a channery surface layer, and small areas that are less than 20 inches deep to bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or moderately slow in the lower part of the subsoil
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid throughout the soil
Water table: At a depth of 1.5 to 2.0 feet from December through April
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are used for hay or pasture. A few areas are used for row crops.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The slope limits the use of farm equipment. Tillage is slightly delayed by wetness in spring. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Applying sufficient amounts of lime and fertilizer is needed to maintain good crop growth.

The soil is better suited to hay and pasture than to cultivated crops. Overgrazing and grazing when the soil is wet restrict plant growth and can damage pasture plants. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing and controlling weeds and brush are the main management concerns. Because the soil is naturally acid, applications of lime and fertilizer are needed to improve the growth of most pasture plants.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone, slope, and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Slope, frost action, depth to saturated zone, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the frost action and wetness. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Land grading and building on the contour help to overcome the slope limitation.

The slope, depth to saturated zone, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

72E—Towerville silt loam, 25 to 35 percent slopes

This soil is steep, moderately deep, and moderately well drained. It is on valley sides that commonly are dissected by V-shaped gullies. It is in areas where the topography is influenced by the underlying bedrock. Siltstone bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. Individual areas are long and narrow and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
7 to 15 inches, yellowish brown friable silt loam, with 5 percent channers
15 to 23 inches, light yellowish brown friable silt loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers
23 to 32 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:
32 inches, interbedded sandstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Orpark soils along drainageways and in seepage spots, and small areas of Hornell soils which have more clay in the subsoil than the Towerville soil. Also included are small areas of the well drained Chadakoin soils which have less clay in the subsoil than the Towerville soil, and are very deep over bedrock; small areas of Schuyler soils which are very deep to bedrock; soils that are similar to the Towerville soil but are well drained; and soils that have a channery surface layer. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or moderately slow in the lower part of the subsoil
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid throughout the soil
Water table: At a depth of 1.5 to 2.0 feet from December through April
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat. Some of the less sloping areas are idle, or are used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

This soil is poorly suited to improved pasture due to the steep slopes. A good plant cover needs to be maintained to prevent erosion. Prevention of overgrazing also helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to saturated zone, slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

Slope, frost action, depth to saturated zone, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the frost action and wetness. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Land grading and building on the contour help to overcome the slope limitation.

Slope, depth to saturated zone, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Extensive engineering, design modifications and land shaping are necessary to overcome the limitations imposed by slope and depth to bedrock. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

72F—Towerville silt loam, 35 to 50 percent slopes

This soil is very steep, moderately deep, and moderately well drained. It is on valley sides that commonly are dissected by V-shaped gullies. It is in areas where the topography is influenced by the underlying bedrock. Siltstone, shale or sandstone bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
7 to 15 inches, yellowish brown friable silt loam, with 5 percent channers
15 to 23 inches, light yellowish brown friable silt loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers
23 to 32 inches, brown firm channery silty clay loam, with yellowish brown iron accumulations and dark grayish brown iron depletions, and 20 percent channers

Substratum:
32 inches, interbedded sandstone and shale bedrock

Included in mapping are small areas of the somewhat poorly drained Orpark soils along drainageways and in seepage spots, and small areas of Hornell soils, which have more clay in the subsoil than the Towerville soil. Also included are small areas of the well drained Chadakoin soils which have less clay in the subsoil than the Towerville soil, and are very deep over bedrock; small areas of Schuyler soils which are very deep to bedrock; soils that are similar to the Towerville soil but are well drained; and soils that have a channery surface layer. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and in the upper part of subsoil, slow or moderately slow in the lower part of the subsoil
Available water capacity: Low to high
Soil reaction: Very strongly acid to moderately acid throughout the soil
Water table: At a depth of 1.5 to 2.0 feet from December through April
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is severe and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails across the slope helps to control erosion and minimizes gullying along the roads and trails.

Construction is extremely difficult or impractical on this soil. The slope is the main limitation if this soil is used as a site for dwellings with basements, or local roads and streets, or septic tank absorption fields. Erosion is a very serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

73B—Gretor channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and somewhat poorly drained. It is on broad hilltops, side slopes and ridge benches in areas where the topography is influenced by the underlying bedrock. Sandstone or siltstone bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. It occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown channery silt loam with 25 percent channers

Subsoil:
8 to 13 inches, brown friable channery silt loam, with 25 percent channers
13 to 21 inches, light brownish gray firm channery silt loam, with olive brown and yellowish brown iron accumulations, and 30 percent channers
21 to 25 inches, light olive gray firm channery silty clay loam, with yellowish red iron accumulations, and 25 percent channers

Substratum:
25 inches, fine-grained sandstone bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Hornellsville soils, which contain more clay than the Gretor soil. Also included are small areas of Almond soils which are very deep over bedrock; moderately well drained Ischua soils on slight rises and knolls; small areas of soils that have a silt loam surface layer; and small areas which have bedrock within 20 inches of the surface. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsoil
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and from strongly acid to slightly acid in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay, or pasture. Erosion is a hazard on long slopes that are intensively cultivated. If a drainage system is installed, the soil is suited to many crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water.

Installing subsurface drainage systems is difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of the natural acidity and low fertility, recommended applications of fertilizer and lime are needed to ensure crop growth.

This soil is well suited to water-tolerant grasses and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture.

Grazing when the soil is wet causes surface compaction and restricts plant growth. Overgrazing can deplete the stand of pasture grasses, and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and the depth to bedrock are the main limitation if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce the potential for frost action and the wetness. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

73C—Gretor channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and somewhat poorly drained. It is on valley sides and hillsides in areas where the topography is influenced by the underlying bedrock. Bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown channery silt loam with 25 percent channers

Subsoil:
8 to 13 inches, brown friable channery silt loam, with 25 percent channers
13 to 21 inches, light brownish gray firm channery silt loam, with olive brown and yellowish brown iron accumulations, and 30 percent channers
21 to 25 inches, light olive gray firm channery silty clay loam, with yellowish red iron accumulations, and 25 percent channers

Substratum:
25 inches, fine-grained sandstone bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Hornellsville soils, which contain more clay than the Gretor soil. Also included are small areas of Almond soils, which are very deep over bedrock; moderately well drained Ischua soils on sight rises and knolls; small areas of soils that have a silt loam surface layer; and small areas which have bedrock within 20 inches of the surface. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsoil
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and from strongly acid to slightly acid in the substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to cultivated crops. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay, or pasture. Erosion is a hazard on long slopes that are intensively cultivated. If a drainage system is installed, the soil is suited to many crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems is difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of the natural acidity and low fertility, the soil requires recommended applications of fertilizer and lime for adequate crop growth.

This soil is moderately well suited to water-tolerant grasses and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and restricts plant growth. Overgrazing can deplete the stand of pasture grasses, and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, depth to bedrock and slope are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, slope and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce the potential for frost action and wetness. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

74—Ashville silt loam

This soil is nearly level, very deep, and poorly drained. It is along drainageways, on broad flats, and in small depressions on glaciated uplands. Individual areas are circular or oblong and range from 5 to 30 acres in size. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark gray silt loam with 5 percent channers

Subsoil:
9 to 16 inches, gray friable silt loam, with olive brown and strong brown iron accumulations, and 5 percent channers
16 to 23 inches, grayish brown friable silt loam, with yellowish brown and dark brown iron accumulations, and 10 percent channers
23 to 44 inches, dark grayish brown firm channery silt loam, with brown and yellowish brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

Substratum:
44 to 72 inches, grayish brown firm channery silt loam, with brown and yellowish brown iron accumulations, and 20 percent channers

Included in mapping are small areas of Canandaigua, Fremont, and Busti soils. Canandaigua soils are silty throughout, and are on broad flats. The somewhat poorly drained Fremont and Busti soils are on the slightly higher rises and knolls. Also included are small areas of very poorly drained Alden soils which have a mucky surface, and small areas of soils having a silty colluvial surface layer that is thicker than that of the Ashville soil. Included areas make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the subsoil, and slow or moderately slow in the substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface layer, from moderately acid to neutral in the subsoil, and from moderately acid to moderately alkaline in the substratum
Water table: At the surface or to a depth of 0.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used as pasture. Some areas support water-tolerant vegetation and trees. Some drained areas are used for cultivated crops or hay. This soil meets the requirements for hydric soils.

Unless drained, this soil is poorly suited to cultivated crops. If the soil is protected against excessive runoff from the adjacent soils and is drained, selected crops can be grown. Generally, the soil is in depressions that are surrounded by better drained soils. If subsurface tile is installed to improve drainage and open ditches are provided to divert runoff, the soil can be farmed along with the better drained adjacent soils. Tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Tilling at the proper moisture content also minimizes compaction and clodding.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the growth of the roots of some forage crops. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. If the pasture is grazed during wet periods, the surface layer can easily become compacted. Using proper stocking rates, selecting water-tolerant species for seeding, rotating livestock grazing, deferring grazing when the soil is wet, and controlling weeds and brush are the main management concerns. Improving drainage increases forage production.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

Depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Under natural conditions, this soil is too wet for the construction of dwellings with basements. Included areas of the somewhat poorly drained Fremont and Busti soils may be better sites for these dwellings.

Depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Building on raised fill material and installing a drainage system help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable, should be considered for locating septic tank absorption fields.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

75—Alden mucky silt loam

This soil is very deep, nearly level, and very poorly drained. It commonly is in low areas, in depressions, and in headwater areas of streams. Individual areas are oblong or circular in shape and range from 5 to 50 acres in size. Slopes generally are smooth and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, black mucky silt loam with 2 percent gravel

Subsoil:
6 to 16 inches, gray friable silt loam, with yellowish brown iron accumulations, and 2 percent gravel
16 to 25 inches, gray friable silty clay loam, with yellowish brown iron accumulations, and 2 percent gravel

Substratum:
25 to 36 inches, gray friable silty clay loam, with brown iron accumulations, and 5 percent gravel
36 to 49 inches, gray friable loam, with brown iron accumulations, and 10 percent gravel
49 to 72 inches, light brownish gray friable gravelly fine sandy loam, with gray iron depletions, and 20 percent gravel

Included in mapping are small areas of the poorly drained Ashville soils in the slightly higher positions on the landscape. Also included are the very poorly drained Canandaigua soils, which have less gravel throughout the profile, and the poorly drained Wayland soils in low areas on flood plain. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and moderately slow in the subsoil and moderately slow or slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and moderately acid to slightly alkaline in the substratum
Water table: At or above the surface throughout the year
Rooting Zone: Restricted by the seasonal high water table
Flooding hazard: None
Depth to bedrock: More than 6 feet
Ponding hazard: As much as 1.0 feet above the surface from September through June, and as much as 0.5 feet above the surface in July and August

Most of the acreage is idle land that supports water-tolerant shrubs and trees. Some areas are used as pasture. This soil meets the requirements for hydric soils.

This soil is generally unsuited to most crops due to the high seasonal water table and ponding throughout much of the year.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts root growth of most forage crops.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand wetness grow best.

Depth to saturated zone and ponding are the main management concerns if this soil is used as a site for dwellings with basements and local roads and streets. Frost action is also a limitation for local roads and streets. Building on raised coarse textured fill material and installing a drainage system will reduce wetness and frost action. This soil is too wet for the construction of dwellings with basements without major modifications. Adjacent areas that are better drained should be considered for these uses first.

The depth to saturated zone, ponding, and restricted permeability in the subsoil and substratum are the main limitations if this soil is used as a site for septic tank absorption fields. This soil is too wet for septic tank absorption fields. Extensive engineering and design modification are needed if the soil is used for onsite waste disposal systems. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

Many areas of this soil are well suited to wetland wildlife habitat or to the development of recreational ponds.

The capability subclass is 5w.

76A—Orpark silt loam, 0 to 3 percent slopes

This soil is nearly level, moderately deep, and somewhat poorly drained. It is on flat ledges and ridge crests in areas where the topography is influenced by the underlying bedrock. Shale or siltstone bedrock is at a depth of 20 to 40 inches. Individual areas are elongated, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, very dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 12 inches, light olive brown friable silt loam, with strong brown iron accumulations and olive gray iron depletions, and 5 percent channers
12 to 22 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and olive gray iron depletions, and 10 percent channers

Substratum:
22 to 24 inches, light olive brown firm silt loam, with strong brown iron accumulations and olive gray iron depletions, and 5 percent channers
24 to 26 inches, olive brown firm extremely channery silty clay loam, with strong brown, dark gray and gray weathered shale, and 70 percent channers
26 inches, soft shale bedrock interbedded with siltstone

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Hornell soils which contain more clay than the Orpark soil. Also included are small areas of Fremont soils which are very deep over bedrock; small areas of poorly drained Ashville soils which are very deep to bedrock, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or slow in the subsoil and substratum

Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. It is limited by the seasonal wetness, the content of clay in the subsoil, and low natural fertility. Installing subsurface drains can be difficult because of the moderate depth to bedrock. Plowing at the proper moisture content is important because the subsoil tends to develop poor tilth and become cloddy if the soil is tilled when wet. Harvesting crops during prolonged wet periods in fall is more difficult on this soil than on the more sloping adjacent Orpark soils. Sufficient applications of fertilizer and lime commonly are required for optimum crop growth. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter.

This soil is well suited to water-tolerant grasses and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and restricts plant growth. Overgrazing can deplete the stand of pasture grasses, and thus result in erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management practices.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and the depth to soft bedrock are the main limitation if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations on sites for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce the potential for frost action and wetness.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations on sites for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

The capability subclass is 3w.

76B—Orpark silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and somewhat poorly drained. It is on broad hilltops, side slopes and ridge benches in areas where the topography is influenced by the underlying bedrock. Shale or siltstone bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, very dark grayish brown silt loam with 5 percent channers

Subsoil:

8 to 12 inches, light olive brown friable silt loam, with strong brown iron accumulations and olive gray iron depletions, and 5 percent channers

12 to 22 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and olive gray iron depletions, and 10 percent channers

Substratum:

22 to 24 inches, light olive brown firm silt loam, with strong brown iron accumulations and olive gray iron depletions, and 5 percent channers

24 to 26 inches, olive brown firm extremely channery silty clay loam, with strong brown, dark gray and gray weathered shale, and 70 percent channers

26 inches, soft shale bedrock interbedded with siltstone

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Hornell soils which contain more clay than the Orpark soil. Also included are small areas of Fremont soils which are very deep over bedrock; small areas of poorly drained Ashville soils which are very deep to bedrock, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or slow in the subsoil and substratum

Available water capacity: Low or moderate

Soil reaction: Very strongly acid or strongly acid throughout the profile

Water table: At a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to crops. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay, or pasture. Erosion is a hazard on long slopes that are intensively cultivated. If a drainage system is installed, the soil is suited to many of the crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems is difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of the natural acidity and low fertility, sufficient applications of fertilizer and lime are needed for good crop growth.

This soil is well suited to water-tolerant grasses and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture.

Grazing when the soil is wet causes surface compaction and restricts plant growth. Overgrazing can deplete the stand of pasture grasses, and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and the depth to soft bedrock are the main limitation on sites for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce the potential for frost action and wetness.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

76C—Orpark silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and somewhat poorly drained. It is on valley sides and hillsides in areas where the topography is influenced by the underlying bedrock. Shale or siltstone bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, very dark grayish brown silt loam with 5 percent channers

Subsoil:

8 to 12 inches, light olive brown friable silt loam, with strong brown iron accumulations and olive gray iron depletions, and 5 percent channers

12 to 22 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and olive gray iron depletions, and 10 percent channers

Substratum:

22 to 24 inches, light olive brown firm silt loam, with strong brown iron accumulations and olive gray iron depletions, and 5 percent channers

24 to 26 inches, olive brown firm extremely channery silty clay loam, with strong brown, dark gray and gray weathered shale, and 70 percent channers
26 inches, soft shale bedrock interbedded with siltstone

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Hornell soils, which contain more clay than the Orpark soil. Also included are small areas of Fremont soils which are very deep over bedrock; small areas of poorly drained Ashville soils which are very deep to bedrock, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or slow in the subsoil and substratum
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to crops. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay, or pasture. Erosion is a hazard on long slopes that are intensively cultivated. If a drainage system is installed, the soil is suited to many of the crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems is difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of the natural acidity and low fertility, the soil requires sufficient applications of fertilizer and lime for good crop growth.

This soil is moderately well suited to water-tolerant grasses and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and restricts plant growth. Overgrazing can deplete the stand of pasture grasses, and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. The depth to saturated zone, depth to soft bedrock and slope are the main limitation on sites for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce the potential for frost action and wetness. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

77A—Chippewa silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and poorly drained. It is along drainageways, on broad flats, and in small depressions on glaciated uplands. Individual areas are circular or oblong, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, very dark gray silt loam with 5 percent channers

Subsurface layer:
6 to 13 inches, gray friable silt loam with dark yellowish brown and yellowish brown iron accumulations, and 5 percent channers

Subsoil:
13 to 19 inches, gray friable silty clay loam, with strong brown iron accumulations, and 10 percent channers
19 to 41 inches, dark grayish brown very firm channery silt loam, with yellowish brown and olive brown iron accumulations and gray iron depletions, and 20 percent channers

Substratum:
41 to 72 inches, grayish brown firm channery silt loam, with strong brown and olive brown iron accumulations, and 25 percent channers

Included in mapping are small areas of Ashville, Canandaigua, Volusia, and Alden soils. Ashville and Alden soils lack a fragipan in the subsoil. Canandaigua soils are silty throughout. The somewhat poorly drained Volusia soils are on the slightly higher rises and knolls. Also included are small areas of soils having a silty colluvial surface layer that is thicker than that of the Chippewa soil. Included areas make up about 10 to 25 percent of this unit.

Soil properties—

Permeability: Moderate above the fragipan, and slow or very slow in the fragipan and substratum
Available water capacity: Very low or low
Soil reaction: Very strongly acid to slightly acid above the fragipan, from strongly acid to neutral in the fragipan, and from moderately acid to moderately alkaline in the substratum

Water table: At the surface or to a depth of 0.5 foot from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas have been cleared and are used as pasture. Some areas support water-tolerant vegetation and trees. Some drained areas are used for cultivated crops or hay. This soil meets the requirements for hydric soils.

This soil is poorly suited to cultivated crops. Tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Tilling at the proper moisture content also minimizes compaction and clodding.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts root growth of some forage crops. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. If the pasture is grazed during wet periods, the surface layer can easily become compacted. Using proper stocking rates, selecting water-tolerant species for seeding, rotating livestock grazing, deferring grazing when the soil is wet, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. The soil is too wet for the construction of dwellings with basements without major modifications. Included areas of the somewhat poorly drained Volusia soils may be better sites for these dwellings.

Depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Building on raised coarse textured fill material and installing a drainage system help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable should be considered for locating septic tank absorption fields.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

78A—Hornell silt loam, 0 to 3 percent slopes

This soil is nearly level, moderately deep, and somewhat poorly drained. It is on broad flats and hilltops in areas where the topography is influenced by the underlying bedrock. Soft shale bedrock is at a depth of 20 to 40 inches. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 12 inches, light olive brown friable silty clay loam, with yellowish brown iron accumulations, and 5 percent channers
12 to 15 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 5 percent channers

15 to 28 inches, olive brown firm silty clay, with light olive gray iron depletions, and 5 percent channers

Substratum:
28 to 34 inches, grayish brown firm channery silty clay loam, with light olive brown iron accumulations and 25 percent channers
34 inches, soft shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, small areas of Orpark soils which have less clay than the Hornell soils, and small areas of Towerville soils which have less clay in the subsoil than the Hornell soils. Also included are small areas of soils that have bedrock at a depth of more than 40 inches, and small areas of Fremont soils which are very deep over bedrock, and have less clay in the subsoil than the Hornell soil. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, slow or very slow in the subsoil and substratum
Available water capacity: Low to moderate
Soil reaction: Extremely acid through strongly acid in the surface layer, and very strongly acid or strongly acid in the subsoil and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. Where drained, this soil meets the requirements for prime farmland.

Unless drained, this soil is moderately well suited to cultivated crops because of the seasonal wetness. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. If a drainage system is installed, the soil is suited to most of the crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems may be difficult because of the underlying bedrock. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of natural acidity and low fertility, the soil requires sufficient applications of fertilizer and lime to be highly productive.

This soil is well suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns of managing pasture. Grazing when the soil is wet causes soil compaction, restricts plant growth, and can deplete the stand of pasture grasses. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone, shrink-swell potential and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements and reduce the shrink-swell potential.

The depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce the wetness and the potential for frost action.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The shale bedrock generally can be ripped with a backhoe. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3w.

78B—Hornell silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and somewhat poorly drained. It is on broad flats and hilltops in areas where the topography is influenced by the underlying bedrock. Soft shale bedrock is at a depth of 20 to 40 inches. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 12 inches, light olive brown friable silty clay loam, with yellowish brown iron accumulations, and 5 percent channers
12 to 15 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 5 percent channers
15 to 28 inches, olive brown firm silty clay, with light olive gray iron depletions, and 5 percent channers

Substratum:
28 to 34 inches, grayish brown firm channery silty clay loam, with light olive brown iron accumulations and 25 percent channers
34 inches, soft shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, small areas of Orpark soils which have less clay than the Hornell soils, and small areas of Towerville soils which have less clay in the subsoil than the Hornell soils. Also included are small areas of soils that have bedrock at a depth of more than 40 inches, and small areas of Fremont soils which are very deep over bedrock and have less clay in the subsoil than the Hornell soil. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, slow or very slow in the subsoil and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid through strongly acid in the surface layer, and very strongly or strongly acid in the subsoil and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to cultivated crops. Seasonal wetness is the main management concern. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Erosion is a hazard on long slopes that are intensively cultivated. If a drainage system is installed, the soil is suited to most of the crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems may be difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of natural acidity and low fertility, the soil requires sufficient applications of fertilizer and lime to remain productive.

This soil is well suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns of managing pasture. Grazing when the soil is wet causes soil compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion and in puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone, shrink-swell potential and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements and reduce the shrink-swell potential.

The depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength and reduce the wetness and the potential for frost action.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The shale bedrock generally can be ripped with a backhoe. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3w.

78C—Hornell silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and somewhat poorly drained. It is on valley sides and hillsides in areas where the topography is influenced by the underlying bedrock. Soft shale bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent areas. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 12 inches, light olive brown friable silty clay loam, with yellowish brown iron accumulations, and 5 percent channers
12 to 15 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 5 percent channers
15 to 28 inches, olive brown firm silty clay, with light olive gray iron depletions, and 5 percent channers

Substratum:
28 to 34 inches, grayish brown firm channery silty clay loam, with light olive brown iron accumulations and 25 percent channers
34 inches, soft shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, small areas of Orpark soils which have less clay than the Hornell soils, and small areas of Towerville soils which have less clay in the subsoil than the Hornell soils. Also included are small areas of soils that have bedrock at a depth of more than 40 inches, and small areas of Fremont soils which are very deep over bedrock and have less clay in the subsoil than the Hornell soil. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, slow or very slow in the subsoil and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid in the surface layer, and very strongly or strongly acid in the subsoil and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to cultivated crops. Seasonal wetness is the main management concern. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Erosion is a serious hazard on slopes that are intensively cultivated. If a drainage system is installed, the soil is suited to most of the crops commonly grown in the county. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems may be difficult because of the underlying bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of natural acidity and low fertility, the soil requires sufficient applications of fertilizer and lime.

This soil is well suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns of managing pasture. Grazing when the soil is wet causes soil compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, shrink-swell potential, slope, and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements and reduce the shrink-swell potential. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength, and reduce the wetness and the potential for frost action. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The shale bedrock generally can be ripped with a backhoe. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3e.

78D—Hornell silt loam, 15 to 25 percent slopes

This soil is moderately steep, moderately deep, and somewhat poorly drained. It is on valley sides that commonly are dissected by V-shaped gullies. It is in areas where the topography is influenced by the underlying bedrock. Soft shale bedrock is at a depth of 20 to 40 inches. The soil receives runoff from the higher adjacent soils. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 12 inches, light olive brown friable silty clay loam, with yellowish brown iron accumulations, and 5 percent channers
12 to 15 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 5 percent channers
15 to 28 inches, olive brown firm silty clay, with light olive gray iron depletions, and 5 percent channers

Substratum:
28 to 34 inches, grayish brown firm channery silty clay loam, with light olive brown iron accumulations and 25 percent channers
34 inches, soft shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in seepage spots, and small areas of Orpark soils and Towerville soils which have less clay than the Hornell soil. Also included are small areas of the moderately well drained Schuyler soils which are very deep over bedrock and have less clay in the subsoil than the Hornell soil, small areas of Hudson soils which are very deep to bedrock, and small areas of soils that are similar to Hornell but have bedrock at a depth of more than 40 inches. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, slow or very slow in the subsoil and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid through strongly acid in the surface layer, and very strongly or strongly acid in the subsoil and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used as woodland. Some of the acreage is idle land that is reverting to woodland. A few small areas are used for hay and pasture.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the slope. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Intercepting and diverting runoff and subsurface seepage, establishing sod waterways, farming on the contour, and minimizing tillage reduce wetness and the hazard of erosion. The content of organic matter has been depleted, as a result of past erosion, and the soil tends to become cloddy if it is plowed when wet. Incorporating crop residue into the soil, growing cover crops, and tilling when the soil is at the proper moisture content help to maintain tilth and increase the content of organic matter. The slope and the presence of gullies in some areas limit the use of farm machinery.

This soil is moderately well suited to hay and pasture. Overgrazing and grazing when the soil is wet restrict plant growth and can damage pasture plants. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns. Because the soil is naturally acid, applications of lime and fertilizer are needed to improve the growth of most pasture plants.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps to control erosion and minimizes gullying along the trails and roads.

The depth to saturated zone, slope, shrink-swell potential and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The shale bedrock generally can be ripped with a backhoe. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements and reduce the shrink-swell potential. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems increase soil strength, and reduce the wetness and the potential for frost action. Land grading and building on the contour help to overcome the slope limitation.

The slope, depth to saturated zone, the restricted permeability, and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The shale bedrock generally can be ripped with a backhoe. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 4e.

78F—Hornell and Hudson soils, 35 to 50 percent slopes

This unit consists of very steep, moderately deep, somewhat poorly drained Hornell soils and very deep, moderately well drained Hudson soils. It is on valley sides that commonly are dissected by V-shaped gullies. Some areas consist mostly of Hornell soils, some of mostly Hudson soils, and some of both. Overall, this unit consists of 40 percent Hornell soils, 35 percent Hudson soils, and 25 percent other soils. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of the Hornell soils are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 12 inches, light olive brown friable silty clay loam, with yellowish brown iron accumulations, and 5 percent channers
12 to 15 inches, light olive brown firm silty clay loam, with strong brown iron accumulations and grayish brown iron depletions, and 5 percent channers
15 to 28 inches, olive brown firm silty clay, with light olive gray iron depletions, and 5 percent channers

Substratum:
28 to 34 inches, grayish brown firm channery silty clay loam, with light olive brown iron accumulations and 25 percent channers
34 inches, soft shale bedrock

The typical sequence, depth, and composition of the layers of the Hudson soils are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam

Subsurface:
7 to 11 inches, pale brown, friable silt loam

Subsoil:
11 to 16 inches, dark yellowish brown firm silty clay loam, with yellowish brown iron accumulations
16 to 25 inches, brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions

25 to 38 inches, dark yellowish brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
38 to 72 inches, brown firm silty clay with varves of silt and silty clay loam

Included in mapping are small areas of poorly drained soils along drainageways and in seepage spots, and small areas of Orpark soils which have less clay than the Hornell soil. Also included are small areas of Towerville soils which have less clay in the subsoil than Hornell soils, small areas of the moderately well drained Schuyler soils which are very deep over bedrock and have less clay in the subsoil than the Hornell soil, and small areas of soils that are similar to the Hornell soil but have bedrock at a depth of more than 40 inches. Included areas make up about 25 to 35 percent of this unit.

Soil properties of the Hornell soils—

Permeability: Moderate in the surface layer, slow or very slow in the subsoil and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid through strongly acid in the surface layer, and very strongly or strongly acid in the subsoil and substratum
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Soil properties Hudson soils—

Permeability: Moderate or moderately slow in the surface and subsurface layers, slow or very slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface and subsurface layers, from moderately acid to slightly alkaline in the subsoil, and from neutral to moderately alkaline in the substratum
Water table: Perched at a depth of 1.3 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is very severe and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high to low. The seasonal wetness in the Hornell soils increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails across the slope helps to control erosion and minimizes gullying along the roads and trails.

Construction is extremely difficult or impractical on this soil. The very steep slope and depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements and septic tank absorption fields. Extensive land shaping may be necessary to overcome the slope limitation. Erosion is a very serious hazard on construction sites. A more suitable site for these uses should be selected on a less sloping included or nearby soil.

The very steep slopes, shrink-swell potential, depth to saturated zone, and frost action are the main limitations if this soil is used as a site for local roads and streets.

Constructing roads on the contour or locating them on less sloping inclusions or adjacent areas will help to overcome the slope limitation. Providing a coarse grained subgrade will improve bearing strength and reduce frost action.

Erosion is very severe on construction sites. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

79B—Mongaup channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and well drained. It is on convex hilltops and side slopes in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 8 inches, strong brown very friable channery silt loam, with 15 percent channers
8 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 27 inches, brown friable channery silt loam, with 25 percent channers

Substratum:
27 inches, hard grayish sandstone and siltstone bedrock

Included in mapping are small areas of moderately well drained Ischua soils, well drained Franklinville soils where the bedrock is deeper than 40 inches below the surface, and Mongaup soils that do not have a channery silt loam surface layer. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded, but some areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Small woodlots are in some areas, and some of the acreage is idle land that is reverting to shrubs. This soil meets the requirements for prime farmland.

This soil is well suited to most of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. The growing season is shorter on this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of lime and fertilizer. Erosion may be a hazard if the soil is intensively cultivated on long slopes, and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to bedrock is the main limitation if this soil is used as a site for dwellings with basements. Hard bedrock can make excavation difficult and costly. Blasting may be necessary.

Depth to bedrock and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning in layout of roads and streets may help to overcome the depth to bedrock, and minimize excavation and blasting. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the limitation due to frost action.

Depth to bedrock is a limitation if this soil is used as a site for septic tank absorption fields. Hard bedrock can make excavation difficult and costly. Care is needed to prevent contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

79C—Mongaup channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and well drained. It is on convex areas on hilltops that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 8 inches, strong brown very friable channery silt loam, with 15 percent channers
8 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 27 inches, brown friable channery silt loam, with 25 percent channers

Substratum:
27 inches, hard grayish sandstone and siltstone bedrock

Included in mapping are small areas of moderately well drained Ischua soils, well drained Franklinville soils where the bedrock is deeper than 40 inches below the surface, and Mongaup soils that do not have a channery silt loam surface layer. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to shrubs. Some areas have been cleared and are used for row crops, alfalfa, hay or pasture, generally in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter on this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. Erosion is a serious hazard in intensively cultivated areas. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. Incorporating crop residue into the soil, minimizing tillage, including sod crops in the crop rotation, and growing cover crops help to maintain tilth and increase the content of organic matter. Crops respond well to applications of lime and fertilizer. Legumes respond especially well. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The depth to bedrock and slope are the main limitations if this soil is used as a site for dwellings with basements. Careful planning and design, extensive site preparation, and land shaping will help overcome the limitation due to slope. Excavation is difficult and costly. Blasting may be necessary. Careful site selection and planning can minimize the limitations due to bedrock.

Depth to bedrock, slope, and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning in layout of roads and streets and land shaping may help to overcome the limitation due to depth to bedrock and slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

Depth to bedrock is a limitation if this soil is used as a site for septic tank absorption fields. Hard bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

79D—Mongaup channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 8 inches, strong brown very friable channery silt loam, with 15 percent channers
8 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 27 inches, brown friable channery silt loam, with 25 percent channers

Substratum:
27 inches, hard grayish sandstone and siltstone bedrock

Included in mapping are small areas of moderately well drained Ischua soils, well drained Franklinville soils where the bedrock is deeper than 40 inches below the surface, and Mongaup soils that do not have a channery silt loam surface layer. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are used for hay or pasture. A small acreage is used for row crops.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the moderately steep slope. The growing season is shorter on this soil than for nearby valley soils. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope and depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land shaping may be necessary to overcome the slope. Hard bedrock can make excavation difficult and costly. Blasting may be necessary.

Slope, depth to bedrock, and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning in layout of roads and streets and land shaping may help to overcome depth to bedrock and slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

Depth to bedrock and slope are limitations if this soil is used as a site for septic tank absorption fields. Hard bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Extensive engineering, design modifications and land shaping are necessary to overcome the limitations imposed by slope.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

79E—Mongaup channery silt loam, 25 to 35 percent slopes

This soil is steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 8 inches, strong brown very friable channery silt loam, with 15 percent channers
8 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 27 inches, brown friable channery silt loam, with 25 percent channers

Substratum:
27 inches, hard grayish sandstone and siltstone bedrock

Included in mapping are small areas of moderately well drained Ischua soils, well drained Franklinville soils where the bedrock is deeper than 40 inches below the surface, and Mongaup soils that do not have a channery silt loam surface layer. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat. Some of the less sloping included areas are idle or are used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

This soil is poorly suited to pasture. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building skid trails and roads across the slope minimizes gullying along the trails and roads.

The slope and depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land shaping may be necessary to overcome the slope. Hard bedrock can make excavation difficult and costly. Blasting may be necessary.

Slope, depth to bedrock, and frost action are the main limitations if this soil is used as a site for local roads and streets. Carefully planning the layout of roads and streets and land shaping may help to overcome depth to bedrock and slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

Depth to bedrock and slope are limitations if this soil is used as a site for septic tank absorption fields. Hard bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Extensive engineering, design modifications, and land shaping are necessary to overcome the limitations imposed by slope.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

79F—Mongaup channery silt loam, 35 to 70 percent slopes

This soil is very steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 8 inches, strong brown very friable channery silt loam, with 15 percent channers
8 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 27 inches, brown friable channery silt loam, with 25 percent channers

Substratum:
27 inches, hard grayish sandstone and siltstone bedrock

Included in mapping are small areas of moderately well drained Ischua soils, well drained Franklinville soils where the bedrock is deeper than 40 inches below the surface, and Mongaup soils that do not have a channery silt loam surface layer. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is very severe and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails across the slope helps to control erosion and minimizes gullying along the trails and roads.

Construction is extremely difficult or impractical on this soil. The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements, local roads and streets, and septic tank absorption fields. Extensive land shaping may be necessary to overcome the slope. Hard bedrock can make excavation difficult and costly. Blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Extensive engineering, design modifications and land shaping are necessary to overcome the limitations imposed by slope.

Erosion is a very serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

80A—Fremont silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on flat hilltops that receive little or no runoff and on upland benches that receive runoff from the higher adjacent soils. Individual areas are circular or irregularly shaped. They commonly range from 5 to 50 acres in size, but some are as large as 100 acres or more.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 9 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:

9 to 16 inches, brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers

16 to 28 inches, olive brown firm silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers

28 to 39 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:

39 to 72 inches, dark grayish brown firm channery silt loam, with yellowish brown iron accumulations and gray iron depletions, and 20 percent channers

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways, Volusia soils which have a fragipan, and Busti soils which have less clay in the subsoil than the Fremont soils. Also included are small areas of Orpark soils which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or moderate in the subsoil, slow or very slow in the substratum

Available water capacity: Moderate or high

Soil reaction: Very strongly acid to moderately acid above a depth of 40 inches, and from strongly acid to neutral at depths below 40 inches

Water table: At a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most areas are used for small grain, corn, or hay grown in support of dairy farming. Much of the acreage is idle land or is farmed at a low level of intensity. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is more difficult on this soil than on the more sloping adjacent Fremont soils. The soil tends to become cloddy if plowed when wet. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. Wetness can be reduced by providing closely spaced tile and open-ditch drainage systems. Maintaining good tilth is a management concern in intensively cultivated areas. Crops respond well to sufficient applications of lime and fertilizer. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content, help to maintain tilth and the content of organic matter.

This soil is well suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet restrict plant growth and can damage the pasture plants. Grazing when the soil is wet also results in compaction and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

80B—Fremont silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on broad hilltops and valley sides that receive a considerable amount of runoff from the higher adjacent soils. Individual areas are oblong or rectangular. They commonly are 5 to 75 acres in size, but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
9 to 16 inches, brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers
16 to 28 inches, olive brown firm silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers
28 to 39 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
39 to 72 inches, dark grayish brown firm channery silt loam, with yellowish brown iron accumulations and gray iron depletions, and 20 percent channers

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways, Volusia soils which have a fragipan, and Busti soils which have less clay in the subsoil than the Fremont soils. Also included are small areas of Orpark soils which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or moderate in the subsoil, slow or very slow in the substratum
Available water capacity: Moderate or high

Soil reaction: Very strongly acid to moderately acid above a depth of 40 inches, and from strongly acid to neutral at depths below 40 inches
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Some areas are used for small grain, corn, or hay grown in support of dairy farming. A large area is idle land or is farmed at a low level of intensity. Some areas are wooded.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. The soil tends to become cloddy if plowed when wet. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. If drained and protected from erosion, this soil is suited to the crops commonly grown in the county. Incorporating crop residue into the soil, growing cover crops, and tilling only when the soil is at the proper moisture content help to maintain tilth and the content of organic matter. Crops respond well to sufficient applications of lime and fertilizer.

This soil is well suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet restrict plant growth and can damage the pasture plants. Grazing when the soil is wet can cause surface compaction, restrict plant growth, deplete the stand of pasture grasses, and increase the hazard of erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

80C—Fremont silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides and valley sides that receive a considerable amount of runoff from the higher adjacent soils. Individual areas are oblong or rectangular, and commonly are from 10 to 75 acres in size, but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
9 to 16 inches, brown friable silt loam, with strong brown iron accumulations and gray iron depletions, and 10 percent channers
16 to 28 inches, olive brown firm silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 10 percent channers
28 to 39 inches, olive brown firm channery silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
39 to 72 inches, dark grayish brown firm channery silt loam, with yellowish brown iron accumulations and gray iron depletions, and 20 percent channers

Included in mapping are small areas of the poorly drained Ashville soils in slight depressions and along drainageways, Volusia soils which have a fragipan, and Busti soils which have less clay in the subsoil than the Fremont soils. Also included are small areas of Orpark soils which have bedrock at a depth of 20 to 40 inches, and small areas of soils that have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow or moderate in the subsoil, slow or very slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid above a depth of 40 inches, and from strongly acid to neutral at depths below 40 inches
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Some areas are farmed at a low level of intensity. These areas are used for small grain, corn, or hay grown in support of dairy farming. A large acreage is woodland or is idle land that is reverting to woodland.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. The soil tends to become cloddy if plowed when wet. If drained and protected from erosion, it is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil and substratum. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter. Crops respond well to sufficient applications of lime and fertilizer.

This soil is well suited to water-tolerant hay and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, thus resulting in serious erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, and slope are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse textured fill material help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

81B—Varysburg gravelly silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on outwash plains, and on undulating terraces along lower valley sides. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 50 acres in size, but some are as large as several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark grayish brown gravelly silt loam with 15 percent gravel

Subsurface layer:
5 to 13 inches, yellowish brown friable gravelly loam with 20 percent gravel

Subsoil:
13 to 22 inches, strong brown friable gravelly silt loam, with 30 percent gravel
22 to 28 inches, yellowish brown friable very gravelly loam, with brown and strong brown iron accumulations, and 35 percent gravel
28 to 33 inches, brown friable very gravelly loam, with 50 percent gravel
33 to 48 inches, olive brown firm silty clay loam, with brown iron accumulations, and up to 2 percent gravel

Substratum:
48 to 72 inches, olive brown firm silty clay, with varved silt and clay

Included in mapping are small areas of poorly drained soils in slight depressions, along drainageways and in seepage spots, and soils that have a silt loam surface layer. Also included are small areas of Chenango, Hudson and Valois soils. Chenango soils are a common inclusion on higher rises and knolls with the clayey deposits at a depth of more than 60 inches; the Hudson soils do not have a gravelly surface mantle;

and the Valois soils do not have the underlying clay deposits. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the gravelly mantle, and very slow in the clayey lacustrine material
Available water capacity: Low or moderate
Soil reaction: Strongly acid or moderately acid in the surface layer to upper part of the subsoil, and slightly acid to moderately alkaline in the lower part of the subsoil and substratum
Water table: At a depth 1.5 to 2.8 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas. This soil meets the requirements for prime farmland.

This soil is well suited to all cultivated crops commonly grown in the county. Seasonal wetness in the early spring and fall may delay tillage and harvesting activities. It can be used intensively for row crops, though erosion may be a hazard on long slopes and the more sloping parts of this unit. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Small rock fragments on the surface may be a limitation. The rock fragments may interfere with the planting of some fine-seeded crops, and can increase the wear on machinery. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to sufficient applications of lime and fertilizer. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and rotating crops improve tilth, reduce erosion, and help to maintain the content of organic matter. Increasing the content of organic matter improves the available water capacity of the soil.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Depth to saturated zone and shrink-swell potential are main limitations if this soil is used as a site for dwellings with basements. If suitable outlets can be found, installing drainage tile along the footings of the foundation, and sealing the foundation walls can help overcome these limitations.

Frost action and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the wetness and the potential for frost action.

The depth to saturated zone and restricted permeability in the clayey subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps overcome the restricted permeability. Excavations are subject to slipping or slumping, particularly when the soil is wet.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

81C—Varysburg gravelly silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on dissected outwash plains, and on undulating terraces along lower valley sides. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark grayish brown gravelly silt loam with 15 percent gravel

Subsurface layer:
5 to 13 inches, yellowish brown friable gravelly loam with 20 percent gravel

Subsoil:
13 to 22 inches, strong brown friable gravelly silt loam, with 30 percent gravel
22 to 28 inches, yellowish brown friable very gravelly loam, with brown and strong brown iron accumulations, and 35 percent gravel
28 to 33 inches, brown friable very gravelly loam, with 50 percent gravel
33 to 48 inches, olive brown firm silty clay loam, with brown iron accumulations, and up to 2 percent gravel

Substratum:
48 to 72 inches, olive brown firm silty clay, with varved silt and clay

Included in mapping are small areas of poorly drained soils in slight depressions, along drainageways and in seepage spots, and soils that have a silt loam surface layer. Also included are small areas of Chenango, Hudson and Valois soils. Chenango soils are a common inclusion on higher rises and knolls with the clayey deposits at a depth of more than 60 inches; the Hudson soils do not have a gravelly surface mantle; and the Valois soils do not have the underlying clay deposits. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the gravelly mantle, and very slow in the clayey lacustrine material
Available water capacity: Low or moderate
Soil reaction: Strongly acid or moderately acid in the surface layer to upper part of the subsoil, and slightly acid to moderately alkaline in the lower part of the subsoil and substratum
Water table: At a depth of 1.5 to 2.8 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for cultivated crops. Scattered woodlots are in a few areas, and some of the acreage is idle land.

This soil is moderately well suited to most of the crops commonly grown in the county. The slope, erosion, droughtiness, and gravel on the surface are the main limitations. The gravel may interfere with the planting of some crops and cause excessive wear on machinery. Erosion is serious hazard on long slopes and in intensively cultivated areas. Farming on the contour, stripcropping, and establishing grassed waterways help to control erosion. Incorporating crop residue into the soil, minimizing tillage, growing cover crops, and including sod crops in the cropping sequence help to maintain tilth and reduce the hazard of erosion. These practices also increase the content of organic matter, and thus improve the available water capacity of the soil. Deep-rooted perennial crops, such as alfalfa, grow especially well. Crops respond well to applications of lime and fertilizer. In some years droughtiness restricts crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth, especially during long dry periods, and can increase the hazard of erosion. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are important management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

Depth to saturated zone, slope, and shrink-swell potential are main limitations if this soil is used as a site for dwellings with basements. If suitable outlets can be found, installing drainage tile along the footings of the foundation, and sealing the foundation walls can help overcome these limitations. Land grading and shaping help to overcome the slope limitation.

Frost action, slope, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the wetness and the potential for frost action. Land grading and shaping help to overcome the slope limitation.

The depth to saturated zone and restricted permeability in the clayey subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps overcome the restricted permeability. Excavations are subject to slipping or slumping, particularly when the soil is wet.

Erosion is a hazard on construction sites. Excavations in toeslopes can cause massive slips or slumps, particularly when the soil is wet. Reseeding disturbed areas as soon as possible helps prevent erosion and reduces the hazard of slides or slumps. Interceptor drains may be needed to divert excess water from potential slump or slide areas.

The capability subclass is 3e.

81D—Varysburg gravelly silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on dissected outwash plains, and on hilly outwash plains on terrace fronts. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 35 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark grayish brown gravelly silt loam with 15 percent gravel

Subsurface layer:
5 to 13 inches, yellowish brown friable gravelly loam with 20 percent gravel

Subsoil:
13 to 22 inches, strong brown friable gravelly silt loam, with 30 percent gravel
22 to 28 inches, yellowish brown friable very gravelly loam, with brown and strong brown iron accumulations, and 35 percent gravel

28 to 33 inches, brown friable very gravelly loam, with 50 percent gravel
33 to 48 inches, olive brown firm silty clay loam, with brown iron accumulations, and up to 2 percent gravel

Substratum:
48 to 72 inches, olive brown firm silty clay, with varved silt and clay

Included in mapping are small areas of poorly drained soils in slight depressions, along drainageways and in seepage spots, and soils that have a silt loam surface layer. Also included are small areas of Chenango, Hudson, and Valois soils. Chenango soils are a common inclusion on higher rises and knolls with the clayey deposits at a depth of more than 60 inches; the Hudson soils do not have a gravelly surface mantle; and the Valois soils do not have the underlying clay deposits. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the gravelly mantle, and very slow in the clayey lacustrine material
Available water capacity: Low or moderate
Soil reaction: Strongly acid or moderately acid in the surface layer to upper part of the subsoil, and slightly acid to moderately alkaline in the lower part of the subsoil and substratum
Water table: At a depth of 1.5 to 2.8 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are used for hay, pasture or row crops.

This soil is poorly suited to cultivated crops. The slope, the hazard of erosion, and droughtiness are the main management concerns. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness restricts crop growth.

This soil is moderately well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth, and can increase the hazard of erosion. Deep-rooted legumes can be grown, but applications of lime and fertilizer are required to maintain the quality of stands, and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are important management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

Depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. If suitable outlets can be found, installing drainage tile along the footings of the foundation, and sealing the foundation walls can help overcome these limitations. Land grading and shaping help to overcome the slope limitation.

Slope, frost action, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the wetness and the potential for frost action. Land grading and shaping help to overcome the slope limitation.

The depth to saturated zone, slope, and restricted permeability in the clayey subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness. Extensive land modification is needed to overcome the slope limitations. Excavations are subject to slipping or slumping, particularly when the soil is wet. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adding permeable fill material helps overcome the restricted permeability.

Erosion is a hazard on construction sites. Excavations in toeslopes can cause massive slips or slumps, particularly when the soil is wet. Reseeding disturbed areas as soon as possible helps prevent erosion and reduces the hazard of slides or slumps. Interceptor drains may be needed to divert excess water from potential slump or slide areas.

The capability subclass is 4e.

81E—Varysburg gravelly silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and moderately well drained. It is on dissected outwash plains, and on terrace fronts. Individual areas are elongated or irregularly shaped. They commonly range from 5 to 45 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 5 inches, dark grayish brown gravelly silt loam with 15 percent gravel

Subsurface layer:
5 to 13 inches, yellowish brown friable gravelly loam with 20 percent gravel

Subsoil:
13 to 22 inches, strong brown friable gravelly silt loam, with 30 percent gravel
22 to 28 inches, yellowish brown friable very gravelly loam, with brown and strong brown iron accumulations, and 35 percent gravel
28 to 33 inches, brown friable very gravelly loam, with 50 percent gravel
33 to 48 inches, olive brown firm silty clay loam, with brown iron accumulations, and up to 2 percent gravel

Substratum:
48 to 72 inches, olive brown firm silty clay, with varved silt and clay

Included in mapping are small areas of poorly drained soils in slight depressions, along drainageways and in seepage spots, and soils that have a silt loam surface layer. Also included are small areas of Chenango, Hudson and Valois soils. Chenango soils are a common inclusion on higher rises and knolls with the clayey deposits at a depth of more than 60 inches; the Hudson soils do not have a gravelly surface mantle; and the Valois soils do not have the underlying clay deposits. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid in the gravelly mantle, and very slow in the clayey lacustrine material

Available water capacity: Low or moderate
Soil reaction: Strongly acid or moderately acid in the surface layer to upper part of the subsoil, and slightly acid to moderately alkaline in the lower part of the subsoil and substratum
Water table: At a depth of 1.5 to 2.8 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used as woodland and wildlife habitat. Some of the acreage is idle land, or is used as pasture.

This soil is not suited to cultivated crops or hay because of the steep slope and the very severe hazard of erosion. Operating farm equipment is very difficult and hazardous because of the slope. A plant cover is needed to control runoff.

The suitability of this soil for pasture is limited. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

Depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. If suitable outlets can be found, installing drainage tile along the footings of the foundation, and sealing the foundation walls can help overcome these limitations. Land grading and shaping help to overcome the slope limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

Slope, frost action, and depth to saturated zone are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the wetness and the potential for frost action. Extensive land grading and shaping help to overcome the slope limitation.

The depth to saturated zone, slope, and restricted permeability in the clayey subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness. Excavations are subject to slipping or slumping, particularly when the soil is wet. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitations. Less sloping areas should be considered for this use.

Erosion is a hazard on construction sites. Excavations in toeslopes can cause massive slips or slumps, particularly when the soil is wet. Reseeding disturbed areas as soon as possible helps prevent erosion and reduces the hazard of slides or slumps. Interceptor drains may be needed to divert excess water from potential slump or slide areas.

The capability subclass is 6e.

82F—Rock outcrop-Manlius complex, 35 to 70 percent slopes

This unit consists of rock ledges and a very steep, moderately deep, well drained Manlius soil on the nearly perpendicular walls of gorges. The height of the walls, or the depth of most of gorges, ranges from 50 to more than 200 feet. Most areas occur as elongated, narrow strips. They commonly range from 20 to 75 acres in size, but some are as large as 200 acres or more.

Rock outcrop makes up 50 percent of the unit; Manlius soil makes up 30 percent. The Rock outcrop and Manlius soil occur in such an intricate pattern that it was not practical to separate them at the scale used in mapping.

The typical sequence, depth, and composition of the layers of the Manlius soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 12 inches, brown friable channery silt loam, with 30 percent channers
12 to 23 inches, yellowish brown friable very channery silt loam, with 40 percent channers

Substratum:
23 to 34 inches, brown friable very channery silt loam, with 50 percent channers
34 inches, very dark grayish brown shale bedrock

Included in mapping are small areas of soils that have bedrock at a depth of less than 20 inches or more than 40 inches. Also included are small areas of moderately well drained Towerville soils, and small narrow areas of Udifluvents and Fluvaquents on the flood plains along the streams that dissect this unit. Included areas make up about 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid through moderately acid in the surface layer and subsoil, and very strongly acid through slightly acid in the substratum
Water table: At a depth greater than 6 feet
Depth to bedrock: 20 to 40 inches

All areas of this unit, except for those on exposed rock walls, support natural vegetation consisting of trees and brush. Some small trees and brush grow in the crevices of the rocks.

This unit has no potential for farming or urban uses because of the exposed bedrock and very steep slopes. The gorges have aesthetic value and can be used as scenic overlooks. Some areas are excellent sites for viewing geologic strata. Scattered stands of timber grow in some areas, but managing the stands is impractical because of the slope.

The capability subclass is 7s.

84B—Elko silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on convex areas of hilltops that receive little or no runoff from higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray silt loam with 10 percent channers

Subsurface:
3 to 6 inches, grayish brown very friable loam, with 10 percent channers

Subsoil:
6 to 19 inches, strong brown very friable channery silt loam, with 15 percent channers
19 to 26 inches, yellowish brown friable channery loam, with strong brown and pale brown iron accumulations and light brownish gray iron depletions, and 15 percent channers
26 to 42 inches, yellowish brown very firm channery silt loam, with strong brown and pale brown iron accumulations and light brownish gray iron depletions, and 30 percent channers
42 to 64 inches, brown very firm very channery loam, with strong brown iron accumulations and light brownish gray iron depletions, and 35 percent channers

Substratum:
64 to 72 inches, yellowish brown firm extremely channery loam, with strong brown iron accumulations and gray iron depletions, and 60 percent channers

Included in mapping are small areas of somewhat poorly drained soils along drainageways and in seepage spots, and other somewhat poorly drained soils which do not have a fragipan. Also included are small areas of Carrollton, Eldred, and Onoville soils; Carrollton soils have bedrock within 40 inches, Onoville soils occur on colluvial side slopes, and Eldred soils lack the fragipan in the subsoil. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate above the fragipan, slow or moderately slow in the fragipan and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid through strongly acid
throughout the profile
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. Some areas are cultivated, or are in hay or pasture.

This soil is well suited to cultivated crops, but the growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes in intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for tank absorption fields. Extensive engineering and design modifications are needed if onsite septic tank absorption fields are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

84C—Elko silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on convex areas of hilltops and upper side slopes that receive little or no runoff from higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 45 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray silt loam with 10 percent channers

Subsurface:
3 to 6 inches, grayish brown very friable loam, with 10 percent channers

Subsoil:
6 to 19 inches, strong brown very friable channery silt loam, with 15 percent channers
19 to 26 inches, yellowish brown friable channery loam, with strong brown and pale brown iron accumulations and light brownish gray iron depletions, and 15 percent channers
26 to 42 inches, yellowish brown very firm channery silt loam, with strong brown and pale brown iron accumulations and light brownish gray iron depletions, and 30 percent channers
42 to 64 inches, brown very firm very channery loam, with strong brown iron accumulations and light brownish gray iron depletions, and 35 percent channers

Substratum:
64 to 72 inches, yellowish brown firm extremely channery loam, with strong brown iron accumulations and gray iron depletions, and 60 percent channers

Included in mapping are small areas of somewhat poorly drained soils along drainageways and in seepage spots, and other somewhat poorly drained soils which do not have a fragipan. Also included are small areas of Carrollton, Eldred, and Onoville soils; Carrollton soils have bedrock within 40 inches, Onoville soils occur on colluvial side slopes, and Eldred soils lack the fragipan in the subsoil. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate above the fragipan, slow or moderately slow in the fragipan and substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid through strongly acid
throughout the profile
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. Some areas are cultivated, or are in hay or pasture.

This soil is moderately well suited to cultivated crops. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard in intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if septic tank absorption fields are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

85B—Onoville silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on hillsides and lower colluvial side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:

8 to 16 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, 5 percent channers

16 to 22 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

22 to 32 inches, yellowish brown firm channery loam, with strong brown iron accumulations and light gray iron depletions, and 20 percent channers

32 to 59 inches, yellowish brown very firm channery clay loam, with strong brown iron accumulations and gray iron depletions, and 25 percent channers

59 to 65 inches, yellowish brown firm channery silty clay loam, with light gray iron depletions, and 20 percent channers

Substratum:

65 to 72 inches, variegated dark grayish brown and yellowish brown firm channery clay loam, with pinkish gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Shongo soils along drainageways and in seepage spots, and other somewhat poorly drained soils which do not have a fragipan. Also included are small areas of well drained Kinzua soils on slight rises and knolls; Eldred soils which lack the fragipan; and Onoville soils that have more channers in the surface layer. Included areas make up about 15 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or moderately slow in the fragipan and substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid or strongly acid throughout the solum, and very strongly acid to moderately acid in the substratum

Water table: Perched at a depth of 1.2 to 2.0 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are cultivated for row crops grown in support of dairy farming, or are in hay or pasture.

This soil is well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes in intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion.

Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

85C—Onoville silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and colluvial side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are rectangular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 16 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, 5 percent channers
16 to 22 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
22 to 32 inches, yellowish brown firm channery loam, with strong brown iron accumulations and light gray iron depletions, and 20 percent channers
32 to 59 inches, yellowish brown very firm channery clay loam, with strong brown iron accumulations and gray iron depletions, and 25 percent channers
59 to 65 inches, yellowish brown firm channery silty clay loam, with light gray iron depletions, and 20 percent channers

Substratum:
65 to 72 inches, variegated dark grayish brown and yellowish brown firm channery clay loam, with pinkish gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Shongo soils along drainageways and in seepage spots, and other soils that are somewhat poorly drained which do not have a fragipan. Also included are small areas of well drained Kinzua soils on slight rises and knolls; Eldred soils which lack the fragipan; and Onoville soils that have more channers in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or moderately slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid or strongly acid
throughout the solum, and very strongly acid to moderately
acid in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. Some areas are cultivated, or are in hay or pasture.

This soil is moderately well suited to cultivated crops, but the growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Erosion is a hazard on intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops. Sufficient applications of lime are needed if legumes are to be established.

This soil is well suited to pasture. Overgrazing is the main concern in managing pasture because it can damage pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and severe erosion. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, slope, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations on sites for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

85D—Onoville silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on valley sides and colluvial side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong and narrow, and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 16 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, 5 percent channers
16 to 22 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
22 to 32 inches, yellowish brown firm channery loam, with strong brown iron accumulations and light gray iron depletions, and 20 percent channers
32 to 59 inches, yellowish brown very firm channery clay loam, with strong brown iron accumulations and gray iron depletions, and 25 percent channers
59 to 65 inches, yellowish brown firm channery silty clay loam, with light gray iron depletions, and 20 percent channers

Substratum:
65 to 72 inches, variegated dark grayish brown and yellowish brown firm channery clay loam, with pinkish gray iron depletions, and 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Shongo soils along drainageways and in seepage spots, and other soils that are somewhat poorly drained which do not have a fragipan. Also included are small areas of well drained Kinzua soils on slight rises and knolls; Eldred soils which lack the fragipan; and Onoville soils that have channery fragments in the surface layer. Included areas make up about 15 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or moderately slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid or strongly acid
throughout the solum, and very strongly acid to moderately
acid in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May

Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to brush. Some areas are used for hay or pasture.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The slope limits the use of farm equipment. Tillage is slightly delayed in spring because of the wetness. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. A sufficient amount of lime and fertilizer is needed to maintain good crop growth.

This soil is moderately well suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Slope, depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The slope, depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption field, and adding permeable fill material help overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

86B—Eldred silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray silt loam with 10 percent channers

Subsoil:
3 to 9 inches, brown friable silt loam, with 10 percent channers
9 to 14 inches, pale brown friable silty clay loam, with brownish yellow iron accumulations, and 10 percent channers
14 to 22 inches, yellowish brown firm channery silty clay loam, with brownish yellow and strong brown iron accumulations, and 15 percent channers
22 to 42 inches, light olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

Substratum:
42 to 72 inches, yellowish brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

Included in mapping are small areas of somewhat poorly drained soils along drainageways and in seepage spots. Also included are small areas of well drained Kinzua soils on slight rises and knolls; well drained Carrollton soils which have bedrock within 40 inches of the surface; and, moderately well drained Onoville soils that have a fragipan. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow in the lower part of the subsoil, and moderately slow or slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid through extremely acid
throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. Some areas are cultivated or are in hay or pasture.

This soil is well suited to cultivated crops, but the growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes in intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

86C—Eldred silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray silt loam with 10 percent channers

Subsoil:
3 to 9 inches, brown friable silt loam, with 10 percent channers
9 to 14 inches, pale brown friable silty clay loam, with brownish yellow iron accumulations, and 10 percent channers
14 to 22 inches, yellowish brown firm channery silty clay loam, with brownish yellow and strong brown iron accumulations, and 15 percent channers
22 to 42 inches, light olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

Substratum:
42 to 72 inches, yellowish brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

Included in mapping are small areas of somewhat poorly drained soils along drainageways and in seepage spots. Also included are small areas of well drained Kinzua soils on slight rises and knolls; well drained Carrollton soils which have bedrock within 40 inches of the surface; and, moderately well drained Onoville soils that have a fragipan. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow in the lower part of the subsoil, and moderately slow or slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid through extremely acid throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. Some areas are cultivated or are in hay or pasture.

This soil is moderately well suited to cultivated crops, but the growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes in intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface

compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, slope, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

86D—Eldred silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on valley sides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 35 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark gray silt loam with 10 percent channers

Subsoil:
3 to 9 inches, brown friable silt loam, with 10 percent channers
9 to 14 inches, pale brown friable silty clay loam, with brownish yellow iron accumulations, and 10 percent channers
14 to 22 inches, yellowish brown firm channery silty clay loam, with brownish yellow and strong brown iron accumulations, and 15 percent channers
22 to 42 inches, light olive brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 25 percent channers

Substratum:
42 to 72 inches, yellowish brown firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

Included in mapping are small areas of somewhat poorly drained soils along drainageways and in seepage spots. Also included are small areas of well drained Kinzua soils on slight rises and knolls; well drained Carrollton soils which have bedrock within 40 inches of the surface; and, moderately well drained Onoville soils that have a fragipan. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and upper part of the subsoil, and moderately slow in the lower part of the subsoil, and moderately slow or slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Strongly acid through extremely acid throughout the profile
Water table: At a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland. Some areas are idle land that is reverting to brush. A few areas are used for hay or pasture.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. The slope limits the use of farm equipment. Tillage is slightly delayed in spring because of the wetness. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Applying a sufficient amount of lime and fertilizer is needed to maintain good crop growth.

This soil is generally better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Slope, depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, the slope, and the restricted permeability in the lower subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption field, and adding permeable fill material help overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

87B—Shongo silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on hillsides, lower colluvial side slopes, and concave toe slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 5 percent channers
14 to 24 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
24 to 45 inches, grayish brown very firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers
45 to 56 inches, light olive brown firm channery silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 30 percent channers
56 to 72 inches, light olive brown firm channery silty clay loam, with 35 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways, and Ivory soils which do not have a fragipan and have more clay in the subsoil than the Shongo soil. Also included are small areas of moderately well drained Onoville soils on slight rises and knolls; Frewsburg soils which have bedrock within a depth of 40 inches; and, small areas of Shongo soils that have a channery surface layer. Small areas that have a stony surface are also included, especially along drainageways. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and upper subsoil, and moderately slow or slow in the fragipan and substratum
Available water capacity: Low or moderate
Soil reaction: Very strongly acid through moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland, or is idle land reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. These areas generally are farmed at a low level of intensity.

This soil is moderately well suited to cultivated crops. The growing season is shorter than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in the fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and shrink-swell potential are the main limitations on sites for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field, reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

87C—Shongo silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained.It is on hillsides, lower colluvial side slopes, and concave toe slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:

6 to 14 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 5 percent channers

14 to 24 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers

24 to 45 inches, grayish brown very firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

45 to 56 inches, light olive brown firm channery silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 30 percent channers

56 to 72 inches, light olive brown firm channery silty clay loam, with 35 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways; and Ivory soils which have more clay in the subsoil than the Shongo soil. Also included are small areas of moderately well drained Onoville soils on slight rises and knolls; Frewsburg soils which have bedrock within a depth of 40 inches; and, small areas of Shongo soils that have a channery surface layer. Small areas that have a stony surface are also included, especially along drainageways. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and upper subsoil, and moderately slow or slow in the fragipan and substratum
Available water capacity: Low or moderate
Soil reaction: Very strongly acid through moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland, or is idle land reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. These areas generally are farmed at a low level of intensity.

This soil is moderately well suited to cultivated crops. The growing season is shorter than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field, reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

88A—Ivory silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and somewhat poorly drained. It is on broad hilltops and benches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are circular or oblong, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable channery silt loam, with strong brown iron accumulations, and 15 percent channers
14 to 24 inches, yellowish brown friable channery silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers
24 to 38 inches, brown friable channery silty clay, with strong brown iron accumulations and gray iron depletions, and 25 percent channers

Substratum:
38 to 48 inches, gray, brown and strong brown firm channery silty clay, with 30 percent channers
48 to 72 inches, gray, brown, and strong brown channery silty clay loam, with 25 percent channers

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Frewsburg soils which have bedrock at a depth of 20 to 40 inches. Also included are small areas of moderately well drained Eldred soils on higher knolls, and small areas of Shongo soils which have a fragipan and less clay than the Ivory soils. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow in the surface layer and upper subsoil, slow in the lower subsoil and substratum
Available water capacity: Moderate to high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. Where drained, this soil meets the requirements for prime farmland.

Unless drained, this soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Interceptor drains can divert runoff, and the tile and open-ditch drainage systems can remove excess water. Subsurface drains should be closely spaced because of the restricted permeability in the subsoil. The soil is subject to compaction if it is tilled when wet. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of natural acidity and low fertility, the soil requires sufficient applications of lime and fertilizer.

This soil is well suited to water-tolerant grasses and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, depletes the stand of pasture grasses, and increases the hazard of erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the high clay content.

The capability subclass is 3w.

88B—Ivory silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on broad hilltops and side slopes, and concave toeslopes. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are circular or oblong, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:

6 to 14 inches, yellowish brown friable channery silt loam, with strong brown iron accumulations, and 15 percent channers

14 to 24 inches, yellowish brown friable channery silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

24 to 38 inches, brown friable channery silty clay, with strong brown iron accumulations and gray iron depletions, and 25 percent channers

Substratum:

38 to 48 inches, gray, brown and strong brown firm channery silty clay, with 30 percent channers

48 to 72 inches, gray, brown, and strong brown channery silty clay loam, with 25 percent channers

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Frewsburg soils which have bedrock at a depth of 20 to 40 inches. Also included are small areas of moderately well drained Eldred soils on higher knolls, and small areas of Shongo soils which have a fragipan and less clay than the Ivory soils. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow in the surface layer and upper subsoil, slow in the lower subsoil and
substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Erosion is a hazard in intensively cultivated areas. Interceptor drains can divert runoff, and the tile and open-ditch drainage systems can remove excess water. Subsurface drains should be closely spaced because of the restricted permeability in the clayey subsoil. Tilling only when the soil is at the proper moisture content minimizes the surface crusting and clodding. Contour farming and stripcropping in combination with diversions or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth, increase the content of organic matter and minimize crusting and clodding. Because of natural acidity and low fertility, the soil requires sufficient applications of lime and fertilizer.

This soil is well suited to water-tolerant grasses and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, depletes the stand of pasture grasses, and increases the hazard of erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone and the restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the high clay content.

The capability subclass is 3w.

88C—Ivory silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on side slopes and concave toeslopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are circular or oblong, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:

6 to 14 inches, yellowish brown friable channery silt loam, with strong brown iron accumulations, and 15 percent channers

14 to 24 inches, yellowish brown friable channery silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

24 to 38 inches, brown friable channery silty clay, with strong brown iron accumulations and gray iron depletions, and 25 percent channers

Substratum:

38 to 48 inches, gray, brown and strong brown firm channery silty clay, with 30 percent channers

48 to 72 inches, gray, brown, and strong brown channery silty clay loam, with 25 percent channers

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions and small areas of Frewsburg soils which have bedrock at a depth of 20 to 40 inches. Also included are small areas of moderately well drained Eldred soils on higher knolls, and small areas of Shongo soils that have a fragipan and less clay than the Ivory soils. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow in the surface layer and upper subsoil, slow in the lower subsoil and substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid to moderately acid throughout the profile
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Interceptor drains can divert runoff, and the tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the slowly permeable, clayey subsoil. Tilling only when the soil is at the proper moisture content minimizes the surface crusting and clodding. Erosion is a hazard in intensively cultivated areas. Contour farming and stripcropping in combination with diversions or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth, increase the content of organic matter and minimize crusting and clodding. Because of natural acidity and low fertility, the soil requires sufficient applications of lime and fertilizer.

This soil is well suited to water-tolerant grasses and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, depletes the stand of pasture grasses, and increases the hazard of erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to increase soil strength and reduce the seasonal wetness. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3e.

88D—Ivory silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and somewhat poorly drained. It is on side slopes and concave toeslopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are circular or oblong, and range from 5 to 25 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:

6 to 14 inches, yellowish brown friable channery silt loam, with strong brown iron accumulations, and 15 percent channers

14 to 24 inches, yellowish brown friable channery silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

24 to 38 inches, brown friable channery silty clay, with strong brown iron accumulations and gray iron depletions, and 25 percent channers

Substratum:

38 to 48 inches, gray, brown and strong brown firm channery silty clay, with 30 percent channers

48 to 72 inches, gray, brown, and strong brown channery silty clay loam, with 25 percent channers

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Frewsburg soils which have bedrock at a depth of 20 to 40 inches. Also included are small areas of moderately well drained Eldred soils on higher knolls, and small areas of Shongo soils that have a fragipan and less clay than the Ivory soils. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow in the surface layer and upper subsoil, slow in the lower subsoil and substratum

Available water capacity: Moderate or high

Soil reaction: Very strongly acid to moderately acid throughout the profile

Water table: Perched at a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland. Some areas are idle land that is reverting to brush. A few areas are used for hay or pasture.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. The slope limits the use of farm equipment. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Sufficient amounts of lime and fertilizer are needed to maintain good crop growth.

This soil is generally better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to increase soil strength and reduce the potential for frost action. Installing roadside drainage systems reduces the wetness. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, the slope, and the restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Land grading and building on the contour help to overcome the slope. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. Recompacting this soil after it has been disturbed commonly is difficult because of the high clay content.

The capability subclass is 4e.

89B—Portville silty clay loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on hillsides, lower colluvial side slopes, and concave toeslopes that receive runoff from the higher adjacent soils. Individual areas are oblong or irregularly shaped, and range from 5 to 85 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silty clay loam with 10 percent channers

Subsurface layers:
7 to 12 inches, pale brown friable channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers
12 to 22 inches, light brownish gray and dark yellowish brown, friable and firm, channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

Subsoil:
22 to 35 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers
35 to 50 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:
50 to 60 inches, yellowish brown firm channery silty clay loam, with gray iron depletions, and 15 percent channers
60 to 72 inches, yellowish brown firm very gravelly silty clay loam, with 40 percent gravel

Included in mapping are small areas of poorly drained Brinkerton soils in slight depressions and along drainageways, and Cavode soils which have more clay in the subsoil than the Portville soil. Also included are small areas of moderately well drained Buchanan soils in more sloping areas, and somewhat poorly drained soils which have bedrock within a depth of 40 inches. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and subsurface layers and moderately slow or slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer, subsurface layers and subsoil, and very strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. These areas generally are farmed at a low level of intensity.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to increase soil strength, and reduce the potential for frost action. Installing roadside drainage systems also helps reduce the wetness.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

89C—Portville silty clay loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides, lower colluvial side slopes, and concave toeslopes that receive runoff from the higher adjacent soils. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, dark grayish brown silty clay loam with 10 percent channers

Subsurface layers:

7 to 12 inches, pale brown friable channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

12 to 22 inches, light brownish gray and dark yellowish brown, friable and firm, channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

Subsoil:

22 to 35 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

35 to 50 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:

50 to 60 inches, yellowish brown firm channery silty clay loam, with gray iron depletions, and 15 percent channers

60 to 72 inches, yellowish brown firm very gravelly silty clay loam, with 40 percent gravel

Included in mapping are small areas of poorly drained Brinkerton soils in slight depressions and along drainageways, and Cavode soils which have more clay in the subsoil than the Portville soil. Also included are small areas of moderately well drained Buchanan soils in more sloping areas, and somewhat poorly drained soils which have bedrock within a depth of 40 inches. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and subsurface layers, and moderately slow or slow in the fragipan and substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer, subsurface layers and subsoil, and very strongly acid to slightly acid in the substratum

Water table: Perched at a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is in woodland or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. These areas generally are farmed at a low level of intensity.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the restricted permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to increase soil strength and reduce the potential for frost action. Installing roadside drainage systems also reduces the wetness. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a serious hazard if the plant cover is removed during construction. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e

90A—Brinkerton silt loam, 0 to 3 percent slopes

This soil is nearly level, very deep, and poorly drained. It is along drainageways, on broad flats, and in small depressions on non-glaciated foot slopes of uplands. Individual areas are circular or oblong and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark gray silt loam with 5 percent channers

Subsoil:
7 to 12 inches, gray friable silty clay loam, with brown and strong brown iron accumulations and 5 percent channers
12 to 25 inches, gray friable silty clay loam, with strong brown iron accumulations and 5 percent channers
25 to 45 inches, grayish brown firm channery silt loam, with strong brown iron accumulations and 15 percent channers

Substratum:
45 to 72 inches, brown firm channery silt loam, with strong brown iron accumulations and 15 percent channers

Included in mapping are small areas of Atkins and Portville soils. Atkins soils are silty throughout and are on flood plains. The somewhat poorly drained Portville soils are on the slightly higher rises and knolls. Also included are small areas of soils having a silty colluvial surface layer that is thicker than that of the Brinkerton soil, and small areas of poorly drained soils in depressions and along drainageways which do not have a fragipan. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the upper part of the subsoil, and slow in the fragipan and substratum

Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the solum, and from strongly acid to slightly acid in the substratum
Water table: At the surface or within 0.5 foot of the surface from September through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas support water-tolerant vegetation and trees. Some drained areas are used for cultivated crops or hay. This soil meets the requirements for hydric soils.

This soil is poorly suited to cultivated crops due to the seasonal high water table. Generally, the soil is in low depressions that are surrounded by better drained soils. Tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Tilling at the proper moisture content also minimizes compaction and clodding.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the growth of the roots of some forage crops. Prevention of overgrazing and restricted grazing when the soil is wet are the main concerns in managing pasture. If the pasture is grazed during wet periods, the surface layer can easily become compacted. Using proper stocking rates, selecting water-tolerant species for seeding, rotating livestock grazing, deferring grazing when the soil is wet, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements or for local roads and streets. Frost action is also a limitation for local roads and streets. Building on raised coarse textured fill material, and installing a drainage system help to overcome these limitations. The soil is too wet for the construction of dwellings with basements without major modifications. Included areas of the somewhat poorly drained Portville soils may be better sites for dwellings.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable, should be considered for locating septic tank absorption fields.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

90B—Brinkerton silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and poorly drained. It is along drainageways, on colluvial toeslopes, and in small depressions on non-glaciated foot slopes of uplands. Individual areas are circular or oblong, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark gray silt loam with 5 percent channers

Subsoil:
7 to 12 inches, gray friable silty clay loam, with brown and strong brown iron accumulations and 5 percent channers

12 to 25 inches, gray friable silty clay loam, with strong brown iron accumulations and 5 percent channers
25 to 45 inches, grayish brown firm channery silt loam, with strong brown iron accumulations and 15 percent channers

Substratum:
45 to 72 inches, brown firm channery silt loam, with strong brown iron accumulations and 15 percent channers

Included in mapping are small areas of Atkins and Portville soils. Atkins soils are silty throughout and are on flood plains. The somewhat poorly drained Portville soils are on the slightly higher rises and knolls. Also included are small areas of soils having a silty colluvial surface layer that is thicker than that of the Brinkerton soil, and small areas of poorly drained soils in depressions and along drainageways which do not have a fragipan. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer, moderately slow in the upper part of the subsoil, and slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the solum, and from strongly acid to slightly acid in the substratum
Water table: At the surface or within 0.5 foot of the surface from September through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas support water-tolerant vegetation and trees. Some drained areas are used for cultivated crops or hay. This soil meets the requirements for hydric soils.

This soil is poorly suited to cultivated crops. Generally, the soil is in low depressions that are surrounded by better drained soils. Tilling only when the soil is at the proper moisture content, incorporating crop residue into the soil, and rotating crops improve tilth and help to maintain the content of organic matter. Tilling at the proper moisture content also minimizes compaction and clodding.

This soil is poorly suited to hay and pasture. The seasonal high water table restricts the growth of the roots of some forage crops. Prevention of overgrazing, and restricted grazing when the soil is wet are the main concerns in managing pasture. If the pasture is grazed during wet periods, the surface layer can easily become compacted. Using proper stocking rates, selecting water-tolerant species for seeding, rotating livestock grazing, deferring grazing when the soil is wet, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements and for local roads and streets. Frost action is also a limitation of this soil is used as a site for local roads and streets. Building on raised coarse textured fill material, and installing a drainage system help to overcome these limitations. The soil is too wet for the construction of dwellings with basements without major modifications. Included areas of the somewhat poorly drained Portville soils may be better sites for these dwellings.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Adjacent areas that are more suitable, should be considered for locating septic tank absorption fields.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

In many areas this soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

91A—Palms muck, 0 to 2 percent slopes

This organic soil is nearly level, very deep, and very poorly drained. It is in basin like areas, bogs, and swamps on the lowest parts of the landscape. Most areas are adjacent to lakes. Individual areas are circular or oblong. They commonly are 10 to 50 acres in size, but range up to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 12 inches, black muck

Subsoil:
12 to 32 inches, black slightly sticky muck

Substratum:
32 to 43 inches, gray non-sticky fine sandy loam
43 to 72 inches, gray slightly sticky gravelly loam, with 20 percent gravel

Included in mapping are small areas of Carlisle soils which are organic to a depth of more than 51 inches. Carlisle soils are near the center of the mapped hydric soil areas. Also included are Canandaigua soils which have a silty subsoil, and Alden soils in which gravel and stones are mixed with mineral material. The mineral included soils generally occur as narrow bands around the edges of the mapped areas. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow to moderately rapid in the organic material, and moderately slow or moderate in the mineral substratum
Available water capacity: High
Soil reaction: Strongly acid to slightly alkaline in the organic material, and slightly acid to moderately alkaline in the mineral deposits
Water table: At the surface or within a depth of 1.0 foot throughout the year
Flooding hazard: None
Depth to bedrock: More than 6 feet
Ponding hazard: From 0.0 to 1.0 foot above the surface from November through May, and from 0.0 to 0.5 foot above the surface from June through October

Most areas support cattails and water-tolerant grasses, sedges, brush and trees. Some areas are cultivated or are used for hay or pasture. This soil meets the requirements for hydric soils.

In undrained areas this soil is not suited to farming. The soil is usually saturated throughout the year, and often has water ponded on the surface.

Undrained areas are poorly suited to hay and pasture, as the soil is usually saturated throughout the year, and often has water ponded on the surface. Surface compaction and trampling of the pasture are serious management concerns if these areas are grazed. Degradation of the wetland habitat is likely, if grazed.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

This soil is generally unsuited for dwellings with basements, local roads and streets, and for septic tank absorption fields. The depth to saturated zone, excess humus, frequent ponding, subsidence, and frost action are severe limitations for these uses.

These areas are generally well suited to wetland wildlife habitat.

The capability subclass is 5w.

92—Carlisle muck

This organic soil is nearly level, very deep, and very poorly drained. It is in bogs and swamps on the lowest parts of the landscape. Most areas are adjacent to lakes. Individual areas are circular or oval. They commonly range from 10 to 50 acres in size. Slopes generally are smooth, and range from 0 to 2 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 15 inches, black friable muck

Subsoil:
15 to 72 inches, black friable muck, with 15 percent woody fragments

Included in mapping are small areas of Palms muck and other Saprists. Palms soil is organic to a depth of less than 51 inches and is mainly at the edges of the mapped areas. Saprists units are organic deposits of variable depth generally covered with water 90 percent of the year. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderately slow to moderately rapid throughout the profile
Available water capacity: High
Soil reaction: Very strongly acid to slightly alkaline throughout the profile
Water table: At the surface or within a depth of 1.0 foot throughout the year
Flooding hazard: None
Depth to bedrock: More than 6 feet
*Ponding hazard:*From 0.0 to 1.0 foot above the surface from September through June, and from 0.0 to 0.5 foot above the surface in July and August

Most areas support cattails and water-tolerant grasses, sedges, brush and trees. Some areas are used for vegetable gardens, if drained. This soil meets the requirements for hydric soils.

In undrained areas this soil is not suited to farming. The soil is usually saturated throughout the year, and often has water ponded on the surface.

Undrained areas are poorly suited to hay and pasture, as the soil is usually saturated throughout the year, and often has water ponded on the surface. Surface compaction and trampling of the pasture are serious management concerns if these areas are grazed. Degradation of the wetland habitat is likely, if grazed.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

This soil is generally unsuited for dwellings with basements, local roads and streets, and for septic tank absorption fields. The depth to saturated zone, excess humus, frequent ponding, subsidence, and frost action are severe limitations for these uses.

These areas are generally well suited to wetland wildlife habitat.
The capability subclass is 5w.

93—Saprists, inundated

These level, very deep, very poorly drained soils commonly border lakes, ponds, and other bodies of water. They generally are called freshwater marsh. Shallow water is on the surface most of the year. The depth of the water on the soils fluctuates with the depth of the adjacent bodies of water. Individual areas are oblong or circular. They commonly range from 5 to 30 acres in size, but some are more than 75 acres. Slopes are 0 to 1 percent.

Saprists consist of black, sapric material 16 to 60 inches thick. The underlying mineral layers to a depth of 72 inches or more are gray or brown, mottled, sandy, silty, clayey or loamy deposits that include varying amounts of gravel. These soils are ponded.

Included in mapping are small areas of Carlisle and Palms muck. Carlisle soils are organic to a depth of more than 51 inches, and Palms soils are organic at a depth of 16 to 51 inches.

Most areas of this unit are in natural depressions. Some areas are manmade or are the result of beaver dam construction. The dominant vegetation is cattails, rushes and other water-tolerant, herbaceous plants. Most areas do not support trees, but water-tolerant species are common in some areas.

Onsite investigation is needed to determine the feasibility of using a particular area. Most areas provide excellent habitat for wetland wildlife: beaver, muskrat, fish and waterfowl (fig. 12). In some areas the habitat can be improved by constructing islands, building nesting boxes, and planting food-producing wetland shrubs.

The capability subclass is 8w.

Figure 12.—An area of Saprists, inundated, developed for improved wildlife habitat.

94B—Frewsburg silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and somewhat poorly drained. It is on broad hilltops, ridge benches and saddles in areas where the topography is influenced by the underlying bedrock. Shale and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 1 inch, very dark grayish brown silt loam with 10 percent channers

Subsurface layer:
1 to 6 inches, yellowish brown friable silt loam, with strong brown iron accumulations and 5 percent channers

Subsoil:
6 to 18 inches, yellowish brown friable channery silty clay loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
18 to 38 inches, olive gray firm channery silty clay loam, with yellowish red and yellowish brown iron accumulations, and 25 percent channers
38 inches, dark yellowish brown, dark grayish brown, and strong brown shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Ivory soils which contain more clay and are deeper than the Frewsburg soil. Also included are small areas of somewhat poorly drained Shongo soils which are very deep over bedrock, and small areas of soils that have a channery surface layer. Well drained Carrolton soils are included on slight rises and knolls. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layers, and moderate or moderately slow in the subsoil and substratum
Available water capacity: Low to high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is in woodland, or is idle land that is reverting to woodland. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to most of the crops commonly grown in the county. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay, or pasture. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems may be difficult because of the underlying bedrock. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Erosion is a hazard on long slopes that are intensively cultivated. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter.

Because of the natural acidity and low fertility, sufficient applications of fertilizer and lime are needed.

This soil is well suited to water-tolerant grasses and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture.

Grazing when the soil is wet causes surface compaction and restricts plant growth. Overgrazing can deplete the stand of pasture grasses, and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements.

The depth to saturated zone, frost action and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems increase soil strength and reduce the potential for frost action and wetness. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to saturated zone and the depth to bedrock are limitations on sites for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3w.

94C—Frewsburg silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and somewhat poorly drained. It is on valley sides and ridge benches in areas where the topography is influenced by the underlying bedrock. Shale and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 1 inch, very dark grayish brown silt loam with 10 percent channers

Subsurface layer:
1 to 6 inches, yellowish brown friable silt loam, with strong brown iron accumulations and 5 percent channers

Subsoil:
6 to 18 inches, yellowish brown friable channery silty clay loam, with strong brown iron accumulations and gray iron depletions, and 15 percent channers

Substratum:
18 to 38 inches, olive gray firm channery silty clay loam, with yellowish red and yellowish brown iron accumulations, and 25 percent channers
38 inches, dark yellowish brown, dark grayish brown, and strong brown shale bedrock

Included in mapping are small areas of poorly drained soils along drainageways and in slight depressions, and small areas of Ivory soils which contain more clay and are deeper than the Frewsburg soil. Also included are small areas of somewhat poorly drained Shongo soils which are very deep over bedrock, and small areas that have a channery surface layer. Well drained Carrolton soils are included on slight rises and knolls. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layer, and moderate or moderately slow in the subsoil and substratum
*Available water capacity:*Low to high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is in woodland, or is idle land that is reverting to woodland.

This soil is moderately well suited to most of the crops commonly grown in the county. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay, or pasture. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Installing subsurface drainage systems may be difficult because of the underlying bedrock. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Erosion is a hazard on areas that are intensively cultivated. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of the natural acidity and low fertility, sufficient applications of fertilizer and lime are needed.

This soil is well suited to water-tolerant grasses and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture.

Grazing when the soil is wet causes surface compaction and restricts plant growth. Overgrazing can deplete the stand of pasture grasses, and thus result in serious erosion and puddling. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, the depth to bedrock and slope are the main limitations on sites for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Where outlets are available, installing drains around footings and sealing foundations and basement walls help to prevent excessive wetness in basements. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, frost action, depth to bedrock and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems increase soil strength and reduce the potential for frost action and wetness. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

95B—Mandy channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and well drained. It is on convex hilltops and ridge benches in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:

2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers

13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers

24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers

33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of moderately well drained soils, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Mandy soils which have a silt loam surface layer are present in spots. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded, but some small areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Small woodlots are in some areas, and some of the acreage is idle land that is reverting to brush.

This soil is moderately well suited to most of the crops commonly grown in the county. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. The growing season is shorter on this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Erosion is a hazard if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season. In areas of this unit where bedrock is shallower, droughtiness is common in mid summer and may restrict crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to bedrock in the soil is the main limitation if this soil is used as sites for dwellings with basements. Hard bedrock may make excavation difficult, and blasting may be necessary.

Depth to bedrock and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning in layout of roads and streets may help to overcome the limitation due to depth to bedrock, and minimize excavation. Adding coarse textured subgrade or base material increases soil strength and reduces the potential for frost action.

Depth to bedrock is a limitation if this soil is used as a site for septic tank absorption fields. Bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

95C—Mandy channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and well drained. It is on valley sides and ridge benches in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:

2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers

13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers

24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers

33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of moderately well drained soils, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Mandy soils which have a silt loam surface layer are present in spots. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is in woodland, or is idle land that is reverting to brush. Some areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter on this soil than for nearby valley soils. The use of short-season or early maturing crop varieties is recommended. The crops that are planted early in spring and deep-rooted perennial crops, such as alfalfa, grow especially well. Erosion is a serious hazard in intensively cultivated areas. Contour farming and stripcropping in combination with diversions, terraces, and grassed waterways, help to control erosion. Incorporating crop residue into the soil, minimizing tillage, including sod crops in the crop rotation, and growing cover crops help to maintain tilth and increase the content of organic matter. Crops respond well to applications of lime and fertilizer. Legumes respond especially well. In areas of this unit where bedrock is shallower, droughtiness is common in mid summer and may restrict crop growth.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to bedrock and slope are the main limitations if this soil is used as a site for dwellings with basements. Bedrock can make excavation difficult and costly.

Blasting may be necessary. Land grading and building on the contour help to overcome the slope limitation.

Slope, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Careful planning in layout of roads and streets may help to overcome the limitation due to depth to bedrock and minimize excavation. Adding coarse textured subgrade or base material increase soil strength and reduce the potential for frost action.

Depth to bedrock is a limitation on sites for septic tank absorption fields. Bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

95D—Mandy channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, moderately deep, and well drained. It is on uniformly sloping valley sides in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:
2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers
13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers
24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers
33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of moderately well drained soils, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Mandy soils which have a silt loam surface layer are present in spots. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage is in woodland, or is idle land that is reverting to brush. Some areas are used for hay or pasture.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the slope. The growing season is shorter on this soil than for nearby valley soils. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In areas of this unit where bedrock is shallower, droughtiness is common in mid summer and may restrict crop growth.

This soil is moderately well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to bedrock and slope are the main limitations if this soil is used as a site for dwellings with basements. Bedrock can make excavation difficult and costly. Blasting may be necessary. Land grading and building on the contour help to overcome the slope limitation.

Slope, frost action, and depth to bedrock are the main limitation if this soil is used as a site for local roads and streets. Careful planning in layout of roads and streets may help to overcome the limitations due to slope and depth to bedrock, and minimize grading and excavation. Adding coarse textured subgrade or base material increase soil strength and reduce the potential for frost action.

Depth to bedrock and slope are limitations if this soil is used as a site for septic tank absorption fields. Bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Extensive engineering, design modifications and land shaping are necessary to overcome the limitations imposed by slope.

Erosion is a serious hazard on construction sites.It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

95E—Mandy channery silt loam, 25 to 35 percent slopes

This soil is steep, moderately deep, and well drained. It is on uniformly sloping valley sides in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:
2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers
13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers
24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers
33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of moderately well drained soils, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Mandy soils which have a silt loam surface layer are present in spots. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used as woodland. Some areas are used for pasture.

This soil is not suited to cultivated crops or hay because of the slope and very severe hazard of erosion. Operating farm equipment is very difficult because of the slope.

The suitability of this soil for pasture is limited. A good plant cover is needed. Prevention of overgrazing helps protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope and the restricted depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive modification may be necessary to overcome the slope. Bedrock can make excavation difficult and costly. Blasting may be necessary. Installing drains around footings helps to remove lateral seepage moving through fractures in the bedrock.

Slope, frost action, and depth to bedrock are the main limitation if this soil is used as a site for local roads and streets. Careful planning in layout of roads and streets may help to overcome the limitations due to slope and depth to bedrock, and minimize grading and excavation. Adding coarse textured subgrade or base material will increase soil strength, and reduce the potential for frost action.

Depth to bedrock and slope are limitations if this soil is used as a site for septic tank absorption fields. Bedrock can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Extensive engineering, design modifications and land shaping are necessary to overcome the limitations imposed by slope.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

95F—Mandy channery silt loam, 35 to 50 percent slopes

This soil is very steep, moderately deep, and well drained. It is on uniformly sloping valley sides in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:

2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers

13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers

24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers

33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of moderately well drained soils, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Mandy soils which have a silt loam surface layer are present in spots. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay, or pasture. The very steep slopes and very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm equipment. The growing season is shorter for this soil than for nearby valley soils at lower elevations. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive modification may be necessary to overcome the slope. Bedrock can make excavation difficult and costly. Blasting may be necessary. Alternative sites should be considered for this use.

Slope, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. Hard bedrock can make excavation difficult and costly, and blasting may be necessary. Alternative sites should be considered for this use.

The depth to bedrock and the very steep slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are necessary to overcome the slope limitation. Alternative sites should be considered for this use.

Erosion is a very severe hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

96B—Carrollton channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and well drained. It is on convex areas of broad hilltops in areas where the topography is influenced by the underlying bedrock. Shale, siltstone or fine-grained sandstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or circular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:
2 to 17 inches, brown friable channery silt loam, with 20 percent channers
17 to 23 inches, yellowish brown friable channery silt loam with 25 percent channers

Substratum:
23 to 30 inches, yellowish brown friable channery silt loam with 30 percent channers
30 inches, olive shale bedrock

Included in mapping are areas of soils that are similar to Carrollton, but are moderately well drained, and small areas of the somewhat poorly drained Frewsburg soils along drainageways and in seepage spots. Areas of well drained Mandy soils are included where there are more rock fragments in the soil. Small areas of Kinzua and Elko soils are also included, which are more than 40 inches deep over bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low to moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of 2.0 to 3.3 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Many areas that were formerly cleared for crop production are now idle and are reverting to brush and trees. Some areas are used for crops or pasture. The remaining areas are wooded. This soil meets the requirements for prime farmland.

The soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Erosion is a moderate hazard on long slopes in intensively cultivated areas. Installing subsurface drains commonly is difficult in wet included areas because of depth to bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. Incorporating crop residue into the soil, rotating crops, minimizing tillage, and growing cover crops help to maintain tilth, increase the content of organic matter, and control erosion. Crops respond well to sufficient applications of lime and fertilizer. Droughtiness is a limitation in some years.

This soil is well suited to hay and early spring pasture. Overgrazing restricts plant growth and can deplete the stand of desirable pasture plants, especially in dry years. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually and applying sufficient fertilizer are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to bedrock is the main limitation if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock.

Frost action and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock and depth to saturated zone are limitations on sites for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Installing a drainage system in the area around the absorption field helps to overcome the seasonal wetness.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

96C—Carrollton channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and well drained. It is on convex areas of broad hilltops in areas where the topography is influenced by the underlying bedrock. Shale, siltstone or fine-grained sandstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or circular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:
2 to 17 inches, brown friable channery silt loam, with 20 percent channers
17 to 23 inches, yellowish brown friable channery silt loam with 25 percent channers

Substratum:
23 to 30 inches, yellowish brown friable channery silt loam with 30 percent channers
30 inches, olive shale bedrock

Included in mapping are areas of soils that are similar to Carrollton, but are moderately well drained, and small areas of the somewhat poorly drained Frewsburg soils along drainageways and in seepage spots. Areas of well drained Mandy soils are included where there are more rock fragments in the soil. Small areas of Kinzua and Onoville soils are also included, which are more than 40 inches deep over bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Many areas that were formerly cleared for crop production are now idle, and are reverting to brush and trees. Some areas are used for crops or pasture. The remaining areas are wooded.

The soil is moderately well suited to most of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Erosion is a hazard in intensively cultivated areas. Installing subsurface drains commonly is difficult in the wetter included areas because of depth to bedrock. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. Incorporating crop residue into the soil, rotating crops, minimizing tillage, and growing cover crops help to maintain tilth, increase the content of organic matter, and control erosion. Crops respond well to sufficient applications of lime and fertilizer. Droughtiness is a limitation in some years.

This soil is well suited to hay and early spring pasture. Overgrazing restricts plant growth and can deplete the stand of desirable pasture plants, especially in dry years. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually, and applying sufficient fertilizer are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to bedrock and the slope are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock. Land grading and building on the contour help to overcome the slope limitation.

Frost action, slope, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock is a limitation if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

96D—Carrollton channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, moderately deep, and well drained. It is on uniformly sloping valley sides in areas where the topography is influenced by the underlying bedrock. Shale, siltstone, or fine-grained sandstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:
2 to 17 inches, brown friable channery silt loam, with 20 percent channers
17 to 23 inches, yellowish brown friable channery silt loam with 25 percent channers

Substratum:
23 to 30 inches, yellowish brown friable channery silt loam with 30 percent channers
30 inches, olive shale bedrock

Included in mapping are areas of soils that are similar to Carrollton, but are moderately well drained, and small areas of the somewhat poorly drained Frewsburg soils along drainageways and in seepage spots. Areas of well drained Mandy soils are included where there are more rock fragments in the soil. Small areas of Kinzua and Onoville soils are also included, which are more than 40 inches deep over bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used as woodland. Some areas are used for hay or pasture or for row crops grown in support of dairy farming.

This soil is poorly suited to cultivated crops because of the hazard of erosion and the slope. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Because of the slope, operating farm machinery is difficult and hazardous on this soil. Droughtiness is a limitation in some years.

This soil is better suited to hay and pasture than to cultivated crops. Overgrazing restricts plant growth and can deplete the stand of desirable pasture plants, especially in dry years. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns. Because the soil is naturally acid, applications of lime are needed to improve the growth of most pasture plants.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps to control erosion and minimizes gullying along the trails.

The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification may be necessary to overcome the slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footing helps to remove any lateral seepage moving through fractures in the bedrock.

Slope, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock and the slope are limitations if this soil is used as site for septic tank absorption fields. Extensive engineering and design modifications may be necessary to overcome the slope. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

96E—Carrollton channery silt loam, 25 to 35 percent slopes

This soil is steep, moderately deep, and well drained. It is on uniformly sloping valley sides in areas where the topography is influenced by the underlying bedrock. Shale, siltstone or fine-grained sandstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:

2 to 17 inches, brown friable channery silt loam, with 20 percent channers

17 to 23 inches, yellowish brown friable channery silt loam with 25 percent channers

Substratum:
23 to 30 inches, yellowish brown friable channery silt loam with 30 percent channers
30 inches, olive shale bedrock

Included in mapping are areas of soils that are similar to Carrollton, but are moderately well drained, and small areas of the somewhat poorly drained Frewsburg soils along drainageways and in seepage spots. Areas of well drained Mandy soils are included where there are more rock fragments in the soil. Small areas of Kinzua and Onoville soils are also included, which are more than 40 inches deep over bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used as woodland. Some areas are used for pasture.

This soil is not suited to cultivated crops or hay because of the steep slope and very severe hazard of erosion. Operating farm equipment is very difficult because of the slope. The growing season is shorter for this soil than for nearby valley soils at lower elevations.

The suitability of this soil for pasture is limited. A good plant cover is needed. Prevention of overgrazing helps protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps to control erosion and minimizes gullying along the trails.

The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification may be necessary to overcome the slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footing helps to remove any lateral seepage moving through fractures in the bedrock.

Slope, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock and the slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications may be necessary to overcome the slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

96F—Carrollton channery silt loam, 35 to 50 percent slopes

This soil is very steep, moderately deep, and well drained. It is on uniformly sloping valley sides in areas where the topography is influenced by the underlying bedrock. Shale, siltstone or fine-grained sandstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:
2 to 17 inches, brown friable channery silt loam, with 20 percent channers
17 to 23 inches, yellowish brown friable channery silt loam with 25 percent channers

Substratum:
23 to 30 inches, yellowish brown friable channery silt loam with 30 percent channers
30 inches, olive shale bedrock

Included in mapping are areas of soils that are similar to Carrollton, but are moderately well drained, and small areas of the somewhat poorly drained Frewsburg soils along drainageways and in seepage spots. Areas of well drained Mandy soils are included where there are more rock fragments in the soil. Small areas of Kinzua and Onoville soils are also included, which are more than 40 inches deep over bedrock. Included areas make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay, or pasture. The very steep slope and very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm equipment. The growing season is shorter for this soil than for nearby valley soils at lower elevations. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps to control erosion and minimizes gullying along the trails.

The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification may be necessary to overcome the slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Alternative sites should be considered for this use.

Slope, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Alternative sites should be considered for this use.

The depth to bedrock and the very steep slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are necessary to overcome the slope limitation. Alternative sites should be considered for this use.

Erosion is a very severe hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

97B—Kinzua channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and well drained. It is on convex hilltops and on side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 12 inches, yellowish brown friable channery silt loam, with 15 percent channers
12 to 36 inches, yellowish brown friable channery silt loam, with 20 percent channers
36 to 45 inches, brown firm very channery silt loam, with 45 percent channers

Substratum:
45 to 72 inches, olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the moderately well drained Eldred and Onoville soils, and somewhat poorly drained soils along drainageways and in seepage spots. Carrollton and Mandy soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas of Kinzua soils that have more than 35 percent rock fragments in the subsoil, and Ceres soils where the soils are reddish brown in color. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, and moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of 4.0 to 6.0 feet from November through April
Flooding hazard: None
Depth to bedrock: More than 60 inches

Some areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Small woodlots are in some areas, and some of the acreage is idle land that is reverting to brush. This soil meets the requirements for prime farmland.

This soil is well suited to all of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of lime and fertilizer. Erosion may be a hazard on the more sloping areas of this map unit, if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Adequate site preparation and installing drainage around the footings, and sealing the foundation will overcome this limitation.

Frost action is the main limitation if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The restricted permeability in the substratum is a limitation on sites for septic tank absorption fields. Engineering and design modifications are needed if onsite waste disposal systems are installed. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2e.

97C—Kinzua channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and well drained. It is on the shoulders of hilltops that receive runoff from higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 12 inches, yellowish brown friable channery silt loam, with 15 percent channers
12 to 36 inches, yellowish brown friable channery silt loam, with 20 percent channers
36 to 45 inches, brown firm very channery silt loam, with 45 percent channers

Substratum:
45 to 72 inches, olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the moderately well drained Eldred and Onoville soils, and somewhat poorly drained soils along drainageways and in seepage spots. Carrollton and Mandy soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas of Kinzua soils that have more than 35 percent rock fragments in the subsoil, and Ceres soils where the soils are reddish brown in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, and moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of 4.0 to 6.0 feet from November through April
Flooding hazard: None
Depth to bedrock: More than 60 inches

A few areas have been cleared and are used for row crops, alfalfa, hay or pasture. The row crops are grown in support of dairy farming. Small woodlots are in some areas, and some of the acreage is idle land that is reverting to brush.

This soil is moderately well suited to all of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of lime and fertilizer. Erosion is a hazard if the soil is intensively cultivated and is not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping help to control erosion and conserve water during the growing season.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Adequate site preparation and installing drainage around the footings, and sealing the foundation will overcome the limitation due to wetness. The moderate limitation due to slope can be overcome by adapting the design to the slope, or selecting a flatter nearby site.

Frost action and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action. Designing and locating roads and streets on the contour of the slope can overcome the limitation due to slope.

The restricted permeability in the substratum is a limitation if this soil is used as a site for septic tank absorption fields. Engineering and design modifications are needed if onsite waste disposal systems are installed. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

97D—Kinzua channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 12 inches, yellowish brown friable channery silt loam, with 15 percent channers
12 to 36 inches, yellowish brown friable channery silt loam, with 20 percent channers
36 to 45 inches, brown firm very channery silt loam, with 45 percent channers

Substratum:
45 to 72 inches, olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the moderately well drained Eldred and Onoville soils, and somewhat poorly drained soils along drainageways and in seepage spots. Carrollton and Mandy soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas of Kinzua soils that have more than 35 percent rock fragments in the subsoil, and Ceres soils where the soils are reddish brown in color. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, and moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage is in woodland, or is idle land that is reverting to brush. A few areas are used for hay or pasture.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the slope limitation. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness may restrict crop growth.

This soil is moderately well suited to hay and pasture. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements. The limitation due to slope can be overcome by adapting the design to the slope or selecting a flatter nearby site.

The slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Designing and locating roads and streets on the contour of the slope can help overcome the limitation due to slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The slope and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modification are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

97E—Kinzua channery silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 12 inches, yellowish brown friable channery silt loam, with 15 percent channers
12 to 36 inches, yellowish brown friable channery silt loam, with 20 percent channers
36 to 45 inches, brown firm very channery silt loam, with 45 percent channers

Substratum:
45 to 72 inches, olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the moderately well drained Eldred and Onoville soils, and somewhat poorly drained soils along drainageways and in seepage spots. Carrollton and Mandy soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas of Kinzua soils that have more than 35 percent rock fragments in the subsoil, and Ceres soils where the soils are reddish brown in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, and moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most areas are used as woodland and wildlife habitat. Some of the less sloping areas are idle, or are used as pasture.

The soil is not suited to cultivated crops or hay because of the slope and very severe hazard of erosion. Operating farm machinery is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The less sloping areas of this soil can be used as pasture on a limited basis. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements. The limitation due to slope can be overcome by adapting the design to the slope, or selecting a flatter nearby site.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Designing and locating roads and streets on the contour of the slope can overcome the limitation due to slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The slope and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitation.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6e.

97F—Kinzua channery silt loam, 35 to 60 percent slopes

This soil is very steep, very deep, and well drained. It is on hillsides and valley sides that receive runoff from the higher adjacent soils. Many areas along the valley are deeply dissected by V-shaped gullies. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 12 inches, yellowish brown friable channery silt loam, with 15 percent channers
12 to 36 inches, yellowish brown friable channery silt loam, with 20 percent channers
36 to 45 inches, brown firm very channery silt loam, with 45 percent channers

Substratum:
45 to 72 inches, olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the well drained Carrollton and Mandy soils, which have bedrock within a depth of 40 inches. Also included are small areas of Kinzua soils that have more than 35 percent rock fragments in the subsoil, and Ceres soils where the soils are reddish brown in color. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, and moderately slow in the substratum
Available water capacity: Moderate or high

Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most areas are used as woodland and wildlife habitat. The soil is not suited to cultivated crops, hay or pasture because of the slope and very severe hazard of erosion. Operating farm machinery is very difficult because of the slope. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements. The limitation due to slope may be overcome by adapting the design to the slope, or considering alternative sites for this use.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Designing and locating roads and streets on the contour can help overcome the limitation due to slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The slope and the restricted permeability in the substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitation. Alternative sites should be considered for this use.

Erosion is a severe hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

98D—Kinzua channery silt loam, 15 to 25 percent slopes, extremely bouldery

This soil is moderately steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 15 to 65 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 12 inches, yellowish brown friable channery silt loam, with 15 percent channers
12 to 36 inches, yellowish brown friable channery silt loam, with 20 percent channers
36 to 45 inches, brown firm very channery silt loam, with 45 percent channers

Substratum:
45 to 72 inches, olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the moderately well drained Eldred and Onoville soils, and somewhat poorly drained soils along drainageways and in seepage spots. Carrollton and Mandy soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas of Kinzua soils that have more than 35 percent rock fragments in the subsoil, and small areas of Ceres soils where the soils are reddish brown in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, and moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to the large boulders on the surface. The boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Large boulders on the surface hinder reseeding. Overgrazing is another concern in managing pasture because it can damage native pasture plants. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are good management practices.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

Slope and large boulders on the surface are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification and grading may be needed to overcome the slope. Large boulders on the soil surface can make excavation difficult and costly.

Large boulders on the surface, slope, and frost action are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and grading may be needed to overcome the slope. Boulders on the soil surface can make excavation difficult and costly.

Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The slope, restricted permeability in the substratum and large boulders are the main limitations if this soil is used as a site for septic tank absorption fields. Boulders on the surface can make excavation difficult and costly. Extensive engineering and design modification are needed if onsite waste disposal systems are installed.

Erosion is a serious hazard on construction sites. Erosion can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 6s.

98E—Kinzua channery silt loam, 25 to 35 percent slopes, extremely bouldery

This soil is steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F.

Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 15 to 95 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 12 inches, yellowish brown friable channery silt loam, with 15 percent channers
12 to 36 inches, yellowish brown friable channery silt loam, with 20 percent channers
36 to 45 inches, brown firm very channery silt loam, with 45 percent channers

Substratum:
45 to 72 inches, olive brown firm very channery silt loam, with 45 percent channers

Included in mapping are small areas of the moderately well drained Eldred and Onoville soils, and somewhat poorly drained soils along drainageways and in seepage spots. Carrollton and Mandy soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas of Kinzua soils that have more than 35 percent rock fragments in the subsoil, and small areas of Ceres soils where the soils are reddish brown in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsoil, and moderately slow in the substratum
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most areas are used as woodland and wildlife habitat.

This soil is not suited to cultivated crops or hay due to the large boulders on the surface and the steep slopes. The boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible. A plant cover that controls runoff and erosion is essential.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Large boulders on the surface and slope hinder reseeding. Overgrazing is another concern in managing pasture because it can damage native pasture plants. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

Slope and large boulders on the surface are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification and grading may be needed to overcome the slope limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required. Boulders on the soil surface can make excavation difficult and costly.

Large boulders on the surface, slope, and frost action are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and grading may be needed to overcome the slope. Boulders on the soil surface can make excavation difficult and costly. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The slope, restricted permeability in the substratum and large boulders are the main limitations if this soil is used as a site for septic tank absorption fields. Boulders on the surface can make excavation difficult and costly. Extensive engineering and design modification are needed if onsite waste disposal systems are installed.

Erosion is a serious hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible. In most areas the native plant cover should not be removed.

The capability subclass is 7s.

99B—Buchanan silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and moderately well drained. It is on hillsides and lower colluvial side slopes that receive runoff from the higher adjacent soils. Individual areas are oblong, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
6 to 16 inches, yellowish brown very friable channery silt loam, with 15 percent channers
16 to 22 inches, yellowish brown friable channery silt loam, with 15 percent channers
22 to 33 inches, olive brown firm channery clay loam, with light brownish gray iron depletions and strong brown iron accumulation; and 20 percent channers
33 to 45 inches, olive brown very firm channery silt loam, with light brownish gray iron depletions and strong brown iron accumulations, and 30 percent channers

Substratum:
45 to 72 inches, olive brown firm very gravelly silt loam, with 50 percent gravel

Included in mapping are small areas of the somewhat poorly drained Portville soils along drainageways and in seepage spots, and small areas of well drained Rayne soils on slight rises and knolls without a fragipan. Also included are small areas of well drained Hartleton soils which have more channers in the subsoil and bedrock within 40 to 60 inches of the surface. Small areas of Buchanan soils that have channery fragments in the surface layer are also included. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow in the fragipan and substratum
Available water capacity: Low to high
Soil reaction: Extremely acid and strongly acid throughout the profile
Water table: Perched at a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland, or is idle land that is reverting to brush. Some areas are cultivated for row crops grown in support of dairy farming, or are in hay or pasture.

This soil is well suited to most of the crops commonly grown in the county. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes in intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth.

This soil is well suited to pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. The soil becomes compacted if the pasture is grazed during wet periods. Overgrazing and surface compaction restrict plant growth, damage pasture plants, and increase the rate of runoff. Applying a sufficient amount of lime and fertilizer, using proper stocking rates, rotating livestock grazing, and controlling weeds and brush are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 2w.

99C—Buchanan silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and lower colluvial side slopes that receive runoff from the higher adjacent soils. Individual areas are rectangular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:

6 to 16 inches, yellowish brown very friable channery silt loam, with 15 percent channers

16 to 22 inches, yellowish brown friable channery silt loam, with 15 percent channers

22 to 33 inches, olive brown firm channery clay loam, with light brownish gray iron depletions and strong brown iron accumulation; and 20 percent channers

33 to 45 inches, olive brown very firm channery silt loam, with light brownish gray iron depletions and strong brown iron accumulations, and 30 percent channers

Substratum:
45 to 72 inches, olive brown firm very gravelly silt loam, with 50 percent gravel

Included in mapping are small areas of the somewhat poorly drained Portville soils along drainageways and in seepage spots, and small areas of well drained Rayne soils on slight rises and knolls without a fragipan. Also included are small areas of well drained Hartleton soils which have more channers in the subsoil and bedrock within 40 to 60 inches of the surface. Small areas of Buchanan soils that have channery fragments in the surface layer are also included. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow in the fragipan and substratum
Available water capacity: Low to high
Soil reaction: Extremely acid through strongly acid throughout the profile
Water table: Perched at a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. A few areas have been cultivated, or are in hay or pasture.

This soil is moderately well suited to row crops if erosion and runoff are controlled. Draining the wetter included soils by random tile drains allows for earlier planting and more uniform management of the fields. Sufficient applications of lime are needed if legumes are to be established. Erosion is a hazard on long slopes and intensively cultivated areas. Farming on the contour, stripcropping, growing cover crops, and establishing diversions that break up long slopes help to control runoff and erosion. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and mulching increase the rate of water infiltration during the growing season and help to maintain tilth. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is well suited to pasture. Overgrazing is the main concern in managing pasture because it can damage pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and severe erosion. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope and shrink-swell potential are the main limitations on sites for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements and reduce shrink-swell potential. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, slope, frost action and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 3e.

99D—Buchanan silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on smooth colluvial hillsides and valley sides that receive runoff from the higher adjacent soils. Individual areas are oblong and narrow, and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
6 to 16 inches, yellowish brown very friable channery silt loam, with 15 percent channers
16 to 22 inches, yellowish brown friable channery silt loam, with 15 percent channers
22 to 33 inches, olive brown firm channery clay loam, with light brownish gray iron depletions and strong brown iron accumulation; and 20 percent channers
33 to 45 inches, olive brown very firm channery silt loam, with light brownish gray iron depletions and strong brown iron accumulations, and 30 percent channers

Substratum:
45 to 72 inches, olive brown firm very gravelly silt loam, with 50 percent gravel

Included in mapping are small areas of the somewhat poorly drained Portville soils along drainageways and in seepage spots, and small areas of well drained Rayne soils on slight rises and knolls without a fragipan. Also included are small areas of well drained Hartleton soils which have more channers in the subsoil and bedrock within 40 to 60 inches of the surface. Small areas of Buchanan soils that have channery fragments in the surface layer are also included. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow in the fragipan and substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: Perched at a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland. Some areas are idle land that is reverting to brush. A few areas are used for hay or pasture.

This soil is poorly suited to cultivated crops because of the moderately steep slope and the severe hazard of erosion. The slope limits the use of farm equipment. Tillage is slightly delayed in spring because of the wetness. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. A sufficient amount of lime and fertilizer are needed to maintain good crop growth. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is generally better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Slope, depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The slope, depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a subsurface drainage system upslope from the absorption field, and adding permeable fill material help to overcome seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. It can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 4e.

100—Udorthents, loamy skeletal

These soils are nearly level, very deep, and excessively drained to somewhat poorly drained. Gravel and soil material formerly were removed from these soils, but the soils were later reclaimed by land leveling and some areas are presently used for agricultural purposes. Most of the acreage is idle land that is reverting to woodland. Most areas are rectangular, and range from 10 to 50 acres in size. Slopes generally are smooth and range from 0 to 3 percent.

These soils exhibit little or no evidence of profile development. The texture and drainage vary considerably from one area to another. In most cases the topsoil has been removed and stockpiled. After excavations for gravel were completed, the areas were leveled and covered with topsoil or loamy material.

In a typical profile the surface layer is brown or grayish brown gravelly loam or loamy sand, 4 to 8 inches thick. The substratum is brown or yellowish brown, and varies widely in texture from very gravelly loamy sand to very gravelly silty clay. In some areas, there is no topsoil and the substratum has numerous cobblestones.

Included in mapping are small areas of the somewhat poorly drained Red Hook soils in slight depressions and along drainageways. Also included are the well drained Valois soils in areas where the Udorthents adjoins glacial till; Chenango soils in areas where the Udorthents adjoins gravelly outwash; and Tioga soils are in areas where the Udorthents adjoin silty soils on alluvial flood plains. Earthen dams are also included in this map unit. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Variable but generally from moderate to rapid throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately alkaline throughout the profile
Water table: Variable, depending upon the elevation and the level of the water in adjacent soils
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are cultivated and used for row crops and legumes in support of dairy operations. Few areas have been reclaimed and left idle.

Unless intensive management is applied, these soils are not suited to cultivated crops, hay, or pasture. Efforts must be made to increase the content of organic matter and build up the topsoil. Rock fragments can limit tillage and can cause machinery to wear at a more rapid rate. Sufficient applications of lime and fertilizer are required for most crops. Measures that increase the content of organic matter and the available water capacity include growing cover crops and incorporating crop residue into the soils.

Because of the variability of these soils, onsite investigation is needed to determine the suitability for any urban use.

No capability subclass is assigned.

101—Udorthents, refuse substratum

These nearly level to steep, very deep, excessively drained to somewhat poorly drained loamy soils are in areas of sanitary landfills that have been reworked by earthmoving and grading equipment. Commonly, the trash and other refuse in these areas are partly covered, or are mixed with the loamy soil material. In some areas the loamy material completely covers the refuse and is seeded. The sides of most areas are steep, and the top is nearly level or gently sloping. Most areas are rectangular, and range from 10 to 100 acres in size. Slopes range from 0 to 35 percent. Slopes generally are smooth and convex.

These soils vary too widely to have a typical profile. Commonly, the upper 2 to 3 feet occurs as mixed layers of loamy material. This material is underlain by layers of trash and other refuse 5 to 20 feet thick. Where the loamy material is used for daily cover, it is likely to be less than 2 feet thick.

Included in mapping are areas that have been cut and filled. Generally, these areas are filled with soil material, rock, and debris from other sites, and then are leveled. The soil material exhibits little or no evidence of profile development, and its texture and drainage class can vary considerably from one area to another. Included areas make up about 5 to 15 percent of this unit.

Soil properties—

Permeability: Variable, but generally moderate to rapid
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately alkaline throughout the profile
Water table: Variable, depending upon the elevation and the level of the water in adjacent soils
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most active sanitary landfills do not support plants. The older areas support varying amounts of grasses, weeds, and shrubs. Some reclaimed areas are used for hay, and some areas have been filled with soil material and rock debris, and are used for urban development.

Settling of the underlying material and the instability of the material are the main limitations affecting homesite development, local roads and streets, and septic tank absorption fields. Areas that have an adequate cover of soil material and have been improved by land shaping can be used for hay.

Most areas require onsite investigation to determine the suitability for various uses.

No capability subclass is assigned.

102C—Mandy-Rock outcrop complex, 3 to 15 percent slopes

Mandy soil is gently sloping to strongly sloping, moderately deep, and well drained. It is on hilltops in areas where the topography is influenced by the underlying bedrock. This unit may be observed at Little Rock City south of the village of Ellicottville. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches in the Mandy portion of the unit. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 40 acres in size.

Mandy soil makes up 40 percent of the unit; Rock outcrop makes up 35 percent, and other included soils make up 25 percent of the unit. The Mandy soil and Rock outcrop occur in such an intricate pattern that it was not practical to separate them at the scale used in mapping.

The typical sequence, depth, and composition of the layers of the Mandy soil are as follows—

Surface layer:
0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:
2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers
13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers
24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers
33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of a moderately well drained Eldred and Onoville soils, which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches. Somewhat poorly drained Frewsburg soils are included in wetter depressional areas. Mandy soils which have a silt loam surface layer are present in spots. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 25 percent of this unit.

Soil properties of the Mandy soils—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

All areas of this unit, except for those on exposed bedrock, support natural vegetation consisting of trees and brush. Some small trees and brush grow in the crevices of the rocks.

This soil is not suited to cultivated crops or hay due to the exposed bedrock. The exposed bedrock and large boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Large boulders and exposed bedrock on the surface hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture, and erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity for northern red oak is moderately high in the Mandy soils. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low in the Mandy soil. Planting seedlings early in spring, when the soil is moist, helps to improve their chances of survival. Excessive surface boulders limit the use of logging equipment.

Exposed bedrock and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Bedrock and large boulders on the soil surface can make excavation difficult and costly.

Exposed bedrock and boulders on the surface, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets to avoid the rock outcroppings and large boulders will help reduce excavation. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the frost action.

Depth to bedrock and exposed bedrock on the surface are limitations if this soil is used as a site for septic tank absorption fields. Bedrock and large boulders on the surface can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. Erosion can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 7s.

103C—Knapp Creek-Rock outcrop complex, 3 to 15 percent slopes

This soil is gently sloping to strongly sloping, deep, and well drained. It is on ridges and summits where the topography is influenced by the underlying bedrock. It occurs at elevations above 2,200 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong, and range from 10 to 40 acres in size.

Knapp Creek soils make up 40 percent of the unit, Rock outcrop makes up 35 percent, and other included soils make up 25 percent of the unit. The Knapp Creek soils and Rock outcrop occur in such an intricate pattern that it was not practical to separate them at the scale used in mapping.

The typical sequence, depth, and composition of the layers of the Knapp Creek soil are as follows—

Surface layer:
0 to 3 inches, black partially decomposed leaf litter

Subsurface layer:
3 to 11 inches, pinkish gray loose gravelly loamy sand with 25 percent gravel

Subsoil:
11 to 16 inches, strong brown very friable gravelly sandy loam with 25 percent gravel
16 to 22 inches, brownish yellow very friable very gravelly sandy loam, with 40 percent gravel
22 to 48 inches, yellowish brown and brownish yellow very friable extremely gravelly sandy loam, with 70 percent gravel

Substratum:
48 to 58 inches, pale yellow extremely gravelly sandy loam, highly weathered sandstone conglomerate, with 80 percent gravel
58 inches, sandstone bedrock consisting of Olean conglomerate (fig. 13)

Included in mapping are small areas of moderately well drained Eldred and Elko soils, which have less rock fragments in the subsoil and more clay than Knapp Creek soils. Well drained Kinzua soils are included where the bedrock is deeper than 60 inches. Also included are small areas of similar Flatiron soils which contain less rock fragments, and small areas of similar soils where the bedrock is within 20 inches of the surface or where the bedrock is at a depth greater than 60 inches. Included areas make up about 25 percent of this unit.

Figure 13.—Typical area of Knapp Creek-Rock outcrop complex, 3 to 15 percent slopes, showing the exposed Olean sandstone conglomerate.

Soil properties—

Permeability: Moderately rapid or rapid throughout the profile
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

All areas of this unit, except for those on exposed bedrock, support natural vegetation consisting of trees and brush. Some small trees and brush grow in the crevices of the rocks.

This soil is not suited to cultivated crops or hay due to the exposed bedrock. The exposed bedrock and boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Erosion is a moderate hazard, particularly on areas left bare of plant cover. Operating machinery is somewhat restricted by rock outcroppings, boulders, and uneven slopes. Overgrazing is a major concern of pasture management as it causes the reduction or loss of desirable pasture plants. Rotational grazing and proper stocking rates help to increase the quantity and quality of feed and forage and maintain pasture productivity.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Excessive surface boulders limit the use of logging equipment.

Exposed bedrock and large boulders are the main limitations if this soil is used as a site for dwellings with basements. Large boulders on the soil surface can make excavation difficult and costly. Erosion is a moderate hazard during construction. Uneven slopes and variable depth to bedrock reduce site selection. Where possible, dwellings with basements should be constructed in areas of deep Knapp Creek soils.

Exposed bedrock and large boulders on the surface, frost action, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets to avoid the rock outcroppings and large boulders will help reduce excavation. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the frost action.

Poor filtering capacity, depth to bedrock, and exposed bedrock are limitations if this soil is used as a site for septic tank absorption fields. Bedrock and large boulders on the surface can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from rapid permeability and seepage through the jointed and fractured bedrock. The absorption fields should be installed in suitable fill material.

Erosion is a hazard on construction sites. Erosion can be controlled by minimizing the disturbance and by revegetating the site as soon as possible.

The capability subclass is 7s.

104B—Flatiron loamy fine sand, 3 to 8 percent slopes, extremely bouldery

This soil is gently sloping, very deep, and well drained. It is on ridges of shoulder and summits that receive little or no runoff from higher adjacent soils. It occurs at elevations above 2,000 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 1 inch, black partially decomposed leaf litter

Subsurface layer:
1 to 2 inches, pinkish gray loose loamy fine sand, with 10 percent gravel

Subsoil:
2 to 25 inches, brown very friable gravelly fine sandy loam, with 15 percent gravel
25 to 36 inches, strong brown very friable gravelly loamy fine sand, with 30 percent gravel

Substratum:
36 to 47 inches, light yellowish brown firm very gravelly sandy loam, with strong brown iron accumulations, and 50 percent gravel
47 to 60 inches, strong brown firm silty clay loam, with 10 percent gravel
60 to 72 inches, pale brown firm gravelly loam, with 20 percent gravel

Included in mapping are small areas of the moderately well drained Eldred soils that have more clay in the subsoil; moderately well drained Elko soils that have a fragipan in the subsoil; and soils similar to Flatiron but are somewhat poorly drained along drainageways and in seepage spots. Other inclusions are small areas of well drained Kinzua soils that have more clay in the subsoil; Ceres soils in areas where the soils are reddish brown in color, and Knapp Creek soils which have more than 35 percent gravel in the solum. Also included are small areas without a bouldery surface. Included areas make up about 25 percent of this unit.

Soil properties—

Permeability: Moderately rapid or rapid in the surface, subsurface and subsoil, and moderately rapid to moderately slow in the substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to the large boulders on the surface. The boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible. The growing season is shorter for this soil than for nearby valley soils at lower elevations.

This soil is poorly suited to pasture. Erosion is a moderate hazard, particularly on areas left bare of plant cover. Operating machinery is somewhat restricted by boulders and stones. Overgrazing is a major concern of pasture management as it causes the reduction or loss of desirable pasture plants. Rotational grazing and proper stocking rates help to increase the quantity and quality of feed and forage, and maintain pasture productivity.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Excessive surface boulders limit the use of logging equipment.

Boulders are the main limitation if this soil is used as site for dwellings with basements. Boulders and stones on the soil surface can make excavation difficult and costly.

Large stones and boulders on the surface and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets will minimize excavation, which can be difficult and costly, and help to overcome the limitations of boulders and large stones. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome the potential for frost action.

Surface rock fragments are a limitation if this soil is used as a site for septic tank absorption fields. Boulders on the surface can make excavation difficult and costly. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

104C—Flatiron loamy fine sand, 8 to 15 percent slopes, extremely bouldery

This soil is strongly sloping, very deep, and well drained. It on shoulder slopes of summits that receive runoff from higher adjacent soils. It occurs at elevations above 2,000 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 1 inch, black partially decomposed leaf litter

Subsurface layer:
1 to 2 inches, pinkish gray loose loamy fine sand, with 10 percent gravel

Subsoil:
2 to 25 inches, brown very friable gravelly fine sandy loam, with 15 percent gravel
25 to 36 inches, strong brown very friable gravelly loamy fine sand, with 30 percent gravel

Substratum:
36 to 47 inches, light yellowish brown firm very gravelly sandy loam, with strong brown iron accumulations, and 50 percent gravel
47 to 60 inches, strong brown firm silty clay loam, with 10 percent gravel
60 to 72 inches, pale brown firm gravelly loam, with 20 percent gravel

Included in mapping are small areas of the moderately well drained Eldred soils that have more clay in the subsoil; moderately well drained Elko soils that have a fragipan in the subsoil; and soils similar to Flatiron but are somewhat poorly drained along drainageways and in seepage spots. Other inclusions are small areas of well drained Kinzua soils that have more clay in the subsoil; Ceres soils in areas where the soils are reddish brown in color, and Knapp Creek soils which have more than 35 percent gravel in the solum. Also included are small areas without a bouldery surface. Included areas make up about 25 percent of this unit.

Soil properties—

Permeability: Moderately rapid or rapid in the surface, subsurface and subsoil, and moderately rapid to moderately slow in the substratum

Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to the large boulders on the surface. The boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible. The growing season is shorter for this soil than for nearby valley soils at lower elevations.

This soil is poorly suited to pasture. Erosion is a moderate hazard, particularly on areas left bare of plant cover. Operating machinery is somewhat restricted by boulders and large stones. Overgrazing is a major concern of pasture management as it causes the reduction or loss of desirable pasture plants. Rotational grazing and proper stocking rates help to increase the quantity and quality of feed and forage and maintain pasture productivity.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

Boulders and slope are the main limitations if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Boulders on the surface, slope, and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets on the contour help to overcome the limitations of boulders and slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

Surface rock fragments are a limitation if this soil is used as a site for septic tank absorption fields. Boulders on the surface can make excavation difficult and costly. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation

The capability subclass is 7s.

104D—Flatiron loamy fine sand, 15 to 25 percent slopes, extremely bouldery

This soil is moderately steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It occurs at elevations above 2,000 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 1 inch, black partially decomposed leaf litter

Subsurface layer:
1 to 2 inches, pinkish gray loose loamy fine sand, with 10 percent gravel

Subsoil:
2 to 25 inches, brown very friable gravelly fine sandy loam, with 15 percent gravel
25 to 36 inches, strong brown very friable gravelly loamy fine sand, with 30 percent gravel

Substratum:
36 to 47 inches, light yellowish brown firm very gravelly sandy loam, with strong brown iron accumulations, and 50 percent gravel
47 to 60 inches, strong brown firm silty clay loam, with 10 percent gravel
60 to 72 inches, pale brown firm gravelly loam, with 20 percent gravel

Included in mapping are small areas of the moderately well drained Eldred soils that have more clay in the subsoil; moderately well drained Elko soils that have a fragipan in the subsoil; and soils similar to Flatiron but are somewhat poorly drained along drainageways and in seepage spots. Other inclusions are small areas of well drained Kinzua soils that have more clay in the subsoil; Ceres soils in areas where the soils are reddish brown in color; and Knapp Creek soils which have more than 35 percent gravel in the solum. Also included are small areas without a bouldery surface. Included areas make up about 25 percent of this unit.

Soil properties—

Permeability: Moderately rapid or rapid in the surface, subsurface and subsoil, and moderately rapid to moderately slow in the substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage of this soil is in woodland.

This soil is not suited to cultivated crops or hay due to the large boulders on the surface. The boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible. The growing season is shorter for this soil than for nearby valley soils at lower elevations.

This soil is poorly suited to pasture. Erosion is a hazard, particularly on areas left bare of plant cover. Operating machinery is somewhat restricted by boulders and large stones. Overgrazing is a major concern of pasture management as it causes the reduction or loss of desirable pasture plants. Rotational grazing and proper stocking rates help to increase the quantity and quality of feed and forage and maintain pasture productivity.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

Boulders and slope are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification and grading may be needed to overcome the slope. Boulders and large stones on the soil surface can make excavation difficult and costly.

Slope, boulders on the surface, and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets on the contour help to overcome the limitations of boulders and slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

Slope and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Boulders on the surface can make excavation difficult and costly. Extensive land modification is needed to overcome the slope. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

104E—Flatiron loamy fine sand, 25 to 35 percent slopes, extremely bouldery

This soil is steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It occurs at elevations above 2,000 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 1 inch, black partially decomposed leaf litter

Subsurface layer:
1 to 2 inches, pinkish gray loose loamy fine sand, with 10 percent gravel

Subsoil:
2 to 25 inches, brown very friable gravelly fine sandy loam, with 15 percent gravel
25 to 36 inches, strong brown very friable gravelly loamy fine sand, with 30 percent gravel

Substratum:
36 to 47 inches, light yellowish brown firm very gravelly sandy loam, with strong brown iron accumulations, and 50 percent gravel
47 to 60 inches, strong brown firm silty clay loam, with 10 percent gravel
60 to 72 inches, pale brown firm gravelly loam, with 20 percent gravel

Included in mapping are small areas of the moderately well drained Eldred soils that have more clay in the subsoil; moderately well drained Elko soils that have a fragipan in the subsoil; and soils similar to Flatiron but are somewhat poorly drained along drainageways and in seepage spots. Other inclusions are small areas of well drained Kinzua soils that have more clay in the subsoil; Ceres soils in areas where the soils are reddish brown in color; and Knapp Creek soils which have more than 35 percent gravel in the solum. Also included are small areas without a bouldery surface. Included areas make up about 25 percent of this unit.

Soil properties—

Permeability: Moderately rapid or rapid in the surface, subsurface and subsoil, and moderately rapid to moderately slow in the substratum
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most areas are used as woodland and wildlife habitat.

This soil is not suited to cultivated crops or hay due to the large boulders on the surface and steep slopes. The boulders on the surface and steep slopes make mechanical cultivation and harvesting activities impractical or impossible. A plant cover that controls runoff and erosion is essential. The growing season is shorter for this soil than for nearby valley soils at lower elevations.

This soil is poorly suited to pasture. Erosion is a hazard, particularly on areas left bare of plant cover. Boulders on the surface and slope hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. Prevention of overgrazing helps to protect the soil from erosion and gullying. Rotational grazing and proper stocking rates help to increase the quantity and quality of feed and forage and maintain pasture productivity.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

Slope and boulders are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification and grading may be needed to overcome the slope. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required. Boulders on the soil surface can make excavation difficult and costly.

Slope, boulders on the surface, and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets on the contour help to overcome the limitations of boulders and slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

Slope and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Boulders on the surface can make excavation difficult and costly. Extensive land modification is needed to overcome the slope. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 7s.

108D—Hartleton channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:

3 to 10 inches, yellowish brown friable channery silt loam, with 15 percent channers

10 to 19 inches, brown friable channery silt loam with 30 percent channers

19 to 32 inches, dark yellowish brown friable very channery silt loam with 45 percent channers

32 to 38 inches, brown friable very channery silt loam with yellowish brown iron accumulations, and 45 percent channers

Substratum:
38 to 58 inches, brown friable extremely channery silt loam, with 60 percent channers
58 inches, interbedded siltstone, sandstone, and shale bedrock

Included in mapping are small areas of the moderately well drained Buchanan soils and somewhat poorly drained Portville soils along drainageways and in seepage spots, and Gilpin soils which have bedrock within a depth of 40 inches. Also included are small areas of Rayne soils that have less rock fragments in the solum and have bedrock deeper than 60 inches. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most of the acreage is in woodland, or is idle land that is reverting to brush. A few areas are used for hay or pasture. A small acreage is used for row crops.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and slope. Operating farm equipment is difficult and hazardous because of the moderately steep slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth. In some years droughtiness restricts crop growth.

This soil is moderately well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands, and to ensure good plant growth. If necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification may be necessary to overcome the slope. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required. Although excavation may be costly, the bedrock generally can be ripped with a backhoe. Installing drains around footings helps to remove any lateral seepage moving through fractures in the bedrock.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the potential for frost action.

The slope and depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. The shale bedrock commonly can be ripped. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 4e.

108E—Hartleton channery silt loam, 25 to 35 percent slopes

This soil is steep, deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 10 inches, yellowish brown friable channery silt loam, with 15 percent channers
10 to 19 inches, brown friable channery silt loam with 30 percent channers
19 to 32 inches, dark yellowish brown friable very channery silt loam with 45 percent channers
32 to 38 inches, brown friable very channery silt loam with yellowish brown iron accumulations, and 45 percent channers

Substratum:
38 to 58 inches, brown friable extremely channery silt loam, with 60 percent channers
58 inches, interbedded siltstone, sandstone, and shale bedrock

Included in mapping are small areas of the moderately well drained Buchanan soils and somewhat poorly drained Portville soils along drainageways and in seepage spots, and Gilpin soils which have bedrock within a depth of 40 inches. Also included are small areas of Rayne soils that have less rock fragments in the solum and have bedrock deeper than 60 inches. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most of the acreage is in woodland, or is idle land that is reverting to brush. A few areas are used for hay or pasture.

This soil is unsuited to cultivated crops or hay because of the steep slope and severe hazard of erosion. Operating farm equipment is difficult and hazardous because of the slope. Maintaining a plant cover that controls runoff and erosion is essential.

This soil is poorly suited to hay and pasture due to the steep slopes. A good plant cover should be maintained. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures, and applying the necessary lime and fertilizer is difficult because of the steep slope.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope and the depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification may be necessary to overcome the slope. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required. Although excavation may be costly, the bedrock generally can be ripped with a backhoe. Installing drains around footings helps to remove any lateral seepage moving through fractures in the bedrock.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the potential for frost action.

The slope and depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. The bedrock commonly can be ripped. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 6e.

108F—Hartleton channery silt loam, 35 to 50 percent slopes

This soil is very steep, deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, dark grayish brown channery silt loam with 15 percent channers

Subsoil:
3 to 10 inches, yellowish brown friable channery silt loam, with 15 percent channers
10 to 19 inches, brown friable channery silt loam with 30 percent channers
19 to 32 inches, dark yellowish brown friable very channery silt loam with 45 percent channers
32 to 38 inches, brown friable very channery silt loam with yellowish brown iron accumulations, and 45 percent channers

Substratum:
38 to 58 inches, brown friable extremely channery silt loam, with 60 percent channers
58 inches, interbedded siltstone, sandstone, and shale bedrock

Included in mapping are small areas of the moderately well drained Buchanan soils and somewhat poorly drained Portville soils along drainageways and in seepage spots, and Gilpin soils which have bedrock within a depth of 40 inches. Also included are small areas of Rayne soils that have less rock fragments in the solum and have bedrock deeper than 60 inches. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Low or moderate
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. It is limited mainly by the slope and the very severe hazard of erosion. It is too steep for the safe operation of farm equipment. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

Construction is extremely difficult or impractical on this soil. The very steep slope is the main limitation if this soil is used as a site for local roads and streets, dwellings with basements, and septic tank absorption fields. Erosion is a very serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

131—Lamson very fine sandy loam

This soil is very deep, nearly level, and poorly drained. It is on flat lowlands on lake plains and on broad flats in the major valleys. Individual areas are oblong or irregularly shaped. Most areas range from 10 to 50 acres in size, but some are as large as 100 acres or more. Slopes are uniform and range from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 9 inches, very dark gray very fine sandy loam

Subsurface layer:
9 to 16 inches, pale brown very friable very fine sandy loam, with yellowish brown iron accumulations and gray iron depletions

Subsoil:
16 to 25 inches, gray very friable fine sandy loam, with yellowish brown iron accumulations and light brownish gray iron depletions
25 to 35 inches, brown very friable fine sandy loam, with yellowish brown iron accumulations and gray iron depletions

Substratum:
35 to 55 inches, dark grayish brown loose loamy fine sand, with yellowish brown iron accumulations
55 to 72 inches, dark grayish brown loose layers of fine sandy loam and loamy fine sand

Included in mapping are small areas that are similar to the Lamson soil, but are very poorly drained and have a mucky surface layer. Also included are areas of the somewhat poorly drained Minoa soils on slight rises or knolls; small areas of Getzville soils, which have a silty mantle and are underlain by sandy deposits; and areas of soils that have a surface layer of silt loam. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Moderate or high
Soil reaction: Moderately acid to slightly alkaline in the surface and subsurface layers, and from slightly acid to moderately alkaline in the subsoil and substratum
Water table: At the surface to a depth of 0.5 foot from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Many areas are idle and support water-tolerant grasses, brush and trees. Cleared and drained areas are used for small grains, corn and hay in support of dairy operations. This soil meets the requirements for a hydric soil.

Unless a drainage system is installed, this soil is not suited to cultivated crops. Drainage outlets commonly are not readily available because the soil is in low areas. Where a drainage system is feasible, the soil is suited to field crops and to some vegetables. Although this stone-free soil can be easily tilled, tilth and soil structure deteriorate if the soil is plowed when wet. Growing cover crops, incorporating crop residue into the soil, tilling only when the soil is at the proper soil moisture content, and including sod crops in the cropping system help to maintain tilth and increase the content of organic matter.

Unless drained, this soil is poorly suited to pasture. Grazing when the soil is wet results in surface compaction, puddling, and damage to the pasture. Using proper stocking rates, rotating livestock grazing, controlling brush and weeds by mowing annually, and restricting grazing when the soil is wet are good management practices.

The potential productivity of this soil for red maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

This soil is generally unsuited to dwellings with basements. Building on raised fill material may help to overcome the wetness. Alternative sites that are better suited should be considered for this use.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local streets and roads. Building on raised coarse-textured fill material, and installing roadside drainage systems help to overcome these limitations.

Depth to saturated zone is a limitation for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Alternative sites that are better suited should be considered for this use.

This soil is well suited to wetland wildlife habitat and to the development of recreational ponds.

The capability subclass is 4w.

132B—Wiscoy channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It is on toeslopes and foot slopes of hillsides and on elevated lake plains that receive runoff from the higher adjacent soils. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:

7 to 12 inches, grayish brown friable silt loam, with yellowish brown iron accumulations, and with 10 percent channers

Subsoil:

12 to 22 inches, brown firm channery silt loam, with strong brown iron accumulations and grayish brown iron depletions, and with 15 percent channers

22 to 36 inches, grayish brown very firm channery silt loam, with strong brown iron accumulations and grayish brown iron depletions, and with 20 percent channers

Substratum:

36 to 47 inches, brown firm silt loam, with yellowish brown iron accumulations and grayish brown iron depletions

47 to 72 inches, dark grayish brown firm silty clay loam, with yellowish brown iron accumulations

Included in mapping are small areas of poorly drained Chippewa soils in slight depressions and along drainageways; Volusia and Erie soils where the lacustrine silts and clays are absent or below 40 inches; and moderately well drained Rushford soils on higher knolls and rises. There are also areas where the glacial till cap is thin and the silts and clays are close to the surface. Also included are small areas of Wiscoy soils that do not have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate above the fragipan, slow or very slow in the fragipan, and slow or moderately slow in the substratum

Available water capacity: Very low or low

Soil reaction: Very strongly acid through neutral throughout the profile

Water table: Perched at a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is in woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming. These areas generally are farmed at a low level of intensity.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring, and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the slow permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone is the main limitation if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Excavations are subject to slipping or slumping, particularly when the soil is wet.

The depth to saturated zone and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome the seasonal wetness and the restricted permeability. Excavations are subject to slipping or slumping, particularly when the soil is wet.

The soil is subject to erosion if plant material is removed during construction. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 3w.

132C—Wiscoy channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on toeslopes and foot slopes of hillsides and on elevated lake plains that receive runoff from the higher adjacent soils. Individual areas are oblong or rectangular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsurface layer:
7 to 12 inches, grayish brown friable silt loam, with yellowish brown iron accumulations, and with 10 percent channers

Subsoil:
12 to 22 inches, brown firm channery silt loam, with strong brown iron accumulations and grayish brown iron depletions, and with 15 percent channers
22 to 36 inches, grayish brown very firm channery silt loam, with strong brown iron accumulations and grayish brown iron depletions, and with 20 percent channers

Substratum:
36 to 47 inches, brown firm silt loam, with yellowish brown iron accumulations and grayish brown iron depletions
47 to 72 inches, dark grayish brown firm silty clay loam, with yellowish brown iron accumulations

Included in mapping are small areas of poorly drained Chippewa soils in slight depressions and along drainageways; Volusia and Erie soils where the lacustrine silts and clays are absent or below 40 inches; and moderately well drained Rushford soils on higher knolls and rises. There are also areas where the glacial till cap is thin and the silts and clays are close to the surface. Also included are small areas of Wiscoy soils that do not have a channery surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate above the fragipan, slow or very slow in the fragipan, and slow or moderately slow in the substratum
Available water capacity: Very low or low
Soil reaction: Very strongly acid through neutral throughout the profile
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used for hay and pasture. Some acreage is woodland or is idle land that is reverting to woodland. A few areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to cultivated crops. Unless a drainage system is installed, planting is delayed in spring and the soil can be used only for short-season annual crops, hay, or pasture. Harvesting crops during prolonged wet periods in fall is difficult. If drained and protected from erosion, the soil is suited to the crops commonly grown in the county. Interceptor drains can divert runoff from the higher adjacent soils, and tile and open-ditch drainage systems can remove excess water. Tile drains generally should be closely spaced because of the slow permeability in the subsoil. Erosion can be controlled by stripcropping, farming on the contour, growing cover crops, and minimizing tillage. Incorporating crop residue into the soil and tilling only when the soil is at the proper moisture content improve tilth and help to maintain the content of organic matter.

This soil is well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the major concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling weeds and brush, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone and slope are the main limitations if this soil is used as a site for dwellings with basements. Where outlets are available, installing drains around footings reduces the wetness. Also, sealing foundations and basement walls helps to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation. Excavations are subject to slipping or slumping, particularly when the soil is wet.

The depth to saturated zone, frost action, and slope are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone, depth to dense material, and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability. Excavations are subject to slipping or slumping, particularly when the soil is wet.

Erosion is a serious hazard if the plant cover is removed during construction. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 3e.

135C—Hudson silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep and moderately well drained. It is on glacial lake plains and dissected valley side slopes. Individual areas are oblong or rectangular, and range from 15 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam

Subsurface:
7 to 11 inches, pale brown, friable silt loam

Subsoil:
11 to 16 inches, dark yellowish brown firm silty clay loam, with yellowish brown iron accumulations
16 to 25 inches, brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions
25 to 38 inches, dark yellowish brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
38 to 72 inches, brown firm silty clay with varves of silt and silty clay loam

Included in mapping are small areas of well drained Dunkirk soils and moderately well drained Collamer soils, which have less clay in the subsoil than the Hudson soils. Also included are somewhat poorly drained Rhinebeck soils in slight depressions and along drainageways, and areas that have a gravelly or channery surface texture. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and subsurface layers, and slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface and subsurface layer, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Water table: At a depth of 1.3 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland or is idle land. Some areas are used for hay or pasture, and a few areas are used as cropland.

This soil is moderately suited to cultivated crops. Erosion is a severe hazard, particularly on areas left bare of plant cover. The seasonal high water table and slow permeability cause the soil to warm slowly in the spring and make tillage difficult. Tillage while the soil is wet will damage soil structure, and result in a hard cloddy seedbed and a crusty surface when the soil dries. Surface drainage will help reduce problems related to wetness. Stripcropping, cross slope tillage, conservation tillage, cover crops, and crop rotations will reduce soil erosion, improve soil tilth, and maintain soil productivity over an extended period of time. Sod buffer strips adjacent to steeply sloping areas will help control erosion.

This soil is better suited to hay and pasture than to cultivated crops. Erosion is a severe hazard, particularly on areas left bare of plant cover. Deep-rooted legumes can be grown on this soil. If necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Overgrazing and grazing when the soil is wet are major concerns of pasture management because they cause soil compaction, and the reduction or loss of desirable pasture plants. Rotational grazing, deferred grazing when wet, and proper stocking rates increase the quantity and quality of feed and forage and maintain pasture productivity.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Locating dwellings in the highest part of the unit, installing foundation drains back filled with gravel to a suitable outlet, waterproofing the outside of basement walls, and diverting runoff from higher areas will reduce wetness and shrink-swell potential. Land grading and building on the contour help to overcome the slope limitation.

Slope, depth to saturated zone, shrink-swell potential, and frost action are the main limitations if this soil is used as a site for local roads and streets. Installing roadside drainage systems and building on raised coarse-textured fill material help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and restricted permeability are limitations for septic tank absorption fields. Modifying a conventional system by extending the length of the distribution lines and adding permeable fill material will allow on site sewage disposal in some places. Installing a drainage system in the area around the absorption field, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. Recompacting this soil after it has been disturbed commonly is difficult because of the high content of clay.

The capability subclass is 3e.

135D—Hudson silt loam,15 to 25 percent slopes

This soil is moderately steep, very deep, and moderately well drained. It is on glacial lake plains and dissected valley side slopes. Individual areas are oblong or rectangular, and range from 15 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam

Subsurface:
7 to 11 inches, pale brown, friable silt loam

Subsoil:
11 to 16 inches, dark yellowish brown firm silty clay loam, with yellowish brown iron accumulations
16 to 25 inches, brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions
25 to 38 inches, dark yellowish brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
38 to 72 inches, brown firm silty clay with varves of silt and silty clay loam

Included in mapping are small areas of well drained Dunkirk soil and moderately well drained Collamer soils, which have less clay in the subsoil than the Hudson soils. Also included are somewhat poorly drained Rhinebeck soils in slight depressions and along drainageways, and areas that have a gravelly or channery surface texture. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and subsurface layers, and slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface and subsurface layers, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Water table: At a depth of 1.3 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland or is idle land. Some areas are used for hay or pasture, and a few areas are used as cropland.

This soil is poorly suited to cultivated crops because of the moderately steep slope and the very severe hazard of erosion. Operating farm equipment is difficult and hazardous because of the slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Tillage while the soil is wet will damage soil structure, and result in a hard cloddy seedbed and a crusty surface when the soil dries. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and reduce the hazard of erosion.

Sod buffer strips adjacent to steep sloping areas will help control erosion. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is better suited to hay and pasture than to cultivated crops. Erosion is a severe hazard, particularly on areas left bare of plant cover. Deep-rooted legumes can be grown on this soil. If necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Overgrazing and grazing when the soil is wet are major concerns of pasture management as they cause soil compaction and loss of desirable pasture plants. Rotational grazing, deferred grazing when wet, and proper stocking rates increase the quantity and quality of feed and forage and maintain pasture productivity.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope, depth to saturated zone, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

The slope, depth to saturated zone, shrink-swell potential, and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope. Adding coarse textured subgrade or base material and installing roadside drainage systems reduces the potential for frost action, wetness and shrink-swell potential.

The depth to saturated zone, slope, and restricted permeability are limitations if this soil is used as a site sites for septic tank absorption fields. Extensive land modification is needed to overcome the slope. Modifying a conventional system by extending the length of the distribution lines and adding fill may allow on site sewage disposal in some places. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. Recompacting this soil after it has been disturbed commonly is difficult because of the high content of clay.

The capability subclass is 4e.

135E—Hudson silt loam, 25 to 35 percent slopes

This soil is steep, very deep and moderately well drained. It is on glacial lake plains and dissected valley side slopes. Individual areas are oblong or rectangular, and range from 15 to 80 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 7 inches, dark grayish brown silt loam

Subsurface:
7 to 11 inches, pale brown, friable silt loam

Subsoil:
11 to 16 inches, dark yellowish brown firm silty clay loam, with yellowish brown iron accumulations
16 to 25 inches, brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions
25 to 38 inches, dark yellowish brown firm silty clay, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
38 to 72 inches, brown firm silty clay with varves of silt and silty clay loam

Included in mapping are small areas of well drained Dunkirk and moderately well drained Collamer soils, which have less clay in the subsoil than the Hudson soils. Also included are somewhat poorly drained Rhinebeck soils along drainageways, and areas that have a gravelly or channery surface texture. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and subsurface layers, and slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to neutral in the surface and subsurface layers, moderately acid to slightly alkaline in the subsoil, and neutral to moderately alkaline in the substratum
Water table: At a depth of 1.3 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used as woodland and wildlife habitat. Some of the acreage is idle land or is used as pasture.

This soil is not suited to cultivated crops or to hay because of the slope and the very severe hazard of erosion. It is highly susceptible to erosion if it is cultivated. Hay crops can be grown, but operating farm equipment is limited by the steep slope. A plant cover that controls runoff and erosion helps to protect the adjacent farmland.

This soil is poorly suited to permanent pasture. Reseeding and applying fertilizer are very difficult. Overgrazing during dry periods depletes the stand of pasture plants and increases the hazard of erosion. Measures that maintain a good plant cover are needed.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope, depth to saturated zone, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Designing the dwellings so that they conform to the natural slope of the land may reduce the amount of grading required.

The slope, depth to saturated zone, shrink-swell potential and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour may help to overcome the slope limitation. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduces the potential for frost action, wetness, and shrink-swell potential.

The slope, depth to saturated zone, and the restricted permeability in the subsoil are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modification are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope limitation.

Erosion is a serious problem on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

Recompacting this soil after it has been disturbed commonly is difficult because of the high content of clay.

The capability subclass is 6e.

140D—Dunkirk silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on glacial lake plains and dissected valley side slopes. Individual areas are oblong or rectangular, and range from 15 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown silt loam

Subsurface layer:
4 to 14 inches, yellowish brown friable silt loam

Subsoil:
14 to 26 inches, brown friable silt loam, with light brownish gray iron depletions
26 to 34 inches, brown friable silty clay loam
34 to 48 inches, brown friable silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
48 to 72 inches, brown firm silt loam

Included in mapping are small areas of moderately well drained Collamer soils in slight depressions and along drainageways; small areas of moderately well drained Hudson soils which contain more clay in the subsoil than Dunkirk soils; well drained Unadilla soils which have less clay in the subsoil than the Dunkirk soil; and soils that have a surface layer of very fine sandy loam or gravelly silt loam. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layers, moderately slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to slightly acid in the surface layer, strongly acid to neutral in the subsurface layer, moderately acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland or is idle land. Some areas are used for hay or pasture, and a few areas are used as cropland.

This soil is poorly suited to cultivated crops because of the slope and the very severe hazard of erosion. Operating farm equipment is difficult and hazardous because of the moderately steep slope. Erosion is a serious hazard, especially in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and reduce the hazard of erosion.

This soil is better suited to hay and pasture than to cultivated crops. Overgrazing and grazing when the soil is wet are the main management concerns. Grazing when the soil is wet damages the pasture. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes can be grown on this soil. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, and controlling brush and weeds are the main management concerns.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps to control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land shaping and grading help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

The slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope. Adding coarse textured subgrade or base material reduces the potential for frost action.

The slope and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the slope.

Erosion is a hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, help to control erosion and sedimentation.

The capability subclass is 4e.

140E—Dunkirk silt loam, 25 to 35 percent slopes

This soil is steep, very deep and well drained. It is on glacial lake plains and dissected valley side slopes. Individual areas are oblong, or long and narrow, and range from 15 to 45 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, dark grayish brown silt loam

Subsurface layer:
4 to 14 inches, yellowish brown friable silt loam

Subsoil:
14 to 26 inches, brown friable silt loam, with light brownish gray iron depletions
26 to 34 inches, brown friable silty clay loam
34 to 48 inches, brown friable silty clay loam, with yellowish brown iron accumulations and grayish brown iron depletions

Substratum:
48 to 72 inches, brown firm silt loam

Included in mapping are small areas of moderately well drained Collamer soils in slight depressions and along drainageways; small areas of moderately well drained Hudson soils which contain more clay in the subsoil than Dunkirk soils; well drained Unadilla soils which have less clay in the subsoil than the Dunkirk soil; and soils that have a surface layer of very fine sandy loam or gravelly silt loam. Included soils make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate in the surface and subsurface layers, moderately slow in the subsoil and substratum
Available water capacity: High
Soil reaction: Strongly acid to slightly acid in the surface layer, strongly acid to neutral in the subsurface layer, moderately acid to slightly alkaline in the subsoil, and slightly acid to moderately alkaline in the substratum
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most areas are used as woodland and wildlife habitat. Some of the acreage is idle land, or is used as pasture.

This soil is not suited to cultivated crops or to hay because of the steep slope and the very severe hazard of erosion. It is highly susceptible to erosion if it is cultivated. A plant cover that controls runoff and erosion should be maintained.

This soil is poorly suited to permanent pasture. Overgrazing during dry periods depletes the stand of pasture plants and increases the hazard of erosion. Measures that maintain a good plant cover are needed.

The potential productivity of this soil for sugar maple is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements. Land shaping and grading may help to overcome this limitation. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required.

The slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Land grading and building on the contour help to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action.

The slope and the restricted permeability in the subsoil and substratum are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modification are needed if onsite waste disposal systems are installed.

Erosion is a very serious problem on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 6e.

185C—Onoville silt loam, 8 to 15 percent slopes, extremely bouldery

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and colluvial side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Boulders cover between 3 to 15 percent of the soil surface. Individual areas are rectangular, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
8 to 16 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and with 5 percent channers
16 to 22 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and with 10 percent channers
22 to 32 inches, yellowish brown firm channery loam, with strong brown iron accumulations and light gray iron depletions, and with 20 percent channers
32 to 59 inches, yellowish brown very firm channery clay loam, with strong brown and gray iron accumulations, and with 25 percent channers
59 to 65 inches, yellowish brown firm channery silty clay loam, with light gray iron depletions, and with 20 percent channers

Substratum:
65 to 72 inches, variegated dark grayish brown and yellowish brown firm channery clay loam, with pinkish gray iron depletions, and with 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Shongo soils along drainageways and in seepage spots, and other soils that are somewhat poorly drained which do not have a fragipan. Also included are small areas of well drained Kinzua soils and moderately well drained Eldred which do not have a fragipan. There are some included areas, especially along drainageways, that have more than 15 percent of the surface covered with large stones and boulders. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or moderately slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid or strongly acid in the solum, and very strongly acid to moderately acid in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to boulders on the surface. The boulders make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Boulders on the surface limit reseeding and the application of lime and fertilizer. Overgrazing is another concern in managing pasture because it can damage native pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture, and erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

The depth to saturated zone, slope, shrink-swell potential and many surface boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Depth to saturated zone, slope, frost action, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

The depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field, and adding permeable fill material help to overcome seasonal wetness and the restricted permeability. Boulders on the surface can make excavation costly. Suitable additional fill material may be needed.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

185D—Onoville silt loam, 15 to 25 percent slopes, extremely bouldery

This soil is moderately steep, very deep, and moderately well drained. It is on valley sides and colluvial side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Boulders cover between 3 to 15 percent of the soil surface. Individual areas are rectangular, and range from 5 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 8 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:

8 to 16 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and with 5 percent channers

16 to 22 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and with 10 percent channers

22 to 32 inches, yellowish brown firm channery loam, with strong brown iron accumulations and light gray iron depletions, and with 20 percent channers

32 to 59 inches, yellowish brown very firm channery clay loam, with strong brown and gray iron accumulations, and with 25 percent channers

59 to 65 inches, yellowish brown firm channery silty clay loam, with light gray iron depletions, and with 20 percent channers

Substratum:

65 to 72 inches, variegated dark grayish brown and yellowish brown firm channery clay loam, with pinkish gray iron depletions, and with 20 percent channers

Included in mapping are small areas of the somewhat poorly drained Shongo soils along drainageways and in seepage spots, and other soils that are somewhat poorly drained which do not have a fragipan. Also included are small areas of well drained Kinzua soils and moderately well drained Eldred which do not have a fragipan. There are some included areas, especially along drainageways, that have more than 15 percent of the surface covered with large stones and boulders. Included soils make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow or moderately slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid or strongly acid in the solum, and very strongly acid to moderately acid in the substratum
Water table: Perched at a depth of 1.2 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to boulders on the surface and the moderately steep slopes. The boulders and slopes make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Boulders on the surface limit reseeding and the application of lime and fertilizer. Overgrazing is another concern in managing pasture because it can damage native pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

The depth to saturated zone, slope, shrink-swell potential, and many surface boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Depth to saturated zone, slope, frost action, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

The slope, depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the slope. Installing a drainage system in the area around the absorption field and adding permeable fill material, help to overcome seasonal wetness and the restricted permeability. Boulders on the surface can make excavation costly.

Erosion is a hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

187B—Shongo silt loam, 3 to 8 percent slopes, extremely bouldery

This soil is gently sloping, very deep, and somewhat poorly drained. It is on hillsides, lower colluvial side slopes, and concave toeslopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. There are many boulders and stones which cover 3 to 15 percent of the surface. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 5 percent channers
14 to 24 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
24 to 45 inches, grayish brown very firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers
45 to 56 inches, light olive brown firm channery silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 30 percent channers
56 to 72 inches, light olive brown firm channery silty clay loam, with 35 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways; and Ivory soils, which do not have a firm fragipan and have more clay in the subsoil than the Shongo soil. Also included are small areas of moderately well drained Onoville soils in more sloping areas and Frewsburg soils which have bedrock within a depth of 40 inches. Areas that are stony and areas that have more boulders are also included, especially along drainageways. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and upper subsoil, and moderately slow or slow in the fragipan and substratum
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is woodland. There are some areas that have been pastured and are reverting to woodland.

This soil is not suited to cultivated crops due to the excessive amounts of boulders on the surface. The boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible. The growing season is shorter for this soil than for nearby valley soils at lower elevations.

This soil is marginally suited to unimproved pasture. Large boulders on the surface limit reseeding and the application of lime and fertilizer. Overgrazing and grazing when the soil is wet are concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses and thus result in serious erosion.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases the seedling mortality rate. Tree species that can withstand the seasonal wetness grow best. Excessive surface boulders limit the use of logging equipment.

The depth to saturated zone, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Boulders and large stones on the soil surface can make excavation difficult and costly.

Depth to saturated zone, frost action, shrink-swell potential, and large boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome the wetness limitation, reduces shrink-swell potential, and reduces the potential for frost action. Boulders and large stones on the soil surface can make excavation difficult and costly.

The depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability. Boulders may hinder site preparation and excavation. The selection of a nearby site that is better drained and has fewer boulders will help overcome these limitations.

Erosion is a moderate hazard if the plant cover is removed during construction. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, help to control erosion and sedimentation.

The capability subclass is 7s.

187C—Shongo silt loam, 8 to 15 percent slopes, extremely bouldery

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides, lower colluvial side slopes, and concave toeslopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. There are many boulders that cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 5 percent channers

Subsoil:
6 to 14 inches, yellowish brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 5 percent channers
14 to 24 inches, brown friable silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions, and 10 percent channers
24 to 45 inches, grayish brown very firm channery silty clay loam, with yellowish brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

45 to 56 inches, light olive brown firm channery silty clay loam, with yellowish brown iron accumulations and gray iron depletions, and 30 percent channers
56 to 72 inches, light olive brown firm channery silty clay loam, with 35 percent channers

Included in mapping are small areas of poorly drained soils in slight depressions and along drainageways; and Ivory soils which have more clay in the subsoil than the Shongo soil. Also included are small areas of moderately well drained Onoville soils in more sloping areas, and Frewsburg soils which have bedrock within a depth of 40 inches. Areas that are stony or that have more boulders on the surface, especially along drainageways, are also included. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and upper subsoil, and moderately slow or slow in the fragipan and substratum
Available water capacity: Low or moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer and subsoil, and very strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland. There are some areas that have been pastured and are reverting to woodland.

This soil is not suited to cultivated crops due to the excessive amounts of boulders on the surface. The boulders make mechanical cultivation and harvesting activities impractical or impossible (fig. 14). The growing season is shorter for this soil than for nearby valley soils at lower elevations.

This soil is poorly suited to unimproved pasture. Boulders on the surface limit reseeding and the application of lime and fertilizer. Overgrazing and grazing when the soil is wet are concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Excessive surface boulders limit the use of logging equipment. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Depth to saturated zone, frost action, slope, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome the wetness limitation, reduces shrink-swell potential, and reduces the potential for frost action. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Figure 14.—Typical wooded area of Shongo silt loam, 3 to 8 percent slopes, extremely bouldery. Large boulders interfere with harvesting operations and mechanical planting of seedlings.

The depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability. Boulders may hinder site preparation and excavation. Selecting a nearby site with fewer boulders on the surface will help overcome this limitation.

Erosion is a serious hazard if the plant cover is removed during construction. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

188B—Cavode silt loam, 3 to 8 percent slopes

This soil is gently sloping, very deep, and somewhat poorly drained. It occurs on side slopes and concave toeslopes on uplands that receive runoff from the higher adjacent slopes. Individual areas are oblong or irregularly shaped, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches, very dark grayish brown silt loam with 5 percent channers

Subsoil:
2 to 7 inches, brown friable silt loam with 5 percent channers
7 to 14 inches, brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions and 10 percent channers
14 to 32 inches, light brownish gray firm silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions and 10 percent channers
32 to 44 inches, light brownish gray firm channery silty clay, with strong brown iron accumulations and light brownish gray iron depletions and 15 percent channers
44 to 52 inches, brown firm channery silty clay, with strong brown iron accumulations and gray iron depletions and 25 percent channers

Substratum:
52 to 68 inches, brown firm very channery silty clay loam, with strong brown iron accumulations and 45 percent channers
68 inches, gray siltstone and fine-grained sandstone bedrock

Included in mapping are small areas of poorly drained Brinkerton soils along drainageways and in slight depressions, and small areas of somewhat poorly drained Portville soils which have a fragipan. Areas of moderately well drained Buchanan soils may be included on higher spots of the unit. Areas of similar, but poorly drained soils are included along drainageways and slight depressions. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and upper part of the subsoil, and slow in the lower part of the subsoil and substratum
Available water capacity: Moderate or high
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage is in woodland, or is idle land that is reverting to woodland. Some areas are used for small grain, corn, or hay grown in support of dairy farming.

This soil is moderately well suited to most of the crops commonly grown in the county. Unless a drainage system is installed, planting is delayed in spring, harvesting may be difficult in fall, and the soil can be used only for short-season annual crops, hay or pasture. Erosion is a hazard in intensively cultivated areas on long slopes. Tilling only when the soil is at the proper moisture content minimizes the surface crusting and clodding. Interceptor drains can divert runoff, and tile and open-ditch drainage systems can remove excess water. Subsurface drains should be closely spaced because of the slow permeability in the subsoil. Contour farming and stripcropping in combination with diversions or grassed waterways help to control runoff and erosion. Rotating crops, incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and increase the content of organic matter. Because of natural acidity and low fertility, the soil requires sufficient applications of lime and fertilizer.

This soil is well suited to water-tolerant grasses and late-spring pasture. Overgrazing and grazing when the soil is wet are the main concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, depletes the stand of pasture grasses, and increases the hazard of erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management conce.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The depth to saturated zone and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings.

Depth to saturated zone, frost action, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome the wetness limitations, reduce shrink-swell potential, and reduce the potential for frost action.

The depth to saturated zone and the restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. Recompacting this soil after it has been disturbed commonly is difficult because of the high content of clay.

The capability subclass is 3w.

188C—Cavode silt loam, 8 to 15 percent slopes

This soil is strongly sloping, very deep, and somewhat poorly drained. It occurs on side slopes and toeslopes on uplands that receive runoff from the higher adjacent slopes. Individual areas are oblong or irregularly shaped, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown silt loam with 5 percent channers

Subsoil:
2 to 7 inches, brown friable silt loam with 5 percent channers
7 to 14 inches, brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions and 10 percent channers
14 to 32 inches, light brownish gray firm silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions and 10 percent channers
32 to 44 inches, light brownish gray firm channery silty clay, with strong brown iron accumulations and light brownish gray iron depletions and 15 percent channers
44 to 52 inches, brown firm channery silty clay, with strong brown iron accumulations and gray iron depletions and 25 percent channers

Substratum:
52 to 68 inches, brown firm very channery silty clay loam, with strong brown iron accumulations and 45 percent channers
68 inches, gray siltstone and fine-grained sandstone bedrock

Included in mapping are small areas of poorly drained Brinkerton soils along drainageways and in slight depressions, and small areas of somewhat poorly drained Portville soils which have a fragipan. Areas of moderately well drained Buchanan soils may be included on higher spots of the unit. Areas of similar, but poorly drained soils are included along drainageways and slight depressions. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and upper part of the subsoil, and slow in the lower part of the subsoil and substratum
Available water capacity: Moderate or high
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage is in woodland, or is idle land that is reverting to woodland. Some areas are used for cultivated crops in support of dairy farming.

This soil is moderately well suited to cultivated crops. Erosion is a hazard where cultivated crops are grown. The seasonal wetness delays planting in spring and makes harvesting difficult in fall. Tilling, only when the soil is at the proper moisture content, minimizes surface crusting and clodding. Interceptor drains can divert runoff and subsurface seepage from higher adjacent soils, and thus reduce the hazard of erosion. Tile drains generally should be closely spaced because of the slowly permeable, clayey subsoil. Growing cover crops, incorporating crop residue into the soil, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and minimize crusting and clodding. These practices, along with farming on the contour and stripcropping, also reduce the hazard of erosion. Because of natural acidity and low fertility, the soil requires sufficient applications of lime and fertilizer. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops.

This soil is moderately well suited to water-tolerant hay and to late-spring pasture. Overgrazing and grazing when the soil is wet are the main management concerns. Grazing when the soil is wet causes surface compaction, restricts plant growth, depletes the stand of pasture grasses, and increases the hazard of erosion. Plants respond well to applications of lime and fertilizer. Using proper stocking rates, rotating livestock grazing, deferring grazing when the soil is wet, controlling brush and weeds, and selecting water-tolerant species for seeding are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome the wetness limitations, reduces shrink-swell potential, and reduces the potential for frost action. Land grading and building on the contour help to overcome the slope limitation.

The depth to saturated zone and the restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 3e.

188D—Cavode silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and somewhat poorly drained. It occurs on side slopes on uplands that receive runoff from the higher adjacent slopes. Individual areas are oblong or irregularly shaped, and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark grayish brown silt loam with 5 percent channers

Subsoil:
2 to 7 inches, brown friable silt loam with 5 percent channers
7 to 14 inches, brown friable silt loam, with strong brown iron accumulations and light brownish gray iron depletions and 10 percent channers
14 to 32 inches, light brownish gray firm silty clay loam, with strong brown iron accumulations and light brownish gray iron depletions and 10 percent channers
32 to 44 inches, light brownish gray firm channery silty clay, with strong brown iron accumulations and light brownish gray iron depletions and 15 percent channers
44 to 52 inches, brown firm channery silty clay, with strong brown iron accumulations and gray iron depletions and 25 percent channers

Substratum:
52 to 68 inches, brown firm very channery silty clay loam, with strong brown iron accumulations and 45 percent channers
68 inches, gray siltstone and fine-grained sandstone bedrock

Included in mapping are small areas of poorly drained Brinkerton soils along drainageways and in slight depressions, and small areas of somewhat poorly drained Portville soils which have a fragipan. Areas of moderately well drained Buchanan soils may be included on higher spots of the unit. Areas of similar, but poorly drained soils, are included along drainageways and slight depressions. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface layer and upper part of the subsoil, and slow in the lower part of the subsoil and substratum
Available water capacity: Moderate or high
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage is in woodland. Some areas are idle land that is reverting to brush. A few areas are used for hay or pasture.

This soil is poorly suited to cultivated crops because of the slope and the severe hazard of erosion. Moderately steep slopes limit the use of farm equipment.

Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops. Tilling, only when the soil is at the proper moisture content, minimizes the surface crusting and clodding. Growing cover crops, minimizing tillage, and establishing diversions that break up long slopes and divert excess runoff help to control erosion. Where the slope permits, farming on the contour and stripcropping are suitable. Because tilling the soil is difficult and erosion is a hazard, long-term sod crops are more practical than most other crops. Applying a sufficient amount of lime and fertilizer is needed to maintain good crop growth.

This soil is generally better suited to hay and pasture than to cultivated crops. Grazing when the soil is wet and overgrazing are main concerns in managing pasture. Grazing when the soil is wet causes surface compaction and damage to the pasture. Overgrazing increases the hazard of erosion. Plowing across the slope and leaving strips of sod help to control erosion when an area is reseeded. Rotating livestock grazing, using proper stocking rates, controlling weeds and brush, deferring grazing when the soil is wet, and applying the proper kinds and amounts of lime and fertilizer are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, and shrink-swell potential are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation.

Depth to saturated zone, frost action, slope, and shrink-swell potential are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the wetness limitations, reduces shrink-swell potential, and reduces the potential for frost action. Land grading and building on the contour help to overcome the slope limitation.

The slope, depth to saturated zone, and the restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Land grading and building on the contour help to overcome the slope. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the restricted permeability.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. Recompacting this soil after it has been disturbed commonly is difficult because of the content of clay.

The capability subclass is 4e.

189B—Portville silty clay loam, 3 to 8 percent slopes, extremely bouldery

This soil is gently sloping, very deep, and somewhat poorly drained. It is on hillsides, lower colluvial side slopes, and concave toeslopes that receive runoff from the higher adjacent soils. There are many boulders and stones which cover 3 to 15 percent of the surface. Individual areas are oblong or irregularly shaped, and range from 5 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, dark grayish brown silty clay loam with 10 percent channers

Subsurface layers:

7 to 12 inches, pale brown friable channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

12 to 22 inches, light brownish gray and dark yellowish brown, friable and firm, channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

Subsoil:

22 to 35 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

35 to 50 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:

50 to 60 inches, yellowish brown firm channery silty clay loam, with gray iron depletions, and 15 percent channers

60 to 72 inches, yellowish brown firm very gravelly silty clay loam, with 40 percent gravel

Included in mapping are small areas of poorly drained Brinkerton soils in slight depressions and along drainageways, and Cavode soils which have more clay in the subsoil than the Portville soil. Also included are small areas of moderately well drained Buchanan soils in more sloping areas, and small areas of soils having bedrock within a depth of 40 inches. Areas that are stony, and areas that have more boulders on the surface are also included. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and subsurface layers, and moderately slow or slow in the fragipan and substratum

Available water capacity: Very low to moderate

Soil reaction: Very strongly acid to moderately acid in the surface layer, subsurface layer, and subsoil; and very strongly acid to slightly acid in the substratum

Water table: Perched at a depth of 0.5 to 1.5 feet from November through May

Flooding hazard: None

Depth to bedrock: More than 6 feet

Most of the acreage is in woodland. There are some areas that have been pastured and are reverting to woodland.

This soil is not suited to cultivated crops due to the excessive amounts of boulders on the surface. Boulders make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Boulders on the surface limit reseeding and the application of lime and fertilizer. Overgrazing and grazing when the soil is wet are concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Excessive surface boulders limit the use of logging equipment.

The depth to saturated zone, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Boulders and large stones on the soil surface can make excavation difficult and costly.

Depth to saturated zone, frost action, shrink-swell potential and boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome the wetness limitation, reduces shrink-swell potential, and reduces the potential for frost action. Boulders and large stones on the soil surface can make excavation difficult and costly.

The depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability. Boulders may hinder site preparation and excavation. The selection of a nearby site that is better drained and has fewer boulders will help overcome these limitations.

Erosion is a moderate hazard if the plant cover is removed during construction. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

189C—Portville silty clay loam, 8 to 15 percent slopes, extremely bouldery

This soil is strongly sloping, very deep, and somewhat poorly drained. It is on hillsides, lower colluvial side slopes, and concave toeslopes that receive runoff from the higher adjacent soils. There are many boulders and stones that cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 7 inches, dark grayish brown silty clay loam with 10 percent channers

Subsurface layers:

7 to 12 inches, pale brown friable channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 15 percent channers

12 to 22 inches, light brownish gray and dark yellowish brown, friable and firm, channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

Subsoil:

22 to 35 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 20 percent channers

35 to 50 inches, yellowish brown very firm channery silt loam, with strong brown iron accumulations and light brownish gray iron depletions, and 30 percent channers

Substratum:
50 to 60 inches, yellowish brown firm channery silty clay loam, with gray iron depletions, and 15 percent channers
60 to 72 inches, yellowish brown firm very gravelly silty clay loam, with 40 percent gravel

Included in mapping are small areas of poorly drained Brinkerton soils in slight depressions and along drainageways, and Cavode soils which do have more clay in the subsoil than the Portville soil. Also included are small areas of moderately well drained Buchanan soils in more sloping areas and small areas of soils having bedrock within a depth of 40 inches. Areas that are stony and areas that have more boulders on the surface are also included. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate or moderately slow in the surface and subsurface layers, and moderately slow or slow in the fragipan and substratum
Available water capacity: Very low to moderate
Soil reaction: Very strongly acid to moderately acid in the surface layer, subsurface layer, and subsoil; and very strongly acid to slightly acid in the substratum
Water table: Perched at a depth of 0.5 to 1.5 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage is in woodland. There are some areas that have been pastured and are reverting to woodland.

This soil is not suited to cultivated crops due to the excessive amounts of boulders on the surface. Boulders on the surface make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Boulders on the surface limit reseeding and the application of lime and fertilizer. Overgrazing and grazing when the soil is wet are concerns in managing pasture. Grazing when the soil is wet causes surface compaction, restricts plant growth, and can deplete the stand of pasture grasses, and thus result in serious erosion.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best. Excessive surface boulders limit the use of logging equipment. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to saturated zone, slope, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Depth to saturated zone, frost action, slope, shrink-swell potential, and boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome the wetness limitation, reduces shrink-swell potential, and reduces the potential for frost action. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

The depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Installing a drainage system in the area around the absorption field reduces the seasonal wetness, and adding permeable fill material helps to overcome the seasonal wetness and the restricted permeability. Boulders may hinder site preparation and excavation. Selecting a nearby site with fewer boulders on the surface will help overcome this limitation.

Erosion is a serious hazard if the plant cover is removed during construction. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

195C—Mandy channery silt loam, 3 to 15 percent slopes, extremely bouldery

This soil is gently sloping and strongly sloping, moderately deep, and well drained. It is on hilltops that receive little or no runoff from higher adjacent soils and side slopes that receive some runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:
2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers
13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers
24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers
33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of moderately well drained soils, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Areas which are almost covered with boulders are present in spots, especially along drainageways. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very Low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to boulders on the surface. The boulders make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Boulders on the surface hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture, and erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Excessive surface boulders limit the use of logging equipment.

The depth to bedrock, surface boulders, and slope are the main limitations if this soil is used as a site for dwellings with basements. Bedrock and boulders on the soil surface can make excavation difficult and costly. Land grading and building on the contour help to overcome the slope limitation.

Slope, frost action, boulders, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets will minimize excavation and help to overcome the limitations of boulders and depth to bedrock. Adding coarse textured subgrade or base material will reduce the potential for frost action.

Depth to bedrock and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Bedrock and boulders on the surface can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

195D—Mandy channery silt loam, 15 to 25 percent slopes, extremely bouldery

This soil is moderately steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:

2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers

13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers

24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers

33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of similar but moderately well drained soil, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Areas which are almost covered with boulders are present in spots, especially along drainageways. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to boulders on the surface and moderately steep slopes. The boulders make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Boulders on the surface hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture, and erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Excessive surface boulders limit the use of logging equipment.

The depth to bedrock, surface boulders, and slope are the main limitations if this soil is used as a site for dwellings with basements. Bedrock and boulders on the soil surface can make excavation difficult and costly. Land grading and building on the contour help to overcome the slope limitation.

Slope, frost action, surface boulders, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets will minimize excavation and help to overcome the limitations of boulders, depth to bedrock, and slope. Adding coarse textured subgrade or base material will reduce the potential for frost action.

The slope, depth to bedrock, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Bedrock and boulders on or near the surface can make excavation difficult and costly. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material. Extensive land modification is needed to overcome the slope.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

195E—Mandy channery silt loam, 25 to 50 percent slopes, extremely bouldery

This soil is steep and very steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Sandstone and siltstone bedrock is at a depth of 20 to 40 inches. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 2 inches, very dark brown channery silt loam 20 percent channers

Subsoil:
2 to 13 inches, strong brown very friable channery silt loam, with 30 percent channers
13 to 24 inches, yellowish brown friable very channery silt loam, with 50 percent channers
24 to 33 inches, yellowish brown very friable extremely flaggy silt loam, with 65 percent flagstones and channers
33 inches, fractured siltstone and sandstone bedrock

Included in mapping are small areas of similar but moderately well drained soil, and well drained Carrollton soils which have less rock fragments in the subsoil and more clay than Mandy soils. Well drained Kinzua soils are included where the bedrock is deeper than 40 inches below the surface. Areas which are almost covered with boulders are present in spots, especially along drainageways. Also included are areas where the bedrock is within 20 inches of the surface. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Very low to moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used as woodland and wildlife habitat. Some of the less sloping areas are idle, or are used as pasture.

This soil is not suited to cultivated crops or hay due to the steep slopes and boulders on the surface. Boulders and steep or very steep slopes make mechanical cultivation and harvesting activities impractical or impossible. A plant cover that controls runoff and erosion is essential.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Boulders on the surface and steep or very steep slopes hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

The depth to bedrock, surface boulders, and slope are the main limitations if this soil is used as a site for dwellings with basements. Bedrock and boulders on the soil surface can make excavation difficult and costly. Land grading and building on the contour may help to overcome the slope limitation. Alternative sites should be considered for this use.

Slope, frost action, boulders, and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets will minimize excavation and help to overcome the limitations of steep or very steep slopes, boulders and depth to bedrock. Adding coarse textured subgrade or base material will reduce the potential for frost action.

The slope, depth to bedrock, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Bedrock and boulders on or near the surface can make excavation difficult and costly. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Extensive land modification is needed to overcome the slope. Alternative sites should be considered for this use.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

199C—Buchanan silt loam, 8 to 15 percent slopes, extremely bouldery

This soil is strongly sloping, very deep, and moderately well drained. It is on hillsides and lower colluvial side slopes that receive runoff from the higher adjacent soils. Boulders and large stones cover 3 to 15 percent of the soil surface. Individual areas are rectangular and range from 5 to 30 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:

6 to 16 inches, yellowish brown very friable channery silt loam, with 15 percent channers

16 to 22 inches, yellowish brown friable channery silt loam, with 15 percent channers

22 to 33 inches, light olive brown firm channery clay loam, with light brownish gray iron depletions and strong brown iron accumulations, and 20 percent channers

33 to 45 inches, olive brown very firm channery silt loam, with light brownish gray iron depletions and strong brown iron accumulations, and 30 percent channers

Substratum:

45 to 72 inches, olive brown firm very gravelly silt loam, with 50 percent gravel

Included in mapping are small areas of the somewhat poorly drained Portville soils along drainageways and in seepage spots, and small areas of well drained Rayne soils on slight rises and knolls which do not have a fragipan. Also included are small areas of well drained Hartleton soils which have more channers in the subsoil and have bedrock within 40 to 60 inches of the surface, and small areas of Buchanan soils that have channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow in the fragipan and substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: Perched at a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to many boulders on the surface. The boulders make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Boulders on the surface hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

The depth to saturated zone, slope, shrink-swell potential, and surface boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings, and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Depth to saturated zone, slope, frost action, shrink-swell potential, and surface boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

The depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability. Large boulders on the surface and in the soil can make excavation costly. Suitable additional fill material may be needed.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

199D—Buchanan silt loam, 15 to 25 percent slopes, extremely bouldery

This soil is moderately steep, very deep, and moderately well drained. It is on smooth colluvial hillsides and valley sides that receive runoff from the higher adjacent soils. Boulders and large stones cover 3 to 15 percent of the soil surface. Individual areas are oblong and narrow, and range from 10 to 40 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 6 inches, dark grayish brown silt loam with 10 percent channers

Subsoil:
6 to 16 inches, yellowish brown very friable channery silt loam, with 15 percent channers
16 to 22 inches, yellowish brown friable channery silt loam, with 15 percent channers
22 to 33 inches, light olive brown firm channery clay loam, with light brownish gray iron depletions and strong brown iron accumulations, and 20 percent channers
33 to 45 inches, olive brown very firm channery silt loam, with light brownish gray iron depletions and strong brown iron accumulations, and 30 percent channers

Substratum:
45 to 72 inches, olive brown firm very gravelly silt loam, with 50 percent gravel

Included in mapping are small areas of the somewhat poorly drained Portville soils along drainageways and in seepage spots, and small areas of well drained Rayne soils on slight rises and knolls which do not have a fragipan. Also included are small areas of well drained Hartleton soils which have more channers in the subsoil and have bedrock within 40 to 60 inches of the surface, and small areas of Buchanan soils that have channery fragments in the surface layer. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil above the fragipan, slow in the fragipan and substratum
Available water capacity: Low to high
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: Perched at a depth of 1.5 to 2.0 feet from November through May
Flooding hazard: None
Depth to bedrock: More than 6 feet

Most of the acreage of this soil is in woodland. A few areas are used for unimproved pasture.

This soil is not suited to cultivated crops or hay due to many boulders on the surface and the moderately steep slopes. The boulders and slopes make mechanical cultivation and harvesting activities impractical or impossible.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. Boulders on the surface and the moderately steep slopes hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. Grazing when the soil is wet early in spring can result in surface compaction, damage to the pasture and erosion. Using proper stocking rates, controlling weeds and brush, and deferring grazing when the soil is wet are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

The depth to saturated zone, slope, shrink-swell potential, and surface boulders are the main limitations if this soil is used as a site for dwellings with basements. Installing drains around footings and sealing foundations and basement walls will help to prevent excessive wetness in basements. Installing interceptor drains and diversion ditches in upslope areas diverts surface and subsurface water from the dwellings. Land grading and building on the contour help to overcome the slope limitation. Boulders and large stones on the soil surface can make excavation difficult and costly.

Slope, depth to saturated zone, frost action, shrink-swell potential, and surface boulders are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems help to overcome these limitations. Land grading and building on the contour help to overcome the slope limitation. Large boulders and stones in and on the soil surface can make excavation difficult and costly.

The slope, depth to saturated zone, depth to dense material, restricted permeability, and surface rock fragments are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the moderately steep slopes. Installing a subsurface drainage system upslope from the absorption field and adding permeable fill material help to overcome seasonal wetness and the restricted permeability. Boulders and large stones on the surface hinder excavation.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 7s.

289B—Ceres channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, deep, and well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark brown channery silt loam with 20 percent channers

Subsoil:
3 to 7 inches, reddish brown very friable channery silt loam with 15 percent channers
7 to 12 inches, dusky red very friable channery silt loam with 15 percent channers
12 to 22 inches, weak red friable channery silt loam, with 30 percent channers
22 to 29 inches, weak red friable very channery silty clay loam, with 40 percent channers

Substratum:
29 to 44 inches, weak red firm extremely channery silt loam, with 75 percent channers
44 inches, dusky red interbedded shale and siltstone bedrock

Included in mapping are small areas of deeper, moderately well drained Eldred soils; well drained Kinzua soils; and reddish colored, somewhat poorly drained soils along drainageways and in seepage spots. Eldred and Kinzua soils are not as red in the subsoil and substratum. Carrollton soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas similar to the Ceres soils, but brownish in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Moderate or high
Soil reaction: Extremely acid to neutral in the solum, and very strongly acid to moderately acid in the substratum
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most of the areas are wooded, and some of the acreage is idle land that is reverting to brush. Some areas have been cleared and are used for row crops, alfalfa, hay or pasture in support of dairy farming. This soil meets the requirements for prime farmland.

This soil is well suited to all of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Erosion may be a hazard if the soil is intensively cultivated and not protected by a plant cover. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing are good management practices.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

Depth to bedrock is the main limitation if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock.

Frost action is the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the potential for frost action.

The depth to bedrock is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Engineering and design modifications are needed if onsite waste disposal systems are installed. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 2e.

289C—Ceres channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, deep, and well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above

1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark brown channery silt loam with 20 percent channers

Subsoil:
3 to 7 inches, reddish brown very friable channery silt loam with 15 percent channers
7 to 12 inches, dusky red very friable channery silt loam with 15 percent channers
12 to 22 inches, weak red friable channery silt loam, with 30 percent channers
22 to 29 inches, weak red friable very channery silty clay loam, with 40 percent channers

Substratum:
29 to 44 inches, weak red firm extremely channery silt loam, with 75 percent channers
44 inches, dusky red interbedded shale and siltstone bedrock

Included in mapping are small areas of deeper moderately well drained Eldred soils, well drained Kinzua soils, and reddish colored somewhat poorly drained soils along drainageways and in seepage spots. Eldred and Kinzua soils are not as red in the subsoil and substratum. Carrollton soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas similar to the Ceres soils, but brownish in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Moderate or high
Soil reaction: Extremely acid to neutral in the solum, and very strongly acid to moderately acid in the substratum
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most of the areas are wooded, and some of the acreage is idle land that is reverting to brush. Some areas have been cleared and are used for row crops, alfalfa, hay or pasture in support of dairy farming.

This soil is moderately well suited to all of the crops commonly grown in the county. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Erosion is a hazard if the soil is intensively cultivated and not protected by a plant cover. Lime is needed for most crops, especially legumes. Crops respond well to sufficient applications of fertilizer. Incorporating crop residue into the soil, minimizing tillage, and growing cover crops help to maintain tilth and control erosion. Farming on the contour and stripcropping will help to control erosion and conserve water during the growing season.

This soil is well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of stands and to ensure good plant growth. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing are good management practices.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

Slope and depth to bedrock are the limitations if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome the slope limitation. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock.

Frost action and slope are the main limitations if this soil is used as a site for local roads and streets. Land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the potential for frost action.

The depth to bedrock is a limitation if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

Erosion is a hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 3e.

289D—Ceres channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, deep, and well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark brown channery silt loam with 20 percent channers

Subsoil:
3 to 7 inches, reddish brown very friable channery silt loam with 15 percent channers
7 to 12 inches, dusky red very friable channery silt loam with 15 percent channers
12 to 22 inches, weak red friable channery silt loam, with 30 percent channers
22 to 29 inches, weak red friable very channery silty clay loam, with 40 percent channers

Substratum:
29 to 44 inches, weak red firm extremely channery silt loam, with 75 percent channers
44 inches, dusky red interbedded shale and siltstone bedrock

Included in mapping are small areas of deeper moderately well drained Eldred soils, well drained Kinzua soils, and reddish colored somewhat poorly drained soils along drainageways and in seepage spots. Eldred and Kinzua soils are not as red in the subsoil and substratum. Carrollton soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas similar to the Ceres soils, but brownish in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Moderate or high

Soil reaction: Extremely acid to neutral in the solum, and very strongly acid to moderately acid in the substratum
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most areas are used as woodland. Some areas are used for hay or pasture, or for limited use of row crops in support of dairy farming.

This soil is poorly suited to cultivated crops because of the hazard of erosion and slope. The growing season is shorter for this soil than for nearby valley soils at lower elevations. The use of short-season or early maturing crop varieties is recommended. Because of the moderately steep slopes, operating farm machinery is difficult and hazardous on this soil. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used to reduce the erosion hazard. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion.

This soil is better suited to hay and pasture than to cultivated crops. Overgrazing restricts plant growth and can deplete the stand of desirable pasture plants, especially in dry years. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing are good management practices. Because the soil is naturally acid, applications of lime are needed to improve the growth of most pasture plants.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope and depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Land grading and shaping help to overcome the slope limitation. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the potential for frost action.

The slope and depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing a drainage system in the area around the absorption fields and adding permeable fill material help to overcome any lateral seepage through fractures in the bedrock.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 4e.

289E—Ceres channery silt loam, 25 to 35 percent slopes

This soil is steep, deep, and well drained. It is on hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark brown channery silt loam with 20 percent channers

Subsoil:
3 to 7 inches, reddish brown very friable channery silt loam with 15 percent channers
7 to 12 inches, dusky red very friable channery silt loam with 15 percent channers
12 to 22 inches, weak red friable channery silt loam, with 30 percent channers
22 to 29 inches, weak red friable very channery silty clay loam, with 40 percent channers

Substratum:
29 to 44 inches, weak red firm extremely channery silt loam, with 75 percent channers
44 inches, dusky red interbedded shale and siltstone bedrock

Included in mapping are small areas of deeper moderately well drained Eldred soils, well drained Kinzua soils, and reddish colored somewhat poorly drained soils along drainageways and in seepage spots. Eldred and Kinzua soils are not as red in the subsoil and substratum. Carrollton soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas similar to the Ceres soils, but brownish in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Moderate or high
Soil reaction: Extremely acid to neutral in the solum, and very strongly acid to moderately acid in the substratum
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most areas are wooded and provide habitat for wildlife. Some of the acreage is idle land, or is used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the steep slope. A plant cover that controls runoff and erosion is essential.

This soil is poorly suited for pasture. A good plant cover needs to be maintained. Prevention of overgrazing helps to protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope and depth to bedrock are the main limitations if this soil is used as a site for dwellings with basements. Land grading and shaping may help to overcome the slope limitation. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock.

Slope and frost action are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material and installing roadside drainage systems reduce the potential for frost action.

The slope and depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Extensive engineering and design modifications are necessary to overcome the slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 6e.

289F—Ceres channery silt loam, 35 to 50 percent slopes

This soil is very steep, deep, and well drained. It is on uniformly sloping hillsides and side slopes that receive runoff from the higher adjacent soils. It occurs at elevations above 1,800 feet, where the mean annual air temperature is less than 45 degrees F. Individual areas are oblong or rectangular, and range from 10 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 3 inches, very dark brown channery silt loam with 20 percent channers

Subsoil:
3 to 7 inches, reddish brown very friable channery silt loam with 15 percent channers
7 to 12 inches, dusky red very friable channery silt loam with 15 percent channers
12 to 22 inches, weak red friable channery silt loam, with 30 percent channers
22 to 29 inches, weak red friable very channery silty clay loam, with 40 percent channers

Substratum:
29 to 44 inches, weak red firm extremely channery silt loam, with 75 percent channers
44 inches, dusky red interbedded shale and siltstone bedrock

Included in mapping are small areas of deeper moderately well drained Eldred soils, well drained Kinzua soils, and reddish colored somewhat poorly drained soils along drainageways and in seepage spots. Eldred and Kinzua soils are not as red in the subsoil and substratum. Carrollton soils, which have bedrock within a depth of 40 inches, are also included. Other inclusions are small areas similar to the Ceres soils, but brownish in color. Included areas make up about 10 to 20 percent of this unit.

Soil properties—

Permeability: Moderate or moderately rapid throughout the profile
Available water capacity: Moderate or high
Soil reaction: Extremely acid to neutral in the solum, and very strongly acid to moderately acid in the substratum
Water table: At a depth of more than 6.0 feet

Flooding hazard: None
Depth to bedrock: 40 to 60 inches

Most areas are wooded and provide habitat for wildlife.

This soil is not suited to cultivated crops, hay or pasture. The very steep slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

Slope severely limits construction and is the main limitation if this soil is used as a site for dwellings with basements and local roads and streets. Extensive land modification may be necessary to overcome the slope. Alternative sites should be considered for these uses.

The depth to bedrock and the very steep slopes are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are necessary to overcome these limitations. Alternative sites should be considered for this use.

Erosion is a very severe hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

400—Wakeville silt loam

This soil is nearly level, very deep, and somewhat poorly drained. It occupies sections of flood plains along major streams in the northern part of the county. Individual areas are generally oblong in shape, and parallel to the adjacent streams. They range from 5 to 50 acres in size. Slope is generally smooth and ranges from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 10 inches, dark grayish brown silt loam

Subsoil:
10 to 16 inches, light olive brown friable silt loam, with gray iron depletions
16 to 34 inches, grayish brown friable silt loam, with yellowish brown iron accumulations and gray iron depletions
34 to 43 inches, dark grayish brown friable silt loam, with olive brown and yellowish brown iron accumulations

Substratum:
43 to 52 inches, grayish brown to gray friable silt loam, with yellowish brown iron accumulations
52 to 72 inches, very dark grayish brown very friable very gravelly loamy sand, with 45 percent gravel

Included with this soil in mapping are small areas of poorly drained Wayland soils in slight depressions and along older meander scars and oxbows. Also included are small areas of moderately well drained Teel soils on slightly higher areas of the flood plains, and areas of Udifluvents and Fluvaquents, which consist of unconsolidated alluvial deposits. Where the alluvial soils adjoin glacial till deposits, there are small inclusions of very poorly drained till soils. These included soils make up about 15 to 25 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: High
Soil reaction: Moderately acid to neutral to depth of 40 inches, and moderately acid to slightly alkaline below that depth
Water table: At a depth of 0.5 to 1.5 feet from
November through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Wakeville soils generally are cultivated, and used for row crops in support of dairy operations. There are some idle and woodland areas. These areas are generally small isolated sections which are difficult to farm. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. Flooding is a hazard. It can delay planting or damage crops in some years. The seasonal high water table also can delay tillage and planting, and make harvesting difficult, especially in low-lying areas. The wetness can be reduced by installing subsurface drains in areas where outlets are available. If a drainage system is installed, the soil is well suited to most of the crops commonly grown in the county. This soil has a stone free surface layer and can be easily tilled. Minimum tillage, incorporating crop residue into the soil, and growing cover crops and occasional sod crops help to maintain tilth and the content of organic matter. Measures that protect streambanks are needed in some areas to prevent lateral erosion into the fields.

Pasture and hay crops do well on this soil. Overgrazing and grazing when the soil is wet can cause compaction, deplete the stand of pasture plants, and restricted plant growth. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush, and deferring grazing in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The hazard of flooding and the depth to saturated zone are the main limitations if this soil is used as a site for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Alternative sites that are better drained and not subject to flooding should be considered for this use.

The hazard of flooding, depth to saturated zone, and frost action are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action. Building on raised fill material reduces the hazard of flooding and helps to overcome the wetness.

The hazard of flooding and the depth to saturated zone are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modification are needed if onsite waste disposal systems are installed. Building on raised fill material helps to overcome the seasonal wetness and reduces the hazard of flooding. Alternative sites that are better drained and not subject to flooding should be considered for this use.

The capability subclass is 3w.

496B—Gilpin channery silt loam, 3 to 8 percent slopes

This soil is gently sloping, moderately deep, and well drained. It is on convex areas of broad hilltops that receive little or no runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Shale, siltstone or sandstone bedrock is at a depth of 20 to 40 inches. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:
4 to 16 inches, yellowish brown friable channery silt loam with 30 percent channers
16 to 26 inches, yellowish brown firm channery silty clay loam with 30 percent channers

Substratum:
26 to 35 inches, strong brown and grayish brown firm very channery silt loam and silty clay loam with 40 percent channers
35 inches, thinly bedded siltstone and sandstone bedrock

Included in mapping are areas of moderately well drained soils, and small areas of somewhat poorly drained Portville soils along drainageways and in seepage spots. Small areas of Rayne soils, which are very deep to bedrock, are also included. Some areas of well drained Hartleton soils, which are deep to bedrock and contain more rock fragments in the subsoil, are also included. In some areas the bedrock may be within 20 inches of the surface. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low or moderate
Soil reaction: Extremely acid or strongly acid throughout the profile
Water table: At a depth of 2.0 to 3.3 feet from November through May
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used for hay or pasture, or for row crops grown in support of dairy farming. Some areas that were formerly cleared for crop production are now idle, and are reverting to brush and trees. The remaining areas are wooded. This soil meets the requirements for prime farmland.

The soil is well suited to most of the crops commonly grown in the county. Erosion may be a hazard on long slopes in intensively cultivated areas. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. Incorporating crop residue into the soil, rotating crops, minimizing tillage, and growing cover crops, help to maintain tilth, increase the content of organic matter, and control erosion. Crops respond well to applications of lime and fertilizer. Droughtiness is a limitation in some years.

This soil is well suited to hay and early spring pasture. Overgrazing restricts plant growth and can deplete the stand of desirable pasture plants, especially in dry years. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually, and applying sufficient lime and fertilizer are good management practices.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is moderate. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival.

The depth to bedrock is the main limitation if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock.

Frost action and depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock and depth to saturated zone are limitations if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. Installing a drainage system in the area around the absorption field and adding permeable fill material help to overcome seasonal wetness.

Erosion is a hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, helps to control erosion and sedimentation.

The capability subclass is 2e.

496C—Gilpin channery silt loam, 8 to 15 percent slopes

This soil is strongly sloping, moderately deep, and well drained. It is on convex areas of broad hilltops that receive little or no runoff from higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Shale, siltstone or sandstone bedrock is at a depth of 20 to 40 inches. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:
4 to 16 inches, yellowish brown friable channery silt loam with 30 percent channers
16 to 26 inches, yellowish brown firm channery silty clay loam with 30 percent channers

Substratum:
26 to 35 inches, strong brown and grayish brown firm very channery silt loam and silty clay loam with 40 percent channers
35 inches, thinly bedded siltstone and sandstone bedrock

Included in mapping are areas of moderately well drained soils, and small areas of somewhat poorly drained Portville soils along drainageways and in seepage spots. Small areas of Rayne soils, which are very deep to bedrock, are also included. Some areas of well drained Hartleton soils, which are deep to bedrock and contain more rock fragments in the subsoil, are also included. In some areas the bedrock may be within 20 inches of the surface. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile

Available water capacity: Low or moderate
Soil reaction: Extremely acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Some areas are used for hay or pasture, or for row crops grown in support of dairy farming. Many areas that were formerly cleared for crop production are now idle, and are reverting to brush and trees. The remaining areas are wooded.

The soil is moderately well suited to most of the crops commonly grown in the county. Erosion is a moderate hazard in intensively cultivated areas. Contour farming and stripcropping in combination with diversions, terraces, or grassed waterways help to control erosion. Incorporating crop residue into the soil, rotating crops, minimizing tillage, and growing cover crops, help to maintain tilth, increase the content of organic matter, and control erosion. Crops respond well to applications of lime and fertilizer. Droughtiness is a limitation in some years.

This soil is well suited to hay and early spring pasture. Overgrazing restricts plant growth and can deplete the stand of desirable pasture plants, especially in dry years. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, controlling weeds and brush by mowing annually, and applying sufficient lime and fertilizer are good management practices.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is slight and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion, and minimizes gullying along the trails.

The depth to bedrock and the slope are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock. Land modification and leveling may be necessary to overcome the slope limitation.

Frost action, slope, and the depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock is a limitation if this soil is used as a site for septic tank absorption fields. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a hazard on construction sites. Minimizing removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation.

The capability subclass is 3e.

496D—Gilpin channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from the higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Shale, siltstone or sandstone bedrock is at a depth of 20 to 40 inches. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 4 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:

4 to 16 inches, yellowish brown friable channery silt loam with 30 percent channers

16 to 26 inches, yellowish brown firm channery silty clay loam with 30 percent channers

Substratum:

26 to 35 inches, strong brown and grayish brown firm very channery silt loam and silty clay loam with 40 percent channers

35 inches, thinly bedded siltstone and sandstone bedrock

Included in mapping are areas of moderately well drained soils, and small areas of somewhat poorly drained Portville soils along drainageways and in seepage spots. Small areas of Rayne soils, which are very deep to bedrock, are also included. Some areas of well drained Hartleton soils, which are deep to bedrock and contain more rock fragments in the subsoil, are also included. In some areas the bedrock may be within 20 inches of the surface. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low or moderate
Soil reaction: Extremely acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used as woodland. Some areas are used for hay or pasture, or for row crops grown in support of dairy farming.

This soil is poorly suited to cultivated crops because of the hazard of erosion and the moderately steep slope. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Because of the slope, operating farm machinery is difficult and hazardous on this soil. Droughtiness is a limitation in some years.

This soil is better suited to hay and pasture than to cultivated crops. Overgrazing restricts plant growth and can deplete the stand of desirable pasture plants, especially in dry years. Erosion is a hazard in overgrazed areas. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are good management practices. Because the soil is naturally acid, applications of lime are needed to improve the growth of most pasture plants.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to bedrock and the slope are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock. Extensive land modification and leveling may be necessary to overcome the slope limitation.

Slope, frost action, and the depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock and the slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications may be necessary to overcome the moderately steep slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, helps to control erosion and sedimentation.

The capability subclass is 4e.

496E—Gilpin channery silt loam, 25 to 35 percent slopes

This soil is steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from the higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Shale, siltstone and sandstone bedrock is at a depth of 20 to 40 inches. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:

0 to 4 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:

4 to 16 inches, yellowish brown friable channery silt loam with 30 percent channers

16 to 26 inches, yellowish brown firm channery silty clay loam with 30 percent channers

Substratum:

26 to 35 inches, strong brown and grayish brown firm very channery silt loam and silty clay loam with 40 percent channers

35 inches, thinly bedded siltstone and sandstone bedrock

Included in mapping are areas of moderately well drained soils, and small areas of somewhat poorly drained Portville soils along drainageways and in seepage spots. Small areas of Rayne soils, which are very deep to bedrock, are also included. Some areas of well drained Hartleton soils, which are deep to bedrock and contain more rock fragments in the subsoil, are also included. In some areas the bedrock may be within 20 inches of the surface. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile

Available water capacity: Low or moderate
Soil reaction: Extremely acid or strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are used as woodland. Some areas are used for hay or pasture.

This soil is not suited to cultivated crops or hay because of the slope and very severe hazard of erosion. Operating farm equipment is very difficult because of the steep slope. A plant cover that controls runoff and erosion is essential.

This soil is poorly suited for pasture. A good plant cover needs to be maintained. Prevention of overgrazing helps protect the soil from erosion and gullying. Reseeding pastures is difficult because of the slope.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The depth to bedrock and the slope are the main limitations if this soil is used as a site for dwellings with basements. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Installing drains around footings helps to remove any lateral seepage through fractures in the bedrock. Extensive land modification and leveling is necessary to overcome the slope limitation.

Slope, frost action, and the depth to bedrock are the main limitations if this soil is used as a site for local roads and streets. Extensive land modification and leveling may be necessary to overcome the slope limitation. Adding coarse textured subgrade or base material reduces the potential for frost action. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary.

The depth to bedrock and the slope are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications may be necessary to overcome the steep slope. The bedrock generally can be ripped with a backhoe. In some areas, hard bedrock can make excavation difficult and costly, and blasting may be necessary. Care is needed to prevent the contamination of ground water resulting from seepage through the jointed and fractured bedrock. The absorption field should be installed in suitable fill material.

Erosion is a serious hazard on construction sites. Minimal removal of vegetation, mulching, and quickly establishing plant cover help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 6e.

496F—Gilpin channery silt loam, 35 to 50 percent slopes

This soil is very steep, moderately deep, and well drained. It is on uniformly sloping valley sides that receive runoff from the higher adjacent soils. It is in areas where the topography is influenced by the underlying bedrock. Shale, siltstone and sandstone bedrock is at a depth of 20 to 40 inches. Individual areas are long and narrow, and range from 10 to 50 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 15 percent channers

Subsoil:
4 to 16 inches, yellowish brown friable channery silt loam with 30 percent channers
16 to 26 inches, yellowish brown firm channery silty clay loam with 30 percent channers

Substratum:
26 to 35 inches, strong brown and grayish brown firm very channery silt loam and silty clay loam with 40 percent channers
35 inches, thinly bedded siltstone and sandstone bedrock

Included in mapping are areas of moderately well drained soils, and small areas of somewhat poorly drained Portville soils along drainageways and in seepage spots. Small areas of Rayne soils, which are very deep to bedrock, are also included. Some areas of well drained Hartleton soils, which are deep to bedrock and contain more rock fragments in the subsoil, are also included. In some areas the bedrock may be within 20 inches of the surface. Included areas make up about 10 to 20 percent of the unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Low or moderate
Soil reaction: Extremely acid to strongly acid throughout the profile
Water table: At a depth of more than 6 feet
Flooding hazard: None
Depth to bedrock: 20 to 40 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The very steep slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

Slope severely limits construction. It is the main limitation for dwellings with basements and local roads and streets. Extensive land modification may be necessary to overcome the slope. Alternative sites should be considered for these uses.

The slope and depth to bedrock are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are necessary to overcome these limitations. Alternative sites should be considered for this use.

Erosion is a very severe hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, helps to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

497D—Rayne channery silt loam, 15 to 25 percent slopes

This soil is moderately steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. Individual areas are oblong or rectangular, and range from 15 to 75 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 31 inches, brown friable channery silt loam, with 20 percent channers
31 to 38 inches, dark yellowish brown firm channery silt loam, with 25 percent channers

Substratum:
38 to 72 inches, light olive brown firm channery silt loam, with 25 percent channers

Included in mapping are small areas of soils that are similar to Rayne, but are moderately well drained or somewhat poorly drained, and occur along drainageways and in seepage spots. Small areas of Gilpin soils, which have bedrock within a depth of 40 inches, are also included. Also included are small areas of Hartleton soils which contain more rock fragments in the subsoil, and areas of Rayne soils that have a silt loam surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most of the acreage is in woodland, or is idle land that is reverting to brush. A few areas are used for hay or pasture. A small acreage is used for row crops.

This soil is poorly suited to cultivated crops because of the severe hazard of erosion and the slope limitation. Operating farm equipment is difficult and hazardous because of the moderately steep slope. Erosion is a serious hazard in cultivated areas. Cultivated crops should be grown only occasionally, and the maximum number of conservation practices should be used. Areas where conservation practices cannot be applied are better suited to deep-rooted legumes than to cultivated crops. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, tilling across the slope, stripcropping, and including sod crops in the cropping system help to maintain good tilth, increase the content of organic matter, and control erosion. Sufficient applications of lime and fertilizer are needed to maintain crop growth.

This soil is moderately well suited to hay and pasture. It is especially suitable for grazing early in the growing season. Overgrazing can restrict plant growth and increase the hazard of erosion. Deep-rooted legumes grow well, but applications of lime and fertilizer are required to maintain the quality of the stands and to ensure good plant growth. If plowing is necessary to establish a plant cover, plowing across the slope and leaving strips of sod help to control runoff. Using proper stocking rates, rotating livestock grazing, and controlling weeds and brush by mowing annually are the main management concerns.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements and for local roads and streets. Extensive land modification and grading may be needed to overcome the slope. Frost action is an additional limitation if this soil is used as a site for local roads and streets. Installing roadside drainage systems and adding coarse textured subgrade or base material reduce the potential for frost action.

The slope and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modification are needed if onsite waste disposal systems are installed. Extensive land modification is needed to overcome the moderately steep slope. Installing a subsurface drainage system upslope from the absorption field, and adding permeable fill material help to overcome the restricted permeability.

Erosion is a serious hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, helps to control erosion and sedimentation.

The capability subclass is 4e.

497E—Rayne channery silt loam, 25 to 35 percent slopes

This soil is steep, very deep, and well drained. It is on uniformly sloping valley sides that receive runoff from higher adjacent soils. Individual areas are oblong or occur as narrow strips on the side slopes. They range from 10 to several hundred acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 31 inches, brown friable channery silt loam, with 20 percent channers
31 to 38 inches, dark yellowish brown firm channery silt loam, with 25 percent channers

Substratum:
38 to 72 inches, light olive brown firm channery silt loam, with 25 percent channers

Included in mapping are small areas of soils that are similar to Rayne, but are moderately well drained or somewhat poorly drained, and occur along drainageways and in seepage spots. Small areas of Gilpin soils, which have bedrock within a depth of 40 inches, are also included. Also included are small areas of Hartleton soils which contain more rock fragments in the subsoil, and areas of Rayne soils that have a silt loam surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most areas are wooded and provide habitat for wildlife. Some of the acreage is idle land or is used as pasture.

This soil is not suited to cultivated crops or hay because of the slope and the very severe hazard of erosion. Operating farm equipment is very difficult because of the steep slope. A plant cover that controls runoff and erosion is essential.

The suitability of this soil for pasture is limited. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying.

Reseeding pastures is difficult because of the steep slope. Sufficient applications of lime and fertilizer are needed to improve native pastures.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements and for local roads and streets. Extensive land modification and grading may be needed to overcome the slope. Frost action is an additional limitation if this soil is used as a site for local roads and streets. Installing roadside drainage systems and adding coarse textured subgrade or base material, reduce the potential for frost action.

The slope and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the steep slope.

Erosion is a serious hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, helps to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 6e.

497F—Rayne channery silt loam, 35 to 50 percent slopes

This soil is very steep, very deep, and well drained. It is on hillsides and valley sides that receive runoff from the higher adjacent soils. Many areas on the valley sides are deeply dissected by V-shaped gullies. Individual areas are elongated or occur as narrow strips on the side slopes. They commonly are 20 to 75 acres, in size but range from 10 to several hundred acres.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 31 inches, brown friable channery silt loam, with 20 percent channers
31 to 38 inches, dark yellowish brown firm channery silt loam, with 25 percent channers

Substratum:
38 to 72 inches, light olive brown firm channery silt loam, with 25 percent channers

Included in mapping are small areas of soils that are similar to Rayne, but are moderately well drained or somewhat poorly drained, and occur along drainageways and in seepage spots. Small areas of Gilpin soils, which have bedrock within a depth of 40 inches, are also included. Also included are small areas of Hartleton soils which contain more rock fragments in the subsoil, and areas of Rayne soils that have a silt loam surface layer. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile

Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most areas are wooded and provide wildlife habitat.

This soil is not suited to cultivated crops, hay or pasture. The very steep slope and the very severe hazard of erosion are the main management concerns. The soil is too steep for the safe operation of farm machinery. A plant cover that controls runoff and erosion is essential.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails.

The slope is the main limitation if this soil is used as a site for dwellings with basements and for local roads and streets. Extensive land modification and grading may be needed to overcome the very steep slope. Frost action is an additional limitation if this soil is used as a site for local roads and streets. Installing roadside drainage systems and adding coarse textured subgrade or base material, reduce the potential for frost action. Alternative sites should be considered for these uses.

The slope and restricted permeability are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste systems are installed. Extensive land modification is needed to overcome the steep slope. Alternative sites should be considered for this use.

Erosion is a very serious hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 7e.

498E—Rayne channery silt loam, 25 to 35 percent slopes, extremely bouldery

This soil is steep, very deep, and well drained. It occurs on uniformly sloping valley sides that receive runoff from higher adjacent soils. Boulders and large stones cover 3 to 15 percent of the surface. Individual areas are oblong or rectangular, and range from 15 to 95 acres in size.

The typical sequence, depth, and composition of the layers of this soil are as follows—

Surface layer:
0 to 4 inches, very dark grayish brown channery silt loam with 20 percent channers

Subsoil:
4 to 16 inches, yellowish brown friable channery silt loam, with 20 percent channers
16 to 31 inches, brown friable channery silt loam, with 20 percent channers
31 to 38 inches, dark yellowish brown firm channery silt loam, with 25 percent channers

Substratum:
38 to 72 inches, light olive brown firm channery silt loam, with 25 percent channers

Included in mapping are small areas of soils that are similar to Rayne, but are moderately well drained or somewhat poorly drained, and occur along drainageways and in seepage spots. Small areas of Gilpin soils, which have bedrock within a depth of 40 inches, are also included. Also included are small areas of Hartleton soils which contain more rock fragments in the subsoil, and areas of Rayne soils that have a silt loam surface layer. Areas which are almost covered with boulders are present in spots, especially along drainageways. Included soils make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate throughout the profile
Available water capacity: Moderate or high
Soil reaction: Very strongly acid or strongly acid throughout the profile
Water table: At a depth of more than 6.0 feet
Flooding hazard: None
Depth to bedrock: More than 60 inches

Most areas are used as woodland and wildlife habitat.

This soil is not suited to cultivated crops or hay due to boulders on the surface, steep slope and the very severe hazard of erosion. A plant cover that controls runoff and erosion is essential.

This soil is poorly suited to pasture. Some areas may support unimproved pasture. The numerous boulders on the surface and the steep slope hinder reseeding. Overgrazing is the main concern in managing pasture because it can damage native pasture plants. A good plant cover is needed. Prevention of overgrazing helps to protect the soil from erosion and gullying.

The potential productivity of this soil for northern red oak is moderately high. The hazard of off-road or off-trail erosion is moderate and the hazard of erosion on roads and trails is severe. The potential for seedling mortality is low. Planting seedlings early in spring, when the soil is moist, helps to ensure their survival. Building logging roads and skid trails on the contour helps control erosion and minimizes gullying along the trails. Excessive surface boulders limit the use of logging equipment.

Slope and large boulders are the main limitations if this soil is used as a site for dwellings with basements. Extensive land modification and grading may be needed to overcome the slope. Designing the dwellings so that they conform to the natural slope of the land reduces the amount of grading required. Boulders on the soil surface can make excavation difficult and costly.

Slope, large stones and boulders on the surface and frost action are the main limitations if this soil is used as a site for local roads and streets. Careful planning and layout of roads and streets will minimize excavation, which can be difficult and costly, and help to overcome the limitations of boulders and slope. Adding coarse textured subgrade or base material, and installing roadside drainage systems reduce the potential for frost action.

The slope and surface boulders are limitations if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Boulders on the surface can make excavation difficult and costly. Extensive land modification is needed to overcome the steep slope. Alternative sites should be considered for this use.

Erosion is a serious hazard on construction sites. Minimizing the removal of vegetation, mulching, and quickly establishing plant cover, help to control erosion and sedimentation. In most areas the native plant cover should not be removed.

The capability subclass is 7s.

800—Holderton silt loam

This soil is nearly level, very deep and somewhat poorly drained. It is in low areas on flood plains along major streams in the southern part of the county. Individual areas generally are oblong in shape and commonly are parallel to the adjacent streams. They range from 5 to 40 acres in size. Slopes commonly are smooth and ranges from 0 to 3 percent.

The typical sequence, depth, and composition of the layers of this soil are as follow—

Surface layer:
0 to 6 inches, very dark grayish brown silt loam

Subsoil:
6 to 14 inches, brown friable fine sandy loam
14 to 28 inches, grayish brown very friable fine sandy loam, with brown iron accumulations, and 5 percent gravel
28 to 36 inches, grayish brown friable loam, with strong brown and yellowish brown iron accumulations, and 5 percent gravel

Substratum:
36 to 52 inches, dark grayish brown very friable gravelly loam, with yellowish brown and strong brown iron accumulations, and 25 percent gravel
52 to 72 inches, dark grayish brown loose very gravelly sandy loam with 35 percent gravel

Included in mapping are small areas of the poorly drained Wyalusing soils in slight depressions and along older meander scars, the moderately well drained Middlebury soils in the slightly higher positions on the landscapes, and soils that have a gravelly surface layer. Included areas make up about 15 to 25 percent of this unit.

Soil properties—

Permeability: Moderate in the surface layer and subsoil, and moderate or moderately rapid in the substratum
Available water capacity: Moderate or high
Soil reaction: Moderately acid to neutral in the surface layer and subsoil, slightly acid to slightly alkaline in the substratum
Water table: At a depth of 0.5 foot to 1.5 feet from November through May
Flooding hazard: Occasional, brief
Depth to bedrock: More than 6 feet

Most areas are used for row crops in support of dairy farming. Some of the acreage is in woodland, or idle land. Where drained, this soil meets the requirements for prime farmland.

This soil is moderately well suited to cultivated crops. Flooding can delay planting or damage crops in some years. The seasonal high water table can delay tillage and planting, and can make harvesting difficult, especially in low areas. The wetness can be reduced by installing subsurface drains in areas where adequate outlets are available. If a drainage system is installed, the soil is suited to the crops commonly grown in the county. It has a stone-free surface layer and can be easily tilled. Minimizing tillage, growing cover crops, incorporating crop residue into the soil, and growing occasional sod crops help to maintain tilth and the content of organic matter. Measures that protect streambanks are needed in some areas to prevent lateral erosion in the fields.

Hay and pasture crops grow well on this soil. Overgrazing and grazing when the soil is wet can cause surface compaction, restrict plant growth, and damage pasture plants. Using proper stocking rates, rotating grazing, controlling weeds and brush, and deferring grazing early in spring are the main management concerns.

The potential productivity of this soil for sugar maple is moderate. The hazard of off-road or off-trail erosion and the hazard of erosion on roads and trails are slight. The potential for seedling mortality is high. The seasonal wetness increases seedling mortality. Tree species that can withstand the seasonal wetness grow best.

The hazard of flooding and the depth to saturated zone are the main management concerns if this soil is used as a site for dwellings with basements. Fill material is needed to elevate the dwellings above the high water level during periods of flooding. Building on fill material, installing drains around footings, and sealing foundations and basement walls help to prevent excessive wetness in the basements. Alternative sites, out of the flood plain, should be considered for this use.

The hazard of flooding, depth to saturated zone, and frost action are the main management concerns if this soil is used as a site for local roads and streets. Adding coarse textured subgrade or base material reduces the potential for frost action. Building on raised fill material reduces the hazard of flooding and helps to overcome the wetness.

The hazard of flooding and the depth to saturated zone are management concerns if this soil is used as a site for septic tank absorption fields. Extensive engineering and design modifications are needed if onsite waste disposal systems are installed. Building on raised fill material helps to overcome the seasonal wetness and reduces the hazard of flooding. Alternative sites, out of the flood plain, should be considered for this use.

The capability subclass is 3w.

PG—Pits, gravel

This unit consists of areas from which sand and gravel have been removed. The sand and gravel are often still being excavated in many pits. The sides of the pits generally are steep, and the floor generally is level. Scattered piles of stones and boulders, and sloughed material, commonly are on the floor. Small pools of water are common in low areas in some of the pits, particularly in spring. The shape of excavated areas commonly are circular. They range from 5 to 30 acres in size.

Included in mapping are small areas of the very poorly drained Halsey soils in slight depressions. Also included are the well drained Valois soils in areas where the gravel pits adjoins glacial till; well drained Chenango soils in areas where the gravel pits adjoins gravelly outwash; and Udorthents where the soils exhibit little or no evidence of profile development. Included areas make up about 10 to 20 percent of this unit.

These pits generally do not support vegetation, but some of the older pits support scattered bushes and grasses. Because the soil material is droughty and very low in natural fertility, the vegetation commonly is sparse and its growth is stunted. Permeability varies. It is mainly moderately rapid or rapid. The water table is at various depths.

The pits generally are not suitable for farming or woodland because the topsoil has been removed, and the coarse textured subsoil material is generally not suitable for root development. The potential for wildlife habitat commonly is poor, although some small animals and birds may use the pits for shelter and refuge. Onsite investigation is needed to determine the potential for any proposed use, and the limitations affecting that use.

No capability subclass is assigned.

Ur—Urban land

This map unit consists of nearly level to strongly sloping areas in which 85 percent or more of the soil surface is covered with asphalt, concrete, or other impervious material. It includes parking lots, shopping and business centers, and industrial parks in the city of Olean. Individual map units generally range from 20 to more than 200 acres in size.

Included in mapping are small areas of soil that have not been altered or are not under an impervious cover. These areas are mostly lawns or other landscaped areas. Also included are some areas where several feet of fill have been placed on flood plains. The included soils consist of the well drained Chenango and Allard soils; moderately well drained Olean soils; and Udorthents. Included areas make up about 10 to 20 percent of this unit.

It is not practical to examine and identify the soils, Urban land. Careful onsite investigation is necessary to determine the suitability of abandoned areas for any proposed use. Some abandoned areas are suitable for asphalt-covered playgrounds or for other recreation uses requiring a hard, impervious surface.

No capability subclass is assigned.

W—Water

This map unit consists of areas of permanent surface water. It includes lakes, ponds, and perennial rivers and streams that were cartographically large enough to delineate at the scale of mapping.

Prime Farmland

Prime farmland is one of several kinds of important farmlands defined by the U.S. Department of Agriculture. It is of major importance in meeting the Nation's short- and long-range needs for food and fiber. Because the supply of high-quality farmland is limited, the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, should encourage and facilitate the wise use of our Nation's prime farmland.

Prime farmland, as defined by the U.S. Department of Agriculture, is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and is available for these uses. It could be cultivated land, pastureland, forestland, or other land, but it is not urban or built-up land or water areas. The soil qualities, growing season, and moisture supply are those needed for the soil to economically produce sustained high yields of crops when proper management, including water management, and acceptable farming methods are applied. In general, prime farmland has an adequate and dependable supply of moisture from precipitation or irrigation, a favorable temperature and growing season, acceptable acidity or alkalinity, an acceptable salt and sodium content, and few or no rocks. It is permeable to water and air. It is not excessively erodible or saturated with water for long periods, and it either is not frequently flooded during the growing season or is protected from flooding. Slope ranges mainly from 0 to 6 percent. More detailed information about the criteria for prime farmland is available at the local office of the Natural Resources Conservation Service.

About 120,000 acres in the survey area, or 15 percent of the total acreage, meets the soil requirements for prime farmland. Scattered areas of this land are throughout the county, but most are in the major valleys and till plains that are in general soil map units 1 and 10.

About 65,000 acres, or 8 percent of the total acreage, is made up of soils that have a seasonal high water table. These soils may qualify as prime farmland if this limitation is overcome by drainage measures. They are in scattered areas throughout the county on the uplands and in the lower positions on the till plains, mainly in general soils map units 4, 8, 9, and 11. The crops grown on this land are mainly corn, small grain, and hay in the plateau region.

A recent trend in land use in some parts of the survey area has been the loss of some prime farmland to industrial and urban uses. The loss of prime farmland to other uses puts pressure on marginal lands, which generally are more erodible, droughty, and less productive and cannot be easily cultivated.

The map units in the survey area that are considered prime farmland are listed in table 5. This list does not constitute a recommendation for a particular land use. On some soils included in the list, corrective measures that overcome a hazard or limitation, such as flooding, wetness, and droughtiness, are needed. Onsite evaluation is needed to determine whether or not the hazard or limitation has been overcome by corrective measures. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps. The soil qualities that affect use and management are described under the heading "Detailed Soil Map Units."

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

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

Contractors can use this survey to locate sources of sand 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*, *slightly limited*, *somewhat limited*, and *very limited*. The suitability ratings are expressed as *well suited*, *moderately well suited*, *poorly suited* and *unsuited*; or as *good*, *fair*, and *poor*; or as *probable* and *improbable*.

Numerical Ratings

Numerical ratings in the tables indicate the relative severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use, and the point at which the soil feature is not a limitation. The limitations appear in order from the most limiting to the least limiting. Thus, if more than one limitation is identified, the most severe limitation is listed first and the least severe one is listed last.

Crops and Pasture

General management needed for crops and pasture is suggested in this section. The estimated yields of the main crops and pasture plants are listed, the system of land capability classification used by the Natural Resources Conservation Service is explained, and prime farmland is described.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under the heading “Detailed Soil Map Units.” Specific information can be obtained from the local office of the Natural Resources Conservation Service or the Cooperative Extension Service.

Principles of Management

In 1997 about 220,000 acres in Cattaraugus County were used for crops and pasture (USDA, 1997). Of this total, 96,000 acres were used for pasture and 124,000 acres for field crops, mostly hay, corn, small grain, and some vegetables.

The potential for increased crop production is excellent in some parts of the county. About 30,000 acres of potentially good cropland currently is used for pasture, and another 80,000 acres is used for woodland (U.S. Dept. of Commerce, 1997). In addition to the reserve production capacity represented by these lands, crop yields can be increased by applying the latest crop technology and appropriate soil conservation practices to all of the cropland in the county. This soil survey can facilitate the use of new technology and the application of conservation practices.

The acreage in crops and pasture has decreased rapidly in the last few decades as more and more land has been converted to urban and recreational uses. The use of this soil survey to make land use decisions that affect farming in the county is discussed in the sections “Use and Management of the Soils” and “Detailed Soil Map Units.”

Some general principles of crop production in Cattaraugus County are described in the following paragraphs.

Soil erosion is a major hazard on about one-third of the cropland in Cattaraugus County, according to the 1985 New York State Erosion and Sediment Inventory (USDA, 1985). Additionally, soils along streams are subject to streambank erosion (fig. 15). This erosion presents a threat to existing housing, roads, and recreational areas in the survey area. The hazard of erosion is related to the slope, the erodibility of the soils, the amount and intensity of rainfall, and the type of plant cover.

Loss of soil through erosion results in loss of nutrients and water, formation of gullies on hillsides, deterioration of tilth, detrimental sedimentation downslope, and pollution of streams and reservoirs. Soil productivity is reduced when the surface layer is lost, and increasing amounts of the subsoil are incorporated into the plow layer. Loss of productivity is greater if the erosion occurs on the soils that have a fine-textured or moderately fine-textured subsoil, such as Collamer and Churchville soils, or on soils that have a compact subsoil that restricts rooting depth, such as Mardin and Volusia soils. Erosion also reduces productivity on soils that tend to be droughty, such as Chenango and Colonie soils, through the loss of organic matter. Soils that are moderately deep over bedrock, such as Towerville and Hornell soils, are permanently damaged by erosion.

Figure 15.—Stream bank erosion on the bluffs of the South Branch of Cattaraugus Creek, in an area of the Rhinebeck-Hudson-Niagara general soil map unit.

Erosion control provides protective cover, reduces runoff, increases water infiltration, and helps maintain soil tilth and fertility. Many tillage and conservation practices can be used to help prevent erosion. Minimum tillage, no-till, cover crops, crop residue management, and a cropping system that includes a high proportion of sod-forming crops are effective in controlling erosion. Additionally, conservation practices such as contour tillage, stripcropping, and terraces or diversions will help to control erosion on soils that have smooth, long, uniform slopes, such as the strongly sloping Busti, Volusia, Mardin and Chautauqua soils.

Most soils that have slopes of more than 3 percent require some measures to control water erosion. Soils that have a high content of silt, and do not contain rock fragments, such as Allard, Unadilla, and Collamer soils, are highly susceptible to erosion.

The effectiveness of particular combinations of conservation practices varies with different soils. Different combinations can be equally effective on the same soils. Additional information on erosion-control practices is available at the local office of the Cattaraugus County Soil and Water Conservation District or the Natural Resources Conservation Service.

Drainage is a major need on about one-half of the potential cropland in the survey area. On some wet soils, the production of crops commonly grown in the area is generally not feasible unless an extensive drainage system is installed. Draining these areas is often difficult or impractical since these soils occupy the lowest positions in the landscape. Examples of these soils are the poorly drained Canandaigua, Getzville, Lamson, and Wayland soils, and the very poorly drained Halsey soil. Moreover, most poorly drained and very poorly drained soils are hydric soils, and have the hydrology and vegetation that qualify them as wetlands, protected by law.

Seasonal wetness delays early planting, slows seed germination and seedling growth, and harvesting of most crops on the somewhat poorly drained soils, such as Busti, Erie, Niagara, Tonawanda, and Volusia. Crops on these soils respond well to improved drainage. Yields commonly are as high on artificially drained soils as they are on naturally moderately well drained soils.

Some well drained and moderately well drained soils, such as Valois, Unadilla, Chautauqua, Langford, and Scio soils, have small included areas of wetter soils. Installing random subsurface drains in these small areas allows more uniform management of fields.

Drainage of some moderately well drained and somewhat poorly drained sloping soils, such as Mardin and Volusia soils, can best be improved with diversions or interceptor drains, that divert surface runoff coming from higher areas.

The design of a drainage system varies with the kind of soil. A combination of surface and subsurface drainage is needed in areas of somewhat poorly drained and poorly drained soils. Surface drainage can include open ditches, grassed waterways, land smoothing, and bedding. Subsurface drainage is mainly tile or plastic pipe. However, establishing drainage outlets is difficult and expensive on soils in low positions on the landscape.

Drains must be more closely spaced in slowly permeable soils than in more permeable soils. Subsurface drainage is difficult in slowly permeable soils such as Rhinebeck, Canandaigua, and Darien soils. These soils may also require surface drainage. Subsurface drainage is very effective in more permeable soils such as Red Hook, Halsey, and Lamson soils, if adequate outlets are available.

Information on installation and cost of drainage systems is available at the office of the Cattaraugus County Soil and Water Conservation District or the Natural Resources Conservation Service.

Available water capacity is important in growing crops. Some of the soils in the county have a relatively low capacity to store moisture, and tend to be droughty. These soils include sandy and gravelly soils, and soils that have a fragipan. The gravelly Chenango soils, the sandy Colonie soils, and the Mardin soils, which have a fragipan, are examples. Increasing the organic matter content and improving soil structure will help to increase the water holding capacity of the soil. Using more green manure crops, cover crops, and additions of animal manure will improve organic matter content and soil structure and increases the available water capacity of these droughty soils.

Soil tilth is the physical condition of the soil that is related to ease of tillage, seedbed preparation, seedling emergence, the infiltration of water, and root penetration. Soils that have good tilth generally have granular structure, are porous, and are easy to cultivate.

Tillage has a strong influence on soil tilth. Excessive tillage tends to reduce organic matter content and break down soil structure. Chenango and Colonie soils, which are very deep, well drained, and coarse-textured or moderately coarse-textured, can be tilled without damaging tilth. The wetter and finer textured Rhinebeck and Canandaigua soils, however, must be tilled at the proper moisture content to prevent deterioration of the natural structure. Plowing or cultivating these soils when they are wet causes puddling and results in the formation of a hard surface crust and clods as the soils dry. Cultivating the soils at the proper moisture content, including cover crops, green manure crops, and sod crops in the cropping system, returning crop residue to the soil, and adding manure help to keep the soils granular and porous.

Soil fertility is important for optimum crop production. It can be maintained by the addition of lime, fertilizer, or both. The amount needed depends on the natural content of lime and plant nutrients, on the needs of the crop, and on the level of the desired yields.

Organic matter content is important in assessing fertility. It averages about 5 percent in the surface layer of the soils in Cattaraugus County. Poorly drained and very poorly drained soils, such as Canadice and Alden soils, are somewhat higher in organic mater content.

Nitrogen is released from the organic matter in the soil, but much of the nitrogen is in complex forms that cannot be used by plants until it has been decomposed by micro-organisms. Nitrogen fertilizer is needed to supplement the nitrogen supplied by the decomposition of the organic matter in the soil. Management practices that increase the content of organic matter, including growing green manure crops and sod crop and returning crop residue to the soil, improve the natural content of nitrogen.

Timeliness of nitrogen fertilization is important to ensure its maximum use by plants. Nitrogen can be lost through leaching in rapidly permeable soils, such as Chenango soil, or by denitrification in the wetter and less permeable soils, such as Fremont soils. The best results can be obtained by applying small amounts of nitrogen at the proper intervals. For example, the nitrogen must be applied at the time of planting and again later as a side dressing when the crop is growing.

The soils in Cattaraugus County generally have low levels of natural phosphorus. Coarse textured soils, such as Colonie and Chenango soils, tend to be very low in phosphorus. Adding appropriate amounts of phosphorus in the form of commercial fertilizer is essential for good plant growth.

Most of the soils in the county have low or medium levels of available potassium. However, soils that have a clayey subsoil, such as Rhinebeck and Canadice soils, are somewhat higher in potassium. Even on soils that have a fairly high content of potassium, adding potassium increases yields of most crops.

Lime is needed for most of the soils in the survey area to raise the reaction to a level that will ensure optimum yields of most crops. Additions of lime and fertilizer should be based on the results of soil tests. For assistance in obtaining soil tests and recommendations, farmers and others can contact the local office of the Cooperative Extension Service. Information on recent research findings and fertilizer recommendations can be found in the current edition of “Cornell Recommends for Field Crops” and “Vegetable Production Recommendations”. These bulletins were prepared by the staff of the New York State College of Agriculture, Cornell University, in Ithaca, New York.

Surface stones, boulders, and rock outcrops limit the use of soils for cropland or hayland in several parts of the county. Mardin and Volusia, very stony, and Knapp Creek and Flatiron, extremely bouldery are map units that have limitations because of rock fragments, boulders or outcrops. Surface rock fragments, boulders and rock outcrops limit the use of equipment, especially tillage implements. Pasture management practices, such as fertilizing, mowing, or reseeding, are also limited. Overcoming limitations on very rocky soils is generally not practical.

Yields per Acre

The average yields per acre that can be expected of the principal crops under a high level of management are shown in table 6. In any given year, yields may be higher or lower than those indicated in the table because of variations in rainfall and other climatic factors. The land capability classification of map units in the survey area also is shown in table 6.

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.

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

Crops other than those shown in table 6 are grown in the survey area, but estimated yields are not listed because the acreage of such crops is small. The local office of the Natural Resources Conservation Service or of the Cooperative Extension Service can provide information about the management and productivity of the soils for those crops.

Land Capability Classification

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

In the capability system, soils are generally grouped at three levels: capability class, subclass, and unit. Only class and subclass are used in this survey.

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

Class 1 soils have slight limitations that restrict their use.

Class 2 soils have moderate limitations that restrict the choice of plants, or that require moderate conservation practices.

Class 3 soils have severe limitations that restrict the choice of plants, or that require special conservation practices, or both.

Class 4 soils have very severe limitations that restrict the choice of plants, or that require very careful management, or both.

Class 5 soils are subject to little or no erosion, but have other limitations, impractical to remove, that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 6 soils have severe limitations that make them generally unsuitable for cultivation, and that restrict their use mainly to pasture, rangeland, forestland, or wildlife habitat.

Class 7 soils have very severe limitations that make them unsuitable for cultivation, and that restrict their use mainly to grazing, forestland, or wildlife habitat.

Class 8 soils and miscellaneous areas have limitations that preclude commercial plant production, and that restrict their use to recreational purposes, wildlife habitat, watershed, or esthetic purposes.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, 2e. The letter *e* shows that the main hazard is the risk of erosion unless close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); *s* shows that the soil is limited mainly because it is shallow, droughty, or stony; and *c*, used in only some parts of the United States, shows that the chief limitation is climate that is very cold or very dry.

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

The acreage of soils in each capability class or subclass is shown in table 7. The capability classification of map units in this survey area is given in the section "Detailed Soil Map Units" and in the yields table.

Forest Productivity and Management

The tables in this section can help forest owners or managers plan the use of soils for wood crops. They show the potential productivity of the soils for wood crops and rate the soils according to the limitations that affect various aspects of forest management.

Forest Productivity

In table 8 (Forestland Productivity) the *potential productivity* of merchantable or common trees on a soil is expressed as a site index and as a volume number. The *site index* is the average height, in feet, that dominant and co-dominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees are those that forest managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability. More detailed information regarding site index is available in the "National Forestry Manual," which is available in local offices of the Natural Resources Conservation Service or on the Internet.

The *volume of wood fiber*, a number, is the yield likely to be produced by the most important tree species. This number, expressed as cubic feet per acre per year and calculated at the age of culmination of the mean annual increment (CMAI), indicates the amount of fiber produced in a fully stocked, even-aged, unmanaged stand.

Trees to manage are those that are preferred for planting, seeding, or natural regeneration, and those that remain in the stand after thinning or partial harvest.

Forest Management

In table 9 (Hazard of Erosion and Suitability for Roads on Forestland) and table 10 (Forestland Planting), interpretive ratings are given for various aspects of forest management. The ratings are both verbal and numerical.

Some rating class terms indicate the degree to which the soils are suited to a specified forest management practice. *Well suited* indicates that the soil has features that are favorable for the specified practice, and has no limitations. Good performance can be expected, and little or no maintenance is needed. *Moderately well suited* indicates that the soil has features that are moderately favorable for the specified practice. One or more soil properties are less than desirable, and fair performance can be expected. Some maintenance is needed. *Poorly suited* indicates that the soil has one or more properties that are unfavorable for the specified practice. Overcoming the unfavorable properties requires special design, extra maintenance, and costly alteration. *Unsuited* indicates that the expected performance of the soil is unacceptable for the specified practice or that extreme measures are needed to overcome the undesirable soil properties.

Numerical ratings in the tables indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the specified forest management practice (1.00) and the point at which the soil feature is not a limitation (0.00).

The paragraphs that follow indicate the soil properties considered in rating the soils for forest management practices. More detailed information about the criteria used in the ratings is available in the "National Forestry Manual," which is available in local offices of the Natural Resource conservation Service.

Ratings in the column *Hazard of off-road or off-trail erosion*, are based on slope and on soil erodibility factor K. The soil loss is caused by sheet or rill erosion in off-road or off-trail areas where 50 to 75 percent of the surface has been exposed by logging, grazing, mining, or other kinds of disturbance. The hazard is described as *slight*, *moderate*, *severe*, or *very severe*. A rating of *slight* indicates that erosion is unlikely under ordinary climatic conditions; *moderate* indicates that some erosion is likely and that erosion-control measures may be needed; *severe* indicates that erosion is very likely and that erosion-control measures, including revegetation of bare areas, are advised; and *very severe* indicates that significant erosion is expected, loss of soil productivity and off-site damage are likely, and erosion-control measures are costly and generally impractical.

Ratings in the column *hazard of erosion on roads and trails* are based on the soil erodibility factor K, slope, and content of rock fragments. The ratings apply to unsurfaced roads and trails. The hazard is described as slight, moderate, or severe. A rating of *slight* indicates that little or no erosion is likely; *moderate* indicates that some erosion is likely, that the roads or trails may require occasional maintenance; and that simple erosion-control measures are needed; and *severe* indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed.

Ratings in the column *suitability for roads (natural surface*, are based on slope, rock fragments on the surface, plasticity index, content of sand, the Unified classification, depth to a water table, ponding, flooding, and the hazard of soil slippage. The ratings indicate the suitability for using the natural surface of the soil for roads. The soils are described as well suited, moderately well suited, or poorly suited to this use.

Ratings in the columns *suitability for hand planting* and *suitability for mechanical planting* are based on slope, depth to a restrictive layer, content of sand, plasticity index, rock fragments on or below the surface, depth to a water table, and ponding. The soils are described as well suited, moderately well suited, poorly suited, or unsuited to these methods of planting. It is assumed that necessary site preparation is completed before seedlings are planted.

Ratings in the column *potential for seedling mortality* are based on flooding, ponding, depth to a water table, content of lime, reaction, salinity, available water capacity, soil moisture regime, soil temperature regime, aspect, and slope. The soils are described as having a low, moderate, or high potential for seedling mortality.

Recreation

The soils of the survey area are rated in table 11 (Camp Areas, Picnic Areas, and Playgrounds) and table 12 (Paths, Trails, and Golf Fairways) 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. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and 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 0.00 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 table 11 (Camp Areas, Picnic Areas, and Playgrounds) and table 12 (Paths, Trails, and Golf Fairways) can be supplemented by other information in this survey, for example, interpretations for building site development, construction materials, sanitary facilities, and water management.

Camp areas require site preparation, such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The ratings are based on the soil properties that affect the ease of developing camp areas and the performance of the areas after development. Slope, stoniness, and depth to bedrock are the main concerns affecting the development of camp areas.

The soil properties that affect the performance of the areas after development are those that influence trafficability and promote the growth of vegetation, especially in heavily used areas. For good trafficability, the surface of camp areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or dense material, permeability, and toxic substances in the soil.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The ratings are based on the soil properties that affect the ease of developing picnic areas, and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of picnic areas. For good trafficability, the surface of picnic areas should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or dense material, permeability, and toxic substances in the soil.

Playgrounds require soils that are nearly level, are free of stones, and can withstand intensive foot traffic. The ratings are based on the soil properties that affect the ease of developing playgrounds and that influence trafficability and the growth of vegetation after development. Slope and stoniness are the main concerns affecting the development of playgrounds. For good trafficability, the surface of the playgrounds should absorb rainfall readily, remain firm under heavy foot traffic, and not be dusty when dry. The soil properties that influence trafficability are texture of the surface layer, depth to a water table, ponding, flooding, permeability, and large stones. The soil properties that affect the growth of plants are depth to bedrock or dense material, permeability, and toxic substances in the soil.

Paths and trails for hiking and horseback riding should require little or no slope modification through cutting and filling. The ratings are based on the soil properties that affect trafficability and erodibility. These properties are stoniness, depth to a water table, ponding, flooding, slope, and texture of the surface layer.

Off-road motorcycle trails require little or no site preparation. They are not covered with surfacing material or vegetation. Considerable compaction of the soil material is likely. The ratings are based on the soil properties that influence erodibility, trafficability, dustiness, and the ease of revegetation. These properties are stoniness, slope, depth to a water table, ponding, flooding, and texture of the surface layer.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or dense material; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer. The suitability of the soil for traps, tees, roughs, and greens is not considered in the ratings.

Wildlife Habitat

Soils affect the kind and amount of vegetation that is available to wildlife as food and cover. They also affect the construction of water impoundments. The kind and abundance of wildlife depend largely on the amount and distribution of food, cover, and water. Wildlife habitat can be created or improved by planting appropriate vegetation, by maintaining the existing plant cover, or by promoting the natural establishment of desirable plants.

In table 13 (Wildlife Habitat) the soils in the survey area are rated according to their potential for providing habitat for various kinds of wildlife. This information can be used in planning parks, wildlife refuges, nature study areas, and other developments for wildlife; in selecting soils that are suitable for establishing, improving, or maintaining specific elements of wildlife habitat; and in determining the intensity of management needed for each element of the habitat.

The potential of the soil is rated good, fair, poor, or very poor. A rating of *good* indicates that the element or kind of habitat is easily established, improved, or maintained. Few or no limitations affect management, and satisfactory results can be expected. A rating of *fair* indicates that the element or kind of habitat can be established, improved, or maintained in most places. Moderately intensive management is required for satisfactory results. A rating of *poor* indicates that limitations are severe for the designated element or kind of habitat. Habitat can be created, improved, or maintained in most places, but management is difficult and must be intensive. A rating of *very poor* indicates that restrictions for the element or kind of habitat are very severe and that unsatisfactory results can be expected. Creating, improving, or maintaining habitat is impractical or impossible.

The elements of wildlife habitat are described in the following paragraphs.

Grain and seed crops are domestic grains and seed-producing herbaceous plants. Soil properties and features that affect the growth of grain and seed crops are depth of the root zone, texture of the surface layer, available water capacity, wetness, slope, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of grain and seed crops are corn, wheat, oats, and barley.

Grasses and legumes are domestic perennial grasses and herbaceous legumes. Soil properties and features that affect the growth of grasses and legumes are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, flooding, and slope. Soil temperature and soil moisture also are considerations. Examples of grasses and legumes are fescue, lovegrass, bromegrass, clover, and alfalfa.

Wild herbaceous plants are native or naturally established grasses and forbs, including weeds. Soil properties and features that affect the growth of these plants are depth of the root zone, texture of the surface layer, available water capacity, wetness, surface stoniness, and flooding. Soil temperature and soil moisture also are considerations. Examples of wild herbaceous plants are bluestem, goldenrod, beggarweed and wheatgrass.

Hardwood trees and woody understory produce nuts or other fruit, buds, catkins, twigs, bark, and foliage. Soil properties and features that affect the growth of hardwood trees and shrubs are depth of the root zone, available water capacity, and wetness. Examples of these plants are oak, poplar, cherry, sweetgum, apple, hawthorn, dogwood, hickory, blackberry, and blueberry. Examples of fruit-producing shrubs that are suitable for planting on soils rated *good* are Russian-olive, autumn-olive, and crabapple.

Coniferous plants furnish browse and seeds. Soil properties and features that affect the growth of coniferous trees, shrubs, and ground cover are depth of the root zone, available water capacity, and wetness. Examples of coniferous plants are pine, spruce, fir, cedar, and juniper.

Wetland plants are annual and perennial wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are depth to bedrock, wetness, surface stoniness, slope, and permeability. Examples of shallow water areas are marshes, waterfowl feeding areas, and ponds.

The habitat for various kinds of wildlife is described in the following paragraphs.

Habitat for openland wildlife consists of cropland, pasture, meadows, and areas that are overgrown with grasses, herbs, shrubs, and vines. These areas produce grain and seed crops, grasses and legumes, and wild herbaceous plants. Wildlife attracted to these areas include bobwhite quail, pheasant, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous and/or coniferous plants and associated grasses, legumes, and wild herbaceous plants. Wildlife attracted to these areas include wild turkey, ruffed grouse, woodcock, thrushes, woodpeckers, squirrels, gray fox, raccoon, deer, and bear.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, herons, shore birds, muskrat, mink, and beaver.

Engineering

This section provides information for planning land uses related to urban development and to water management. Soils are rated for various uses, and the most limiting features are identified. Ratings are given for building site development, sanitary facilities, construction materials, and water management. The ratings are based on observed performance of the soils and on the estimated data and test data in the “Soil Properties” section.

Information in this section is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site-specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings in this section. During the fieldwork for this soil survey, determinations were made about particle-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 7 feet of the surface, soil wetness, depth to a water table, ponding, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kinds of adsorbed cations. Estimates were made for erodibility, permeability, corrosivity, shrink-swell potential, available water capacity, and other behavioral characteristics affecting engineering uses.

This information can be used to evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

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

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

Construction Materials

Table 14 (Construction Materials) and table 15 (Source of Reclaimation Material, Roadfill, and Topsoil) 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.

In table 14, the soils are rated as a probable or improbable source of sand and gravel. A rating of *probable* means that the source material is likely to be in or below the soil. The numerical ratings in these columns indicate the degree of probability. The number 0.00 indicates that the soil is an improbable source. A number between 0.00 and 1.00 indicates the degree to which the soil is a probable source of sand or gravel.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. They are used in many kinds of construction. Specifications for each use vary widely. In table 14 (Construction Materials) only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material. The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the Unified classification of the soil), the thickness of suitable material, and the content of rock fragments. If the lowest layer of the soil contains sand or gravel, the soil is rated as a probable source regardless of thickness (fig. 16). The assumption is that the sand or gravel layer below the depth of observation exceeds the minimum thickness.

In table 15, 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

Figure 16.—Stratified glacial outwash deposit showing the variable layers of deposition. These gravelly deposits are a good source of sand and gravel.

reconstruction material. The ratings are based on the soil properties that affect erosion and stability of the surface and the productive potential of the reconstructed soil. These properties include the content of sodium, salts, and calcium carbonate; reaction; available water capacity; erodibility; texture; content of rock fragments; and content of organic matter and other features that affect fertility.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the whole soil, from the surface to a depth of about 5 feet. It is assumed that soil layers will be mixed when the soil material is excavated and spread.

The ratings are based on the amount of suitable material and on soil properties that affect the ease of excavation and the performance of the material after it is in place. The thickness of the suitable material is a major consideration. The ease of excavation is affected by large stones, depth to a water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the AASHTO classification of the soil) and linear extensibility (shrink-swell potential).

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area. The ratings are based on the soil properties that affect plant growth; the ease of excavating, loading, and spreading the material; and reclamation of the borrow area. Toxic substances, soil reaction, and the properties that are inferred from soil texture, such as available water capacity and fertility, affect plant growth. The ease of excavating, loading, and spreading is affected by rock fragments, slope, depth to a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, depth to a water table, rock fragments, depth to bedrock or dense material, 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.

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. Table 16 (Dwellings and Small Commercial Buildings) and table 17 (Roads and Streets, Shallow Excavations, and Lawns and Landscaping) 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. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and 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 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or dense material, hardness of bedrock or dense material, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or dense material, hardness of bedrock or dense material, 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 dense material, hardness of bedrock or dense material, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or dense material, hardness of bedrock or dense material, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or dense material; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Sanitary Facilities

Table 18 (Sewage Disposal) and table 19 (Landfills) show the degree and kind of soil limitations that affect septic tank absorption fields, sewage lagoons, sanitary landfills, and daily cover for landfill. The ratings are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect these uses. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Slightly limited* indicates that the soil has features that are favorable for the specified use. The limitations are minor and can be easily overcome. Good performance and 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 0.00 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 12 and 48 inches is evaluated. The ratings are based on the soil properties that affect absorption of the effluent, construction and maintenance of the system, and public health. Permeability, depth to a water table, ponding, depth to bedrock or dense material, and flooding affect absorption of the effluent. Stones and boulders, ice, and bedrock or dense material interfere with installation. Subsidence interferes with installation and maintenance. Excessive slope may cause lateral seepage and surfacing of the effluent in downslope areas. Permeability in the bottom layer of soil is evaluated for risk of seepage.

Some soils are underlain by loose sand and gravel or fractured bedrock at a depth of less than 4 feet below the distribution lines. In these soils the absorption field may not adequately filter the effluent, particularly when the system is new. As a result, the ground water may become contaminated. Permeability in the bottom layer of soil is evaluated for risk of seepage.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water. Considered in the ratings are slope, permeability, depth to a water table, ponding, depth to bedrock or dense material, flooding, large stones, and content of organic matter.

Soil permeability is a critical property affecting the suitability for sewage lagoons. Most porous soils eventually become sealed when they are used as sites for sewage lagoons. Until sealing occurs, however, the hazard of pollution is severe. Soils that have a permeability rate of more than 2 inches per hour are too porous for the proper functioning of sewage lagoons. In these soils, seepage of the effluent can result in contamination of the ground water. Ground-water contamination is also a hazard if fractured bedrock is within a depth of 40 inches, if the water table is high enough to raise the level of sewage in the lagoon, or if floodwater overtops the lagoon.

A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope, bedrock, and dense material can cause construction problems, and large stones can hinder compaction of the lagoon floor. If the lagoon is to be uniformly deep throughout, the slope must be gentle enough and the soil material must be thick enough over bedrock or a dense material to make land smoothing practical.

A *trench sanitary landfill* is an area where solid waste is placed in successive layers in an excavated trench. The waste is spread, compacted, and covered daily with a thin layer of soil excavated at the site. When the trench is full, a final cover of soil material at least 2 feet thick is placed over the landfill. The ratings in the table are based on the soil properties that affect the risk of pollution, the ease of excavation, trafficability, and revegetation. These properties include permeability, depth to bedrock or dense material, depth to a water table, ponding, slope, flooding, texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, onsite investigation may be needed.

Hard, non-rippable bedrock, creviced bedrock, or highly permeable strata in or directly below the proposed trench bottom can affect the ease of excavation and the hazard of ground-water pollution. Slope affects construction of the trenches and the movement of surface water around the landfill. It also affects the construction and performance of roads in areas of the landfill.

Soil texture and consistence affect the ease with which the trench is dug and the ease with which the soil can be used as daily or final cover. They determine the workability of the soil when dry and when wet. Soils that are plastic and sticky when wet are difficult to excavate, grade, or compact and are difficult to place as a uniformly thick cover over a layer of refuse.

The soil material used as the final cover for a trench landfill should be suitable for plants. It should not have excess sodium or salts and should not be too acid. The surface layer generally has the best workability, the highest content of organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

In an *area sanitary landfill*, solid waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site. A final cover of soil material at least 2 feet thick is placed over the completed landfill. The ratings in the table are based on the soil properties that affect trafficability and the risk of pollution. These properties include flooding, permeability, depth to a water table, ponding, slope, and depth to bedrock or dense material.

Flooding is a serious problem because it can result in pollution in areas downstream from the landfill. If permeability is too rapid or if fractured bedrock, or the water table is close to the surface, the leachate can contaminate the water supply. Slope is a consideration because of the extra grading required to maintain roads in the steeper areas of the landfill. Also, leachate may flow along the surface of the soils in the steeper areas and cause difficult seepage problems.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste. The ratings in the table also apply to the final cover for a landfill. They are based on the soil properties that affect workability, the ease of digging, and the ease of moving and spreading the material over the refuse daily during wet and dry periods. These properties include soil texture, depth to a water table, ponding, rock fragments, slope, depth to bedrock or dense material, reaction, and content of salts, sodium, or lime.

Loamy or silty soils that are free of large stones and excess gravel are the best cover for a landfill. Clayey soils may be sticky and difficult to spread, and sandy soils are subject to wind erosion.

Slope affects the ease of excavation and ease of moving the cover material. Also, it can influence runoff, erosion, and reclamation of the borrow area.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock, dense material, or the water table to permit revegetation. The soil material used as the final cover for a landfill should be suitable for plants. It should not have excess sodium, salts, or lime and should not be too acid.

Water Management

Table 20 (Ponds and Embankments) 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 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 (0.01).

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. Embankments that have zoned construction (core and shell) are not considered. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

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

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and quality of the water as inferred from the salinity of the soil. Depth to bedrock and the content of large stones affect the ease of excavation.

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 ascertained by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine particle-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help to characterize key soils.

The estimates of soil properties are shown in tables. They include engineering index properties, physical and chemical properties, and pertinent soil and water features.

Engineering Index Properties

Table 21 (Engineering Properties) gives the engineering classifications and the range of index properties for the layers of each soil in the survey area.

Depth to the upper and lower boundaries of each layer is indicated.

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. “Loam,” for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is 15 percent or more, an appropriate modifier is added, for example: “gravelly.” Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (ASTM, 1998) and the system adopted by the American Association of State Highway and Transportation Officials (AASHTO, 1998).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to particle-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as PT. Soils exhibiting engineering properties of two groups can have a dual classification, for example, CL-ML.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of particle-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 10 inches in diameter and 3 to 10 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas, and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The estimates are based on test data from the survey area or from nearby areas, and on field examination.

The estimates of particle-size distribution, liquid limit, and plasticity index are generally rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is generally omitted in the table.

Physical Properties

Table 22 (Physical Properties of the Soil) shows estimates of some physical characteristics and features that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Depth to the upper and lower boundaries of each layer is indicated.

Particle size is the effective diameter of a soil particle as measured by sedimentation, sieving, or micrometric methods. Particle sizes are expressed as classes with specific effective diameter class limits. The broad classes are sand, silt, and clay, ranging from the larger to the smaller.

Sand as a soil separate consists of mineral soil particles that are 0.05 millimeter to 2 millimeters in diameter. In the table, the estimated sand content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

Silt as a soil separate consists of mineral soil particles that are 0.002 to 0.05 millimeter in diameter. In the table, the estimated silt content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In table 22, the estimated clay content of each soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of sand, silt, and clay affects the physical behavior of a soil. Particle size is important for engineering and agronomic interpretations, for determination of soil hydrologic qualities, and for soil classification.

The amount and kind of clay affect the fertility and physical condition of the soil, and the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 or 1/10 bar (33kPa or 10kPa) moisture tension. Weight is determined after the soil is dried at 105 degrees C. In the table, the estimated moist bulk density of each soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute shrink-swell potential, available water capacity, total pore space, and other soil properties. The moist bulk density of a soil indicates the pore space available for water and roots. Depending on soil texture, a bulk density of more than 1.4 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability (Ksat) refers to the ability of a soil to transmit water or air. The term "permeability," as used in soil surveys, indicates saturated hydraulic conductivity (Ksat). The estimates in the table indicate the rate of water movement, in inches per hour, when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems and septic tank absorption fields.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each soil layer. The capacity varies, depending on soil properties that affect retention of water. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown, and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Linear extensibility refers to the change in length of an unconfined clod as moisture content is decreased from a moist to a dry state. It is an expression of the volume change between the water content of the clod at 1/3 or 1/10 bar tension (33kPa or 10kPa tension) and oven dryness. The volume change is reported in the table as percent change for the whole soil. Volume change is influenced by the amount and type of clay minerals in the soil.

Linear extensibility is used to determine the shrink-swell potential of soils. The shrink-swell potential is low if the soil has a linear extensibility of less than 3 percent; moderate if 3 to 6 percent; high if 6 to 9 percent; and very high if more than 9 percent. If the linear extensibility is more than 3, shrinking and swelling can cause damage to buildings, roads, and other structures and to plant roots. Special design commonly is needed.

Organic matter is the plant and animal residue in the soil at various stages of decomposition. In table 22, the estimated content of organic matter is expressed as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The content of organic matter in a soil can be maintained by returning crop residue to the soil. Organic matter has a positive effect on available water capacity, water infiltration, soil organism activity, and tilth. It is a source of nitrogen and other nutrients for crops and soil organisms.

Erosion factors are shown in table 22 as the K factor (Kw and Kf) and the T factor. Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter, and on soil structure and permeability. Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor Kw indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Erosion factor Kf indicates the erodibility of the fine-earth fraction, or the material less than 2 millimeters in size.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Chemical Properties

Table 23 (Chemical Soil Properties) shows estimates of the chemical characteristics that affect soil behavior. These estimates are given for the layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils. Depth to the upper and lower boundaries of each layer is indicated.

Soil reaction is a measure of acidity or alkalinity. The pH of each soil layer 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.

Water Features

Table 24 (Water Features) gives estimates of various water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The four hydrologic soil groups are:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. The months in the table indicate the portion of the year in which the feature is most likely to be a concern.

Water table refers to a saturated zone in the soil. Table 24 indicates, by month, depth to the top (upper limit) and base (lower limit) of the saturated zone in most years. Estimates of the upper and lower limits are based mainly on observations of the water table at selected sites and on evidence of a saturated zone, namely grayish colors or mottles (redoximorphic features) in the soil. A saturated zone that lasts for less than a month is not considered a water table.

Ponding is standing water in a closed depression. Unless a drainage system is installed, the water is removed only by percolation, transpiration, or evaporation. Table 24 indicates *surface water depth* and the *duration* and *frequency* of ponding. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, rare, occasional, and frequent. *None* means that ponding is not probable; *rare* that it is unlikely but possible under unusual weather conditions (the chance of ponding is nearly 0 percent to 5 percent in any year); *occasional* that it occurs, on the average, once or less in 2 years (the chance of ponding is 5 to 50 percent in any year); and *frequent* that it occurs, on the average, more than once in 2 years (the chance of ponding is more than 50 percent in any year).

Flooding is the temporary inundation of an area caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, and water standing in swamps and marshes is considered ponding rather than flooding.

Duration and *frequency* of flooding are estimated. Duration is expressed as *extremely brief* if 0.1 hour to 4 hours, *very brief* if 4 hours to 2 days, *brief* if 2 to 7 days, *long* if 7 to 30 days, and *very long* if more than 30 days. Frequency is expressed as none, very rare, rare, occasional, frequent, and very frequent. *None* means that flooding is not probable; *very rare* that it is very unlikely but possible under extremely unusual weather conditions (the chance of flooding is less than 1 percent in any year); *rare* that it is unlikely but possible under unusual weather conditions (the chance of flooding is 1 to 5 percent in any year); *occasional* that it occurs infrequently under normal weather conditions (the chance of flooding is 5 to 50 percent in any year); *frequent* that it is likely to occur often under normal weather conditions (the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year); and *very frequent* that it is likely to occur very often under normal weather conditions (the chance of flooding is more than 50 percent in all months of any year).

The information is based on evidence in the soil profile, namely thin strata of gravel, sand, silt, or clay deposited by floodwater; irregular decrease in organic matter content with increasing depth; and little or no horizon development.

Also considered are local information about the extent and levels of flooding and the relation of each soil on the landscape to historic floods. Information on the extent of flooding based on soil data is less specific than that provided by detailed engineering surveys that delineate flood-prone areas at specific flood frequency levels.

Soil Features

Table 25 gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave), and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, permeability, content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete, in installations that intersect soil boundaries or soil layers, is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Relationship between Parent Material, Landscape Position, and Drainage Class of the Soils

Table 26 shows the relationship between of some of the factors that have influenced the development and morphology of the soils in Cattaraugus County. The soils are grouped according to the type of landscape positions on which they occur. These landscape positions include uplands, outwash plains, terraces, and alluvial fans; lacustrine plains and deltas; residual and colluvial; flood plains; and swamps and bogs. The soils that are on the similar landscapes are grouped according to their depth over bedrock. The soils are also grouped by texture and by morphology of the parent material in which they formed. Finally, the soils are grouped by drainage class.

Soils that have the same parent material, soil depth, and landscape position, but are in a different drainage class form a soil catena. Dunkirk, Collamer, and Niagara soils are examples of soils that form a catena in Cattaraugus County. Some soils, such as Canandaigua soils, have drainage features that place them in more that one drainage class. These soils are listed more than once in the table.

The relationship between the position of selected soils on the landscape and depth to a seasonal high water table is shown in figure 17. Areas in which the water table is closest to the surface generally are in the lowest positions on the landscape.

The information in table 26 establishes general relations among the soils in the county. It supplements the information provided in the section “Formation of the Soils.” Detailed information on the morphology and characteristics of each soil is provided in the section “Taxonomic Units and Their Morphology.”

Engineering Properties of Geologic Deposits

The geologic deposits that occur in Cattaraugus County include glacial till, residuum, outwash, delta deposits, beach ridge deposits, lacustrine deposits, alluvium, and organic deposits. The significance of each kind of deposit for engineering is influenced to a great extent by its mode of deposition. This, in turn, determines the texture of the material and the internal structure of the landform that

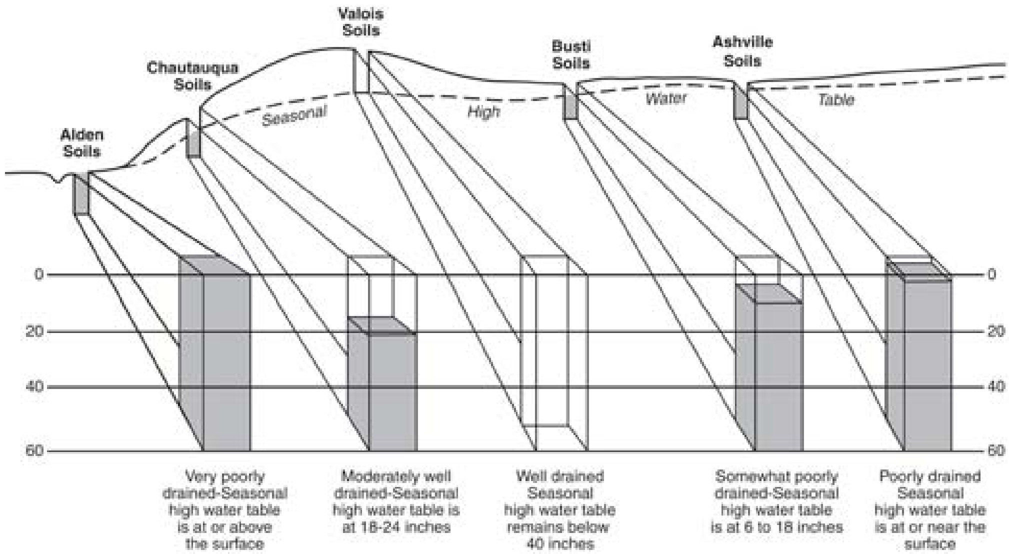

Figure 17.—A representative landscape showing the relative location of some important soils and depths to seasonal high water table.

includes the deposit. Among the influences are the position on the landscape and the depth to the water table.

In Cattaraugus County, the geologic deposits are divided into the following categories: deep till and residual deposits; shallow-to-rock deposits; stratified, coarse textured deposits; stratified, fine textured deposits; and organic deposits. These deposits are described in the following paragraphs.

Deep till and residual deposits—Deep till deposits are unstratified, highly variable mixtures of all particle sizes ranging from rock fragment to clay. This material was scoured and transported from nearby sources by glacial ice and was deposited as ground moraines, lateral moraines, or recessional moraines.

Residual deposits were formed by the weathering of bedrock in place. Bedrock is generally at a depth of more than 5 feet, but in some small areas it is closer to the surface or occurs as rock outcrops. The individual rock and mineral fragments in the soil generally reflect the types of bedrock in the immediate area.

Soils that formed in mixed, deep till deposits include Alden, Ashville, Busti, Chadakoin, Chautauqua, Darien, Erie, Fremont, Langford, Mardin, Schuyler, and Volusia soils. Valois soils formed in till deposits on moraines. Canaseraga, Churchville, and Dalton soils have a veneer of fine textured material over deep till.

Soils that formed in deep residual deposits include Ivory, Kinzua, and Onoville soils. These soils are the most dense of the unconsolidated deposits in the county. Most of the till deposits have been subjected to the compact weight of overriding ice. Most of the deep till and residual soils are nearly level or gently sloping, but some range from nearly level to very steep. The characteristics of many landscapes are such that cut and fill earthwork is needed in most construction. The soils commonly provide stable, relatively incompressible foundations for engineering works. Fill material from these deposits, when properly compacted, generally provides stable embankments. Steep cut slopes commonly are subject to surface sloughing and erosion. Alden soils are subject to ponding.

Shallow-to-rock deposits—Shallow-to-rock deposits consist of a veneer of unconsolidated sediments that are underlain by bedrock. The soil material commonly is 0.5 foot to 4.0 feet thick, and rock outcrop is common in some areas. The landforms and topography generally are controlled by the bedrock.

Soils that formed in glacial till over bedded sandstone, siltstone, and shale include Hornell, Orpark, and Towerville soils. Carrollton, Frewsburg and Mandy soils are examples of soils that formed in residual deposits over bedded sandstone, siltstone, and shale. Barcelona soils formed in fine textured material over till underlain by shale bedrock.

The main engineering concerns are those that relate to the bedrock and ground water. Other engineering considerations are similar to those described for the overlying material. Fill material is limited in quantity because of the depth to bedrock.

Stratified coarse textured deposits—Materials dominated by gravel and sand sorted by glacial meltwater into layered or stratified deposits are included in this category, as well as coarser textured material deposited by fluvial action. They occupy such geologic landforms as outwash plains and terraces, beach ridges, and the coarser portions of deltas, lacustrine plains, alluvial fans, and flood plains. The strata within these deposits may be well sorted or poorly sorted, and range in particle size from cobbles to silt. The deposits commonly are loose and porous, and have moderately rapid or rapid permeability.

Soils that formed on gravelly outwash plains and terraces, beach ridges, and alluvial fans include Castile, Chenango, Halsey, and Red Hook soils. Scio and Unadilla soils formed on silty terraces and older alluvial fans. Soils that formed in sandy areas of beaches, lake plains, and deltas are Colonie, Elnora, Lamson, and Minoa soils. Allard, Getzville, Olean, and Swormville soils have a veneer of moderately fine textured material over coarse textured material.

Coarse textured deposits generally have relatively high strength and low compressibility. Because of their loose and porous nature, most of these deposits are not highly erodible but are subject to settlement when vibrated.

These deposits of gravel and sand have many uses as construction material. Their uses depend on gradation, hardness, and plasticity. They are sources of sand and gravel for general use, and they may be used as fill material for highway embankments, in parking areas and other developments, and on construction sites where this material is needed to reduce stress on the underlying soils. They may also be used as sub base for pavements; wearing surfaces for driveways, parking lots, and some roads; material for highway shoulders; and free drainage backfill for structures and pipes. In addition, they may be used to form outside shells of dams for impounding water and as slope protection blankets to drain and help stabilize wet, cut slopes.

Stratified, fine textured deposits—Deposits in this category consist of lacustrine, fine textured sediment transported by glacial meltwater and deposited in quiet proglacial lakes.

Rhineback soils formed in deep, lake-laid deposits of silt and clay. Canadice, Canandaigua, Collamer, Dunkirk, Niagara, and Tonawanda soils formed in deep, silty deposits on lake plains. Alluvial soils include Hamlin, Holderton, Teel, Wakeland, and Wayland soils.

Because of their fine texture and high moisture content, these deposits have relatively low strength. The soils that have a high content of fine sand and silt have low compressibility but are highly erodible and are susceptible to frost action. Hamlin, Holderton, Teel, and Wakeville soils are occasionally flooded for brief periods, and Wayland soils are frequently flooded for long periods of time. Canandaigua soils are subject to ponding.

The fine textured deposits are difficult to use for engineering works, especially in areas that are flat, wet, and subject to ponding. Sites to be used for embankments and heavy structures or buildings, on all of the soils that are formed in these finer textured sediments, must be investigated for strength and settlement characteristics and for the effects of the ground water.

Organic deposits—Organic deposits consist mainly of accumulations of plant remains. In some places they include a minimal amount of mineral soil material. These deposits occur in very poorly drained depressional areas, in bogs that are covered with water during most of the year, and in freshwater marsh areas.

Carlisle and Palms soils formed in organic material, and Saprists formed in freshwater marsh areas. The soils that formed in organic deposits are entirely unsuitable for foundations for engineering work because they are wet, weak, and highly compressible. Generally, the organic material should be removed to a depth where there is suitable underlying material, and should be replaced with suitable backfill. Placing fill material over organic deposits results in long-term settlement.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (USDA, 1998). 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 27 shows the taxonomic 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 Alfisol.

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 Udalf (*Ud*, meaning humid, plus *alf*, from Alfisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; type of saturation; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludalfs (*Hapl*, meaning minimal horizonation, plus *udalf*, the suborder of the Alfisols that has a udic moisture regime).

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

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

SERIES. The series consists of soils within a family that have horizons similar in color, texture, structure, reaction, consistence, mineral and chemical composition, and arrangement in the profile.

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. Characteristics of the soil and the material in which it formed are identified for each series. A pedon, a small three-dimensional area of soil that is typical of the series in the survey area, is described. The detailed description of each soil horizon follows standards in the “Soil Survey Manual” (USDA, 1993). Many of the technical terms used in the descriptions are defined in “Soil Taxonomy Second Edition” (USDA, 1999) and in “Keys to Soil Taxonomy Eighth Edition” (USDA, 1998). Unless otherwise indicated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each taxonomic unit are described in the section “Detailed Soil Map Units.”

Alden Series

The Alden series consists of very deep, very poorly drained, nearly level soils on till plains. These soils formed in silty local colluvium and in the underlying glacial till derived from siltstone, shale and smaller amounts of sandstone. Slope ranges from 0 to 3 percent.

Alden soils are associated with the moderately well drained Schuyler and Chautauqua soils, the somewhat poorly drained Fremont and Busti soils, the poorly drained Ashville soils, and the very poorly drained Halsey and Canandaigua soils. Alden soils are in the lowest positions on the landscape, and therefore receive a considerable amount of run-off from the adjacent soils. Ashville soils are at the edge of some areas of the Alden soils. Schuyler and Fremont soils have textures similar to those of Alden soils but are better drained. Alden soils have a higher content of clay than the Chautauqua and Busti soils. They are finer textured than the Halsey soils and are not as silty as the Canandaigua soils.

Typical pedon of Alden mucky silt loam; in the town of Ellicottville; adjacent to C&O railroad tracks, 0.5 miles south of Kruse Road:

A—0 to 6 inches; black (10YR 2/1) mucky silt loam, dark gray (10YR 4/1) dry; few dark reddish brown (5YR 3/2) root mottles; moderate medium granular structure; very friable; many fine roots; 2 percent rock fragments; slightly acid; clear wavy boundary.

Bg1—6 to 16 inches; gray (10YR 5/1) silt loam; moderate medium subangular blocky structure; friable; common fine roots; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; 2 percent rock fragments; slightly acid; clear smooth boundary.

Bg2—16 to 25 inches; gray (10YR 5/1) silty clay loam; weak medium subangular blocky structure; friable, common fine distinct yellowish brown (10YR 5/4) masses of iron accumulation; 2 percent rock fragments; slightly acid; clear wavy boundary.

Cg1—25 to 36 inches; gray (10YR 5/1) silty clay loam; weak thin plate like divisions; friable; common medium distinct brown (7.5YR 4/4) masses of iron accumulation; 5 percent rock fragments; slightly acid; abrupt smooth boundary.

Cg2—36 to 49 inches; gray (10YR 5/1) loam; weak thin plate like divisions; friable; few fine distinct brown (7.5YR 4/4) masses of iron accumulation; 10 percent rock fragments; neutral; abrupt wavy boundary.

2C—49 to 72 inches; light brownish gray (10YR 6/2) gravelly fine sandy loam; massive; friable; few fine faint gray (5Y 5/1)iron depletions; 20 percent rock fragments; neutral.

The thickness of the solum ranges from 24 to 36 inches. The depth to bedrock is more than 60 inches. Free carbonates, if they occur, are at depths greater than 40 inches. The content of rock fragments ranges, by volume, from 0 to 15 percent in the solum, and from 5 to 35 percent in the substratum. Reaction ranges from strongly acid to neutral in the surface layer, from moderately acid to neutral in the subsoil, and moderately acid to slightly alkaline in the substratum.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2. Texture of the fine-earth fraction is very fine sandy loam, loam, or silt loam or the mucky analogs of these textures. Structure is weak or moderate granular. Consistence is friable or very friable. Some undisturbed areas have a 0 horizon 2 to 6 inches thick.

The Bg horizon has hue of 5YR through 5Y, or is neutral in hue. It has value of 4 through 6, and chroma of 0 through 2. Redoximorphic concentrations are few to many, and distinct or prominent. Texture of the fine-earth fraction is very fine sandy loam, silt loam, or silty clay loam. Structure is weak or moderate, fine or medium subangular blocky. Consistence is friable or firm.

The Cg or 2C horizon has hue of 5YR to 5Y, value of 3 to 6, and chroma of 0 to 3. Redoximorphic features are few to many, and faint or distinct. Texture of the fine earth fraction is fine sandy loam, loam, silt loam, silty clay loam, or gravelly analogs. It is massive or has weak plate like divisions. Consistence is friable or firm.

Allard Series

The Allard series consists of very deep, well drained nearly level to gently sloping soils that formed in a mantle of silty deposits 20 to 40 inches deep over stratified glacial outwash deposits. Allard soils are on primary terraces along streams and on the higher secondary terraces. Slopes range from 0 to 8 percent.

Allard soils are in a drainage sequence that includes the moderately well drained Olean soils. These soils are closely associated with Chenango, Castile, Unadilla, Tioga and Middlebury soils. They do not have the content of gravel within the upper 20 inches that is characteristic of the Chenango soils or the Castile soils. The silty Unadilla soils are not underlain by stratified glacial deposits within a depth of 40 inches. Allard soils are higher on the landscape than the Tioga and Middlebury soils and are not subject to flooding.

Typical pedon of Allard silt loam, 0 to 3 percent slopes; in the town of Freedom; north side of Lime Lake Road about 0.5 miles west of the hamlet of Elton:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam; weak fine and medium granular structure; very friable; many fine roots; moderately acid; abrupt smooth boundary.

Bw1—9 to 17 inches; yellowish brown (10YR 5/6) silt loam; weak fine subangular blocky structure; very friable; many fine roots; moderately acid; clear wavy boundary.

Bw2—17 to 23 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; strongly acid; gradual smooth boundary.

Bw3—23 to 34 inches; pale brown (10YR 6/3) silt loam; weak medium subangular blocky structure; friable; few fine roots; strongly acid; abrupt smooth boundary.

2C1—34 to 38 inches; brown (10YR 5/3) very gravelly loamy sand; single grain; loose; 40 percent rock fragments; strongly acid; clear smooth boundary.

2C2—34 to 72 inches; grayish brown (10YR 5/2) stratified very gravelly sand; single grain; loose; 50 percent rock fragments; strongly acid.

The thickness of the solum, or the depth to contrasting deposits, ranges from 20 to 36 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 5 percent in the solum and from 0 to 60 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the surface layer and subsoil and from strongly acid to neutral in the substratum.

The Ap horizon has hue of 7.5YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture in the fine earth fraction is silt loam, loam, very fine sandy loam, or fine sandy loam.

The Bw horizon has hue of 7.5YR or 5Y, value of 4 to 6, and chroma of 3 to 8. Texture in the fine earth fraction is silt loam or very fine sandy loam. Structure is weak or moderate, granular or subangular blocky. Consistence ranges from very friable to firm.

The 2C horizon has hue of 5YR or 5Y, value of 3 to 5, and chroma of 2 to 4. The texture ranges from sand to very gravelly loamy sand. The material is commonly single grain and loose.

Almond Series

The Almond series consists of very deep, somewhat poorly drained, nearly level to strongly sloping soils on uplands. The soils formed in glacial till deposits derived from shale, siltstone, and sandstone. Almond soils are on broad hills of upland till plains above elevations of 1,800 feet. Slopes range from 0 to 15 percent.

The Almond soils are in a drainage sequence with moderately well drained Salamanca soils. Almond soils are associated with the Napoli, Yorkshire, Hornellsville, Gretor and Ashville soils. Almond soils do not have the fragipan typical of the Napoli and Yorkshire soils. Almond soils are also better drained than the Ashville soils, and contain less clay than the Hornellsville soils. Almond soils do not have bedrock within a depth of 40 inches that is characteristic of the Hornellsville and Gretor soils.

Typical pedon of Almond silt loam, 0 to 3 percent slopes; in the town of Lyndon; 1.2 miles east of North Center Road and Porter Road, 100 feet north of Porter Road:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine and medium granular structure; friable; many fine roots; 10 percent rock fragments; very strongly acid; abrupt smooth boundary.

Bw1—7 to 11 inches; brown (10YR 5/3) silt loam; weak fine subangular blocky structure; very friable; common fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; and light brownish gray (10YR 6/2) iron depletions within the matrix; 10 percent rock fragments; very strongly acid; clear wavy boundary.

Bw2—11 to 22 inches; light olive brown (2.5Y 5/4) channery silty clay loam; moderate fine and medium subangular blocky structure; friable; few fine roots; light brownish gray (10YR 6/2) ped faces; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation within the matrix; common medium distinct grayish brown (10YR 5/2) and light brownish gray (10YR 6/2) iron depletions within the matrix; 20 percent rock fragments; very strongly acid; clear wavy boundary.

Bw3—22 to 37 inches; light olive brown (2.5Y 5/4) channery silty clay loam; weak medium subangular blocky structure; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; light brownish gray (10YR 6/2) iron depletions within the matrix; 30 percent rock fragments; moderately acid; clear wavy boundary.

C—37 to 72 inches; olive brown (2.5Y 4/4) channery silty clay loam; massive; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; grayish brown (10YR 5/2) iron depletions within the matrix; 30 percent rock fragments, 15 percent larger than 3 inches, slightly acid.

The thickness of the solum ranges from 24 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments range from 10 to 35 percent in the solum and from 15 to 60 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the solum and from strongly acid to neutral in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4 and chroma of 2 or 3. Texture is silt loam or silty clay loam in the fine earth fraction.

The B horizon has hue of 10YR or 5Y, values of 4 to 6, and chroma of 2 to 4. The texture is silt loam or silty clay loam in the fine earth fraction. Redoximorphic features are common to many, medium and distinct. Structure is weak or moderate, fine to coarse subangular blocky. Consistence is friable or firm.

The C horizon has hue of 10YR or 5Y, values of 4 to 6, and chroma of 2 to 4. The texture is silt loam or silty clay loam in the fine earth fraction. The material is massive, and consistence is firm or very firm.

Ashville Series

The Ashville series consists of very deep, poorly drained, nearly level soils on glaciated uplands. The soils formed in silty local colluvium and glacial till deposits derived from underlying silty shale and smaller amounts of sandstone. Slopes range from 0 to 3 percent.

Ashville soils are associated with moderately well drained Schuyler and Chautauqua soils, somewhat poorly drained Fremont and Busti soils, the poorly drained Canandaigua soils, and very poorly drained Alden soil. Ashville soils are slightly better drained than the Alden soil, and generally receive less runoff from the adjacent soils. Schuyler and Fremont soils have textures similar to those of the Ashville soils but are better drained. Ashville soils have a higher content of clay than Chautauqua and Busti soils. These soils are not as silty as the poorly drained Canandaigua soils.

Typical pedon of Ashville silt loam; in the town of Yorkshire; 0.5 miles east of Weaver Road, near Delmad Road:

A—0 to 9 inches; very dark gray (10YR 3/1) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments; neutral; clear smooth boundary.

Bg1—9 to 16 inches; gray (10YR 5/1) silt loam; weak fine subangular blocky structure; friable; common fine roots; common pores; common medium distinct olive brown (2.5Y 4/4) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 5 percent rock fragments; slightly acid; clear wavy boundary.

Bg2—16 to 23 inches; grayish brown (10YR 5/2) silt loam; weak medium subangular blocky structure; slightly sticky; few fine roots in upper part; common pores; common medium distinct yellowish brown (10YR 5/4) and dark brown (10YR 3/3) masses of iron accumulation in the matrix; 5 to 10 percent rock fragments; slightly acid; clear smooth boundary.

Bg3—23 to 44 inches; dark grayish brown (10YR 4/2) channery silt loam; weak very coarse prismatic structure parting to weak coarse subangular blocky; slightly firm; some brittleness; gray (10YR 5/1) coarse silt between prisms in upper part; gray (10YR 5/1) clay in fine pores in lower part; common medium distinct brown (7.5YR 4/4) masses of iron accumulation; light brownish gray (10YR 6/2) iron depletions in the matrix; 15 percent rock fragments; neutral; clear wavy boundary.

Cg—44 to 72 inches; grayish brown (2.5Y 5/2) channery silt loam; few medium distinct brown (10YR 4/3) and yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; massive; firm; 20 percent rock fragments; slightly alkaline; slightly effervescent.

The thickness of the solum ranges from 25 to 45 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 15 percent in the solum, and from 10 to 50 percent in the substratum. Reaction ranges from strongly acid to neutral in the surface layer, from moderately acid to neutral in the subsoil, and from moderately acid to moderately alkaline in the substratum.

The A or Ap horizon has hue of 2.5Y or 10YR, value of 2 or 3, (6 or 7 dry) and chroma of 1 or 2. The texture is loam, very fine sandy loam or silt loam.

The Bg horizon has hue of 10YR or 5Y, value of 3 to 6, and chroma of 1 or 2. Texture is loam, silt loam or silty clay loam. It has few to many, faint to distinct high and low chroma redoximorphic features. Structure is weak or moderate subangular blocky, or coarse or very coarse prismatic. Consistence is firm or friable.

The Cg horizon has hue and value similar to the B horizon and chroma of 1 to 4. The texture is silt loam, loam or fine sandy loam in the fine earth fraction. The material is massive, or has weak or moderate plate like divisions. Consistence is friable or firm.

Atkins Series

The Atkins series consists of very deep, poorly drained, nearly level soils that formed in recent alluvium along major streams and their tributaries in the southern part of the county. The Atkins soils are in the lowest parts of the flood plain, commonly in slack water areas farthest from the stream. Slope ranges from 0 to 3 percent.

Atkins soils are in a drainage sequence that includes moderately well drained Philo soils, and well drained Pope soils. Atkins soils are located in the lowest positions on the landscape and therefore receive a considerable amount of runoff from the adjacent soils. Atkins soils are associated with Canandaigua, Halsey, Holderton and Middlebury soils. Atkins soils are wetter than Holderton or Middlebury soils and contain more clay in the subsoil. Atkins soils lack the sand and gravel content of the Halsey soils, and Atkins soils are frequently flooded unlike the silty Canandaigua soils.

Typical pedon of Atkins silt loam; in the town of Portville; 0.8 mile south of Barberton Road and NY Route 305, 125 feet east of NY Route 305:

A—0 to 4 inches; very dark gray (10YR 3/1) silt loam; weak fine granular structure; friable; many fine roots; strongly acid; clear smooth boundary.

Bg1—4 to 16 inches; dark gray (2.5Y 4/1) loam; weak fine subangular blocky structure; friable; many fine roots; many medium distinct strong brown (7.5YR 5/8) iron concentration in the matrix; strongly acid; clear wavy boundary.

Bg2—16 to 24 inches; gray (10YR 5/1) loam; weak medium subangular blocky structure; friable; few roots; common medium distinct strong brown (7.5YR 5/8) iron concentration in the matrix; strongly acid; clear wavy boundary.

Bg3—24 to 38 inches; gray (10YR 6/1) silty clay loam; weak medium subangular blocky structure; firm, slightly plastic; few medium distinct strong brown (7.5YR 5/8) iron concentration in the matrix; strongly acid; clear wavy boundary.

Cg1—38 to 55 inches; gray (10YR 6/1) sandy loam; massive; friable; strongly acid; clear wavy boundary.

Cg2—55 to 72 inches; gray (10YR 5/1) gravelly sandy loam; massive; friable; 20 percent rock fragments; strongly acid.

The thickness of the solum ranges from 25 to 50 inches. The depth to bedrock is more than 60 inches. Rock fragments are commonly absent, but may range from 0 to 20 percent by volume in the solum and from 0 to 60 percent by volume in the C horizon. Reaction ranges from very strongly acid or strongly acid above depths of 40 inches and very strongly acid to moderately acid below 40 inches.

The A horizon has hue of 10YR, value of 3 to 7, and chroma of 1 to 4. The texture in the fine earth fraction is generally silt loam but includes loam and silty clay loam.

The Bg horizon has hue of 7.5YR or 5Y, value of 4 to 7, and chroma of 0 to 2. The texture in the fine earth fraction is silty clay loam, silt loam, loam and fine sandy loam. Structure is weak or moderate, fine or medium, subangular blocky. Consistence is friable or firm.

The C horizon has hue of 7.5YR or 5Y, value of 4 to 7, and chroma of 0 to 8. The C horizon is weakly stratified. The texture in the fine earth fraction is silty clay loam, silt loam, loam, and sandy loam. The material is massive or has plate like divisions. Consistence is friable or firm.

Barcelona Series

The Barcelona series consists of deep, somewhat poorly drained, nearly level to gently sloping soils on glacial lake plains. These soils formed in silty lacustrine sediments over glacial till. Soft shale is at a depth of 40 to 60 inches. Slopes range from 0 to 8 percent.

Barcelona soils are closely associated with Canandaigua, Canadice, Niagara, Rhinebeck, and Minoa soils. Barcelona soils have textures similar to those of Canandaigua and Niagara soils but are underlain by glacial till and shale bedrock. These soils do not have the sandy textures that are typical of Minoa soils, and they have a lower content of clay than Rhinebeck and Canadice soils.

Typical pedon of Barcelona silt loam, 0 to 3 percent slopes; in the town of Perrysburg; 350 yards south of County Route 42, and 0.6 mile west of Van Vleck Road and County Route 42:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine subangular blocky structure; friable; many fine roots; less than 2 percent rock fragments; slightly acid; abrupt smooth boundary.

Beg—9 to 21 inches; grayish brown (10YR 5/2) silt loam; weak medium subangular blocky structure; friable; common fine roots; thin clay flows in pores and on ped faces; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; less than 2 percent rock fragments; moderately acid; clear wavy boundary.

Bt—21 to 36 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; distinct clay flows in pores and on ped faces; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium distinct gray (10YR 6/1) iron depletions in the matrix; 2 percent rock fragments; moderately acid; clear wavy boundary.

2BC—36 to 42 inches; brown (10YR 4/3) channery silt loam; weak medium platy structure; firm; yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; common medium distinct gray (10YR 6/1) iron depletions in the matrix; 15 percent rock fragments; moderately acid; clear wavy boundary.

2C—2 to 46 inches; gray (10YR 6/1), brown (10YR 4/3) and yellowish brown (10YR 5/6) very channery silt loam; massive; firm; 50 percent rock fragments; moderately acid; abrupt smooth boundary.

3R—46 inches; shale bedrock.

The thickness of the solum ranges from 20 to 50 inches. The depth to bedrock, typically shale and siltstone, ranges from 40 to 60 inches. The content of rock fragments consisting mainly of channery fragments and gravel ranges, by volume, from 0 to 5 percent in the surface layer and the upper part of subsoil and from 15 to 50 percent in the lower part of the subsoil and in the substratum. Reaction ranges from moderately acid to neutral in the surface layer, and from moderately acid to slightly alkaline in the subsurface layer, subsoil, and substratum.

The Ap horizon has a hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. The texture is silt loam, very fine sandy loam or loam in the fine earth fraction.

The BEg horizon has hue of 10YR or 5Y, value of 4 or 5, and chroma of 1 or 2. The texture is silt loam, silty clay loam or very fine sandy loam.

The Bt horizon has hue of 7.5YR or 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is silt loam or silty clay loam in the fine earth fraction. Structure is weak or moderate, fine or medium, angular or subangular blocky. Consistence is friable or firm.

The 2BC horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 1 to 6. The texture is silt loam, silty clay loam or loam in the fine-earth fraction. Structure is angular or subangular blocky, or platy. Consistence is friable or firm.

The 2C horizon has color and texture similar to the 2BC horizon. It is massive or has plate-like divisions. Consistence is friable or firm.

The 3R horizon is horizontal bedded shale or siltstone.

Brinkerton Series

The Brinkerton series consists of very deep, poorly drained, nearly level or gently sloping soils that formed in silty colluvium derived from shale and siltstone. These soils are on foot slopes of the steeper slopes, concave basins in upland areas and colluvial fans. Slopes range from 0 to 8 percent.

Brinkerton soils are in a drainage sequence with somewhat poorly drained Portville soils and moderately well drained Buchanan soils. They are closely associated with Rayne, Cavode, Atkins, and Canandaigua soils. None of these soils have a fragipan. Additionally, Rayne and Cavode soils are better drained, and Atkins and Canandaigua soils generally lack rock fragments.

Typical pedon of Brinkerton silt loam, 0 to 3 percent slope; in the town of Red House; in Allegany State Park; 1.2 miles north of France Brook Road and Allegany State Park Route 2, 50 feet east of Allegany State Park Route 2.

Ap—0 to 7 inches; very dark gray (10YR 3/1) silt loam; weak fine granular structure; friable; many fine roots with oxidized rhizospheres; 5 percent rock fragments; strongly acid; abrupt smooth boundary.

Btg1—7 to 12 inches; gray (10YR 6/1) silty clay loam; moderate medium subangular blocky structure; friable; common fine and medium roots; common distinct clay films on all faces of peds; common medium distinct strong brown (7.5YR 4/6) and brown (10YR 4/3) masses of iron accumulation in the matrix; 5 percent rock fragments; strongly acid; gradual wavy boundary.

Btg2—12 to 25 inches; gray (10YR 6/1) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common distinct clay films on faces of all peds; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; common medium distinct black (10YR 2/1) manganese stains; 5 percent rock fragments; strongly acid; gradual wavy boundary.

Btxg—25 to 45 inches; grayish brown (2.5Y 5/2) channery silt loam; moderate coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; gray (5Y 5/1) prism faces with strong brown (7.5YR 5/8) exteriors; few distinct clay films on faces of all peds; common medium distinct black (10YR 2/1) manganese stains; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 15 percent rock fragments; strongly acid; clear wavy boundary.

C—45 to 72 inches; brown (10YR 4/3) channery silt loam; massive; firm; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 15 percent rock fragments; strongly acid.

The thickness of the solum ranges from 40 to 65 inches. The depth to bedrock is greater than 60 inches. The depth to the fragipan ranges from 11 to 30 inches. The content of rock fragments ranges, by volume, from 0 to 10 percent by volume above the fragipan, from 0 to 30 in the fragipan, and from 10 to 80 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the solum, and from strongly acid to slightly acid in the substratum.

The Ap horizon is neutral, or has hue of 10YR or 2.5Y, value of 3 to 6, and chroma of 0 to 3. Texture in the fine earth fraction ranges from silt loam to silty clay loam.

The Bt horizon is neutral, or has hue of 7.5YR or 5Y, value of 4 to 6, and chroma of 0 to 2. Texture in the fine earth fraction is silty clay loam or silt loam. Structure is weak or moderate subangular blocky or prismatic. Consistence ranges from friable or firm.

The Btx horizon is neutral, or has hue of 7.5YR or 2.5Y, value of 4 to 6, and chroma of 0 to 3, and has redoximorphic features with shades of gray, brown and yellow. Texture in the fine earth fraction is silt loam, loam, clay loam, or silty clay loam. Structure is prismatic or platy, or the material is massive. Consistence ranges from firm to very firm.

The C horizon is neutral, or has hue of 7.5YR or 2.5Y, value of 4 to 6, and chroma of 0 to 4, and has redoximorphic features with shades of gray and brown. Texture in the fine earth fraction is silt loam, silty clay loam, or loam. The material is massive or has plate like divisions. Consistence is firm or very firm.

Buchanan Series

The Buchanan series consists of very deep, moderately well drained, gently sloping to moderately steep soils on foot slopes, side slopes, and benches of the unglaciated plateau. These soils formed in colluvium weathered from interbedded shale, siltstone and fine-grained sandstone. Slopes range from 3 to 25 percent.

Buchanan soils are in a drainage sequence that includes the somewhat poorly drained Portville soils, and the poorly drained Brinkerton soils. Buchanan soils are closely associated with well drained Gilpin and Rayne soils, somewhat poorly drained Cavode, and moderately well drained Eldred soils. Buchanan soils are deeper to bedrock than Gilpin soils, and have a fragipan layer which is lacking in Rayne, Cavode, and Eldred soils. They are also wetter than Rayne soils and contain less clay in the subsoil than Cavode soils.

Typical pedon of Buchanan silt loam, 15 to 25 percent slopes; in the town of Portville; 1,800 feet west of McCann Hollow Road and NY Route 16, 50 feet south of McCann Hollow Road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; very friable; many fine roots; strongly acid, 10 percent rock fragments; abrupt smooth boundary.

BE—6 to 16 inches; yellowish brown (10YR 5/6) channery silt loam; moderate medium subangular blocky structure; very friable; common fine and medium roots; 15 percent rock fragments; strongly acid; clear smooth boundary.

Bt1—16 to 22 inches; yellowish brown (10YR 5/4) channery silt loam; moderate medium subangular blocky structure; friable; common fine roots; few very fine pores with few thin clay films lining pores; 15 percent rock fragments; strongly acid; clear wavy boundary.

Bt2—22 to 33 inches; olive brown (2.5Y 4/4) channery clay loam; moderate medium subangular blocky structure; firm; few very fine roots; common fine pores; many distinct light brownish gray (2.5Y 6/2) continuous clay films on ped faces and lining pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; few black (N 2/0) manganese concretions; 20 percent rock fragments; strongly acid; gradual wavy boundary.

Btx—33 to 45 inches; olive brown (2.5Y 4/4) channery silt loam; weak coarse prismatic parting to weak coarse subangular blocky structure; very firm, brittle; common medium and very fine pores; many light brownish gray (10YR 6/2) clay films covering 50 percent of ped faces and lining pores; prominent streaks 1/2 inch thick with exterior strong brown (7.5YR 5/8) iron accumulations and interior light brownish gray (10YR 6/2) iron depletions; 30 percent rock fragments; strongly acid; clear wavy boundary

C—45 to 72 inches; olive brown (2.5Y 4/4) very gravelly silt loam; massive; firm; many coarse pores; 50 percent rock fragments; strongly acid.

The thickness of the solum ranges from 40 to up to 80 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 40 percent in individual horizons above the fragipan and from 5 to 60 percent in the fragipan and substratum. Reaction ranges from extremely acid to strongly acid throughout the soil.

The Ap or A horizon has hues of 7.5YR or 10YR, value of 3 to 6, and chroma of 1 to 4. Fine earth texture is fine sandy loam, sandy loam, silt loam, or loam.

A BE horizon is present in some pedons with hue of 10YR or 7.5YR, value and chroma of 5 or 6. Texture of the fine earth fraction is silt loam or loam.

The Bt horizon has hue of 10YR or 5Y, value of 4 to 6 and chroma of 3 to 6. It has low chroma redoximorphic features in the lower part. Texture of the fine earth fraction is silt loam, loam, clay loam, or sandy clay loam. Structure is weak or moderate, fine or medium subangular blocky. Consistence is friable or firm.

The Btx horizon has hue of 10YR or 5Y, value of 4 to 6, and chroma of 3 to 6. Texture of the fine earth fraction is silt loam, loam, clay loam, or sandy clay loam. Structure is weak or moderate prismatic parting to platy or subangular blocky. Consistence is firm or very firm and brittle.

The C horizon has hue of 5YR or 2.5Y, value of 4 to 6 and chroma of 1 to 6. Texture of the fine earth fraction is silt loam, loam, sandy clay loam, or clay loam.

Busti Series

The Busti series consists of very deep, somewhat poorly drained, nearly level to strongly sloping soils on uplands. These soils formed in glacial till deposits derived from siltstone, sandstone and smaller amounts of shale. Slopes range from 0 to 15 percent.

Busti soils are in a drainage sequence that includes the well drained Chadakoin soils, moderately well drained Chautauqua soils, and poorly drained Ashville soils. Busti soils are associated with Fremont, Darien, Volusia, and Erie soils. They are also associated with Orpark soils, which have bedrock at a depth of 20 to 40 inches. Busti soils do not have the fragipan that is characteristic of Volusia and Erie soils, and they have less clay than Fremont and Darien soils.

Typical pedon of Busti silt loam, 3 to 8 percent slopes; in the town of Cold Springs; 1,000 feet east of Tyler Whitmore and Earl Seaton Road, 20 feet north of Earl Seaton Road:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine and medium granular structure; friable; many fine roots; 10 percent rock fragments; moderately acid; abrupt smooth boundary.

Eg—8 to 13 inches; grayish brown (10YR 5/2) loam; weak medium subangular blocky structure; friable; common fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; common medium distinct light brownish gray (10YR 6/2) iron depletions within the matrix; 10 percent rock fragments; moderately acid; abrupt wavy boundary.

Bw1—13 to 26 inches; brown (10YR 5/3) gravelly loam; weak medium subangular blocky structure; friable; grayish brown (10YR 5/2) ped faces; few fine roots; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; common medium distinct light brownish gray (10YR 6/2) iron depletions within the matrix; 20 percent rock fragments; moderately acid; clear wavy boundary.

Bw2—26 to 35 inches; brown (10YR 4/3) gravelly loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/6) and reddish brown (5YR 5/4) masses of iron accumulation, and common medium distinct grayish brown (10YR 5/2) iron depletions; 25 percent rock fragments; moderately acid; clear wavy boundary.

BC—35 to 39 inches; brown (10YR 4/3) gravelly loam; weak medium subangular blocky structure; firm; few medium distinct grayish brown (10YR 5/2) and yellowish brown (10YR 5/6) masses of iron accumulation; 25 percent rock fragments; slightly acid; clear wavy boundary.

C—39 to 72 inches; brown (10YR 4/3) gravelly loam; massive; friable; few fine distinct grayish brown (10YR 5/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation; 25 percent rock fragments; slightly acid.

The thickness of the solum ranges from 20 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 15 percent in the surface layer, from 10 to 25 percent in the subsoil, and from 15 to 35 percent in the substratum. Reaction ranges from moderately acid to neutral throughout the profile.

The Ap horizon has hue of 7.5YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. Texture of the fine earth fraction is silt loam or loam.

The Eg horizon has hue of 7.5YR or 2.5Y, value of 5 to 7, and chroma of 2. Texture of the fine earth fraction is silt loam or loam. Consistence is very friable or friable.

The Bw horizon has hue of 7.5YR or 2.5Y, value of 4 or 5, and chroma of 2 to 4. Medium or coarse, distinct redoximorphic features consisting of both iron depletions and iron masses are common to many. Texture of the fine-earth fraction is silt loam or loam. Structure is prismatic or subangular blocky. Consistence ranges from very friable through firm.

The BC horizon is similar to the Bw horizon except structure is weak subangular blocky, prismatic or platy, or the horizon is massive.

The C horizon has hue of 7.5YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4. Texture of the fine-earth fraction is silt loam or loam. Consistence is friable or firm. The horizon is massive, or has weak plate- like divisions.

Canadice Series

The Canadice series consists of very deep, poorly drained soils that formed in glacial lake sediments that have a high content of clay. The Canadice soils are in slight depressions in old glacial lake basins. Slopes range from 0 to 3 percent.

Canadice soils are the poorly drained member of the drainage sequence that includes somewhat poorly drained Rhinebeck soils. The Canadice soils are also associated with Canandaigua, Lamson, Niagara, and Tonawanda soils. Canadice soils have higher clay content in the subsoil than the silty Canandaigua soils and sandy Lamson soils. Canadice soils are not as well drained as the Niagara and Tonawanda soils and has a higher clay content than these soils.

Typical pedon of Canadice silty clay loam; in the town of Yorkshire; 0.8 mile south of Eddy Road, 1.0 mile west of the railroad tracks:

Ap—0 to 8 inches; very dark gray (10YR 3/1) silty clay loam; light brownish gray (2.5Y 6/2) dry; moderate medium and coarse subangular blocky structure; friable; moderately acid; abrupt smooth boundary.

Btg1—8 to 18 inches; grayish brown (2.5Y 5/2) silty clay loam; moderate medium angular blocky structure; firm; common fine roots; few gray (10YR 5/1) clay films on ped faces; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; slightly acid; clear wavy boundary.

Btg2—18 to 29 inches; olive gray (5Y 5/2) silty clay; moderate coarse prismatic structure parting to medium angular blocky structure; firm; thin gray (10YR 5/1) clay films on ped faces; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; slightly acid; gradual smooth boundary.

Btg3—29 to 42 inches; dark gray (5Y 4/1) silty clay; weak coarse angular blocky structure; firm; continuous gray (5Y 5/1) clay films on ped faces; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; neutral; gradual smooth boundary.

Cg—42 to 72 inches; grayish brown (2.5Y 5/2) silty clay loam with varves of silty clay; massive; firm; common medium distinct dark brown (10YR 4/3) masses of iron accumulation; common medium distinct gray (N 5/0) iron depletions; slightly alkaline.

The thickness of the solum ranges from 28 to 58 inches. The depth to bedrock is more than 60 inches. Rock fragments commonly do not occur in the profile, but in some pedons they make up as much as 2 percent of the profile. Reaction ranges from very strongly acid to slightly acid in the A horizon, very strongly acid to slightly alkaline in the B horizon, and from neutral to moderately alkaline in the C horizon.

The Ap horizon has a hue of 10YR or 2.5Y, value of 3 to 5 and chroma of 1 or 2. Structure is weak or moderate, fine to coarse subangular blocky or angular blocky. The texture of the fine earth fraction is silt loam or silty clay loam.

The Bt horizon has hue of 10YR or 5Y or is neutral in hue. It has value of 4 to 6, and chroma of 0 to 2. The texture of the fine earth fraction ranges from silty clay loam to clay. Structure is coarse or very coarse prismatic parting to moderate, medium subangular blocky. Consistence is firm.

The Cg horizons have colors and textures similar to those of the Bt horizon. The Cg horizon typically is massive or varved.

Canandaigua Series

The Canandaigua series consists of very deep, poorly drained and very poorly drained, nearly level soils that formed in lacustrine deposits of silt, very fine sand and clay. These soils are on glacial lake plains, in narrow drainageways and basin-like areas within the larger valleys, and in depressional areas on uplands where water-sorted deposits have accumulated. Slopes range from 0 to 3 percent.

Canandaigua soils are in a drainage sequence that includes the moderately well drained Collamer soils and the somewhat poorly drained Niagara soils. Canandaigua soils are also associated with Alden, Ashville, Canadice, and Lamson soils. In the uplands, they are in landscape positions similar to those of Ashville soils; however, they do not have the content of rock fragments that is typical of Ashville soils. At the lower elevations, Canandaigua soils are in landscape positions similar to those of Alden, Canadice, and Lamson soils. These soils contain less clay than the Canadice soils and more silt and clay than the sandy Lamson soils. They do not have the content of rock fragments that are typical of Alden soils.

Typical pedon of Canandaigua silt loam; in the town of Dayton; 150 feet south of Bentley Road, 1.0 mile east of Bentley Road and County Route 2:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 5/1) dry; weak medium granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

Bg1—9 to 18 inches; gray (10YR 6/1) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; common medium prominent strong brown (7.5YR 5/6) and yellowish brown (10YR 5/4) masses of iron accumulation; neutral; gradual smooth boundary.

Bg2—18 to 32 inches; gray (10YR 5/1) silty clay loam; moderate medium subangular blocky structure; friable; gray (10YR 6/1) ped faces; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common medium distinct gray (10YR 6/1) iron depletions; neutral; gradual wavy boundary.

C1—32 to 44 inches; gray (10YR 6/1) silty clay loam; massive; friable; common medium distinct grayish brown (10YR 5/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation; neutral; clear wavy boundary.

C2—44 to 72 inches; yellowish brown (10YR 5/6), grayish brown (10YR 5/2) and gray (10YR 6/1) silt loam; massive; friable; slightly alkaline; slightly effervescent.

The thickness of the solum ranges from 20 to 40 inches. The depth to bedrock is more than 60 inches. Rock fragments commonly do not occur, but in some pedons they make up as much as 10 percent of the profile. The depth to free carbonates range from 18 to 60 inches, though in some pedons they may not occur within 80 inches. Reaction ranges from moderately acid to slightly alkaline in the solum, and from slightly acid to moderately alkaline in the substratum.

The Ap horizon has hue of 5YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2. Texture of the fine earth fraction is silt loam, very fine sandy loam, loam, or fine sandy loam, or mucky analogs.

The Bg horizon has hue of 5YR or 2.5Y or is neutral in hue. It has value of 5 to 7, and chroma of 0 to 2. Texture of the fine earth fraction is silt loam, very fine sandy loam or silty clay loam. Structure is weak to strong, very fine to coarse subangular blocky. Consistence is friable to firm.

The C horizon has hue of 5YR or 5Y, value of 3 or 6, and chroma of 1 to 3. Texture of the fine earth fraction is silty clay loam, silt loam, or very fine sandy loam. The material is massive or has plate like divisions. Consistence is friable to firm.

Canaseraga Series

The Canaseraga series consists of very deep, moderately well drained, nearly level to strongly sloping soils formed in a windblown silty mantle overlying firm glacial till derived from siltstone, shale and some sandstone. These soils are on side slopes and in convex areas on hilltops of glaciated and dissected uplands. Slopes range from 0 to 15 percent.

Canaseraga soils are in a drainage sequence that includes the somewhat poorly drained Dalton soils. Mardin, Schuyler, Valois and Chautauqua soils are in similar positions on the landscape. Canaseraga soils have a mantle of silty material that is not present in areas of the Mardin soils, and contain less clay than Schuyler soils. Also, they have a dense fragipan that is not present in Schuyler, Valois, and Chautauqua soils.

Typical pedon of Canaseraga silt loam, 3 to 8 percent slopes; in the town of Farmersville; 0.2 mile east of Laidlaw Road about 1 mile from Pigeon Hill Road:

A—0 to 5 inches; dark brown (10YR 3/3) silt loam; moderate fine granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

Bw1—5 to 9 inches; strong brown (7.5YR 5/6) silt loam; weak fine subangular blocky structure; very friable; common fine roots; common pores; strongly acid; clear wavy boundary.

Bw2—9 to 18 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; common fine pores; moderately acid; abrupt wavy boundary.

Bw3—18 to 23 inches; brown (10YR 5/3) silt loam; weak coarse subangular blocky structure; friable; few fine roots; common fine pores; common medium distinct brown (7.5YR 5/4) masses of iron accumulation; moderately acid; abrupt wavy boundary.

Bx1—23 to 28 inches; brown (10YR 5/3) silt loam; moderate thin platy structure; firm; some brittleness; common fine pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; common medium distinct light brownish gray (10YR 6/2) iron depletions; 5 percent rock fragments, consisting mainly of gravel; moderately acid; clear wavy boundary.

2Bx2—28 to 53 inches; olive brown (2.5Y 4/4) gravelly silt loam; weak very coarse prismatic structure; very firm and brittle; few fine pores; prisms coated with strong brown (7.5YR 5/6) and separated by gray (10YR 6/1) silt; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; common medium faint grayish brown (2.5Y 5/2) iron depletions; 20 percent rock fragments, consisting mainly of gravel; moderately acid; gradual smooth boundary.

2C—53 to 72 inches; dark grayish brown (2.5Y 4/2) channery silt loam; massive; firm; few fine pores; few fine faint dark yellowish brown (10YR 4/4) masses of iron accumulation; 25 percent rock fragments, consisting mainly of gravel and channers; slightly acid.

The thickness of the solum ranges from 40 to 60 inches. The depth to bedrock is more than 60 inches. The thickness of the silty mantle ranges from 15 to 36 inches, and in some pedons the silty mantle extends into the upper part of the fragipan. The content of rock fragments ranges, by volume, from 0 to 10 percent in the silt mantle and from 10 to 40 percent below the mantle. Reaction ranges from very strongly acid to moderately acid in the surface layer and upper subsoil, from strongly acid to neutral in the fragipan, and from moderately acid to moderately alkaline in the substratum.

The A horizon has hue of 10YR or 7.5YR, value of 3 to 5, and chroma of 2 or 3. The texture of the fine earth fraction is very fine sandy loam, loam or silt loam.

The Bw horizon has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6. The texture of the fine earth fraction is very fine sandy loam or silt loam. Structure is weak or very weak, fine or medium, granular or subangular blocky. Consistence is friable or very friable.

The Bx horizon has hue of 7.5YR or 5Y, value of 4 or 5, and chroma of 2 to 4, with few or common, faint or distinct redoximorphic features. Structure is moderate of strong prismatic or platy. The texture of the fine earth fraction is silt loam or loam. Consistence is firm or very firm and brittle.

The 2Bx horizon has hue of 5YR or 5Y, value of 4 or 5, and chroma of 2 to 4, with few or common, faint or distinct redoximorphic features. Structure is moderate of strong prismatic. The texture of the fine earth fraction is silt loam or loam. Consistence is firm or very firm and brittle.

The 2C horizon has the same range in color and texture as the 2Bx horizon. It is massive or has weak or moderate thick plate like divisions. Consistence is firm or very firm.

Carlisle Series

The Carlisle series consists of very deep, very poorly drained, organic soils that formed in black, well decomposed herbaceous and woody plant remnants. The organic deposit is more than 51 inches deep. These soils are in bogs on the lake plains and outwash plains. Slopes range from 0 to 2 percent.

Carlisle soils are in landscapes similar to those of Palms, Halsey, Alden, and Canandaigua soils. They are deeper to contrasting deposits than Palms soils. Carlisle soils also have an organic layer that is thicker than that of gravelly Halsey soils, silty Canandaigua soils, and Alden soils.

Typical pedon of Carlisle muck; in the town of Dayton; 1.3 miles south of village of Markham, 600 feet east of New York State Route 62:

Oa1—0 to 15 inches; black (10YR 2/1 on broken face and rubbed) sapric material; 10 percent fiber and 5 percent rubbed; weak fine granular structure; friable; fibers are primarily live grass roots; neutral; abrupt smooth boundary.

Oa2—15 to 72 inches; black (10YR 2/1 rubbed) sapric material; 5 percent fiber and a trace rubbed; weak fine granular structure to massive; friable; 15 percent woody fragments; neutral.

The reaction throughout the pedon ranges from very strongly acid to slightly alkaline. Woody fragments occur throughout the profile in most pedons, consisting of twigs, branches, logs or stumps and average from 15 to 30 percent by volume in the control section. Fragments range in size from 1/4 to more than a foot in diameter. The mean annual soil temperature ranges from 47 to 54 degrees F. The surface tier has hue of 10YR to 5YR or is neutral; value is 1 or 2 and the chroma ranges from 0 to 2. It is dominantly sapric material; however, some pedons contain hemic material and others have various proportions of both sapric and hemic materials. Some pedons have a thin fibric surface layer up to 2 inches thick. The structure of the surface tier is weak or medium, coarse to fine granular, or subangular blocky. Overwash phases have surface textures of silt loam or silty clay loam. The subsurface tier has hue of 5YR, 7.5YR or 10YR, value of 2 or 3, and chroma of 0 to 4. Chroma or value or both may change from 0.5 to 2 units upon rubbing.

Broken faces become darker upon brief exposure to air. The layer is dominated by sapric material with a rubbed fiber content of less than 16 percent of the organic volume. The subsurface tier has granular or blocky structure or is massive. The upper portion typically has weak or moderate, fine to coarse granular or blocky structure. The lower portion commonly is massive, but in some pedons has platy structure. The aggregates in this tier are quite firm, but break abruptly under pressure.

The unrubbed, well decomposed organic material resembles woody plant tissue. The bottom tier has colors similar to the subsurface tier and has variable amounts of woody and herbaceous layers; however, herbaceous fibers generally constitute the greater proportion. This tier commonly is massive but in some pedons it has weak coarse blocky or thick platy structure. The subsurface and bottom tiers are dominantly sapric material but some pedons have thin layers of hemic material. The combined thickness of these hemic layers is less than 10 inches.

Carrollton Series

The Carrollton series consists of moderately deep, well drained, gently sloping to very steep soils that formed in material weathered from interbedded shale, siltstone and fine-grained sandstone. Bedrock is at a depth of 20 to 40 inches. The soils are on non-glaciated hilltops and side slopes above elevations of 1,800 feet, where the topography is influenced by the underlying bedrock. Slopes range from 3 to 50 percent.

The Carrollton soils are in a drainage sequence with somewhat poorly drained Frewsburg soils. Kinzua, Elko, Eldred, Mandy, and Onoville soils are on associated landscapes. Carrollton soils have bedrock at a depth of 20 to 40 inches, but Kinzua and Eldred soils have bedrock at a depth of more than 40 inches. Carrollton soils do not have the fragipan that is typical of the very deep Elko and Onoville soils. Carrollton soils lack the numerous rock fragments typical of Mandy soils.

Typical pedon of Carrollton channery silt loam, 25 to 35 percent slopes; in the town of Allegany; 3/4 mile southeast of Indian Creek Road and New York State Route 16, 50 feet north of Indian Creek road:

A—0 to 2 inches; very dark grayish brown (10YR 3/2) channery silt loam; pale brown (10YR 6/3) dry; weak medium granular structure; friable; 15 percent rock fragments; strongly acid; abrupt wavy boundary.

BE—2 to 6 inches; brown (7.5YR 5/4) channery silt loam; weak medium subangular blocky structure; friable; 20 percent rock fragments; strongly acid; gradual smooth boundary.
Bt1—6 to 17 inches; brown (7.5YR 5/4) channery silt loam; moderate medium subangular blocky structure; friable; few distinct clay flows in pores and on ped faces; 20 percent rock fragments; strongly acid; gradual smooth boundary.
Bt2—17 to 23 inches; yellowish brown (10YR 5/6) channery silt loam; weak medium subangular blocky structure; friable; few clay flows in pores and on ped faces; 25 percent rock fragments; strongly acid; abrupt smooth boundary.
C—23 to 30 inches; yellowish brown (10YR 5/4) channery silt loam; weak medium plate-like divisions; friable; 30 percent rock fragments; strongly acid; abrupt smooth boundary.
R—30 inches; olive (5Y 4/3) shale bedrock.

The thickness of the solum ranges from 18 to 36 inches. Bedrock is at a depth of 20 to 40 inches. The content of rock fragments, mainly channers and flagstones, ranges by volume, from 15 to 35 percent in the surface layer and subsoil, and from 15 to 50 percent in the substratum. Reaction is very strongly acid or strongly acid throughout the profile.

The A horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 4. The texture is silt loam or loam in the fine-earth fraction.

The BE horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8. The texture is loam or silt loam in the fine earth fraction.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8. The texture is silt loam, loam, silty clay loam, or clay loam in the fine earth fraction. Structure is weak or moderate, angular or subangular blocky. Consistence is friable or firm.

The C horizon has hue of 7.5YR or 5Y, value of 4 to 6, and chroma of 3 to 8. The texture is silt loam, loam, silty clay loam or clay loam in the fine earth fraction. In some pedons this horizon may have redoximorphic features. Consistence is friable or firm. The horizon is massive or has plate-like divisions.

The R horizon is horizontal bedded siltstone, shale or fine grained sandstone bedrock.

Castile Series

The Castile series consists of very deep, moderately well drained, nearly level or gently sloping, soils on terraces, outwash plains, and remnant deltas. These soils formed in glacial outwash deposits that have a high content of sand and gravel. Slopes range from 0 to 8 percent.

Castile soils are in a drainage sequence that includes the well drained Chenango soils, the somewhat poorly drained Red Hook soils, and the very poorly drained Halsey soils. They are associated with Valois, Chautauqua, Scio, Collamer, and Olean soils. They have more rock fragments in the subsoil and substratum than the silty Scio and Collamer soils. They do not have the silty mantle that is typical of Olean soils. Valois and Chautauqua soils are on uplands.

Typical pedon of Castile gravelly silt loam, 0 to 3 percent slopes; in town of Yorkshire; 0.3 mile south of Eddy Road and 0.2 miles west of rail road tracks:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) gravelly silt loam; weak medium granular structure; very friable; many fine roots; 30 percent rock fragments; strongly acid; abrupt smooth boundary.
Bw1—10 to 17 inches; yellowish brown (10YR 5/6)very gravelly silt loam; weak medium subangular blocky structure; friable; common fine roots; many fine pores; 35 percent rock fragments; strongly acid; clear smooth boundary.

Bw2—17 to 30 inches; light olive brown (2.5Y 5/4) very gravelly loam; weak coarse subangular blocky structure; friable; few fine roots; many fine pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; common medium distinct gray (10YR 5/1) iron depletions within the matrix; 40 percent rock fragments; strongly acid; abrupt wavy boundary.

2C—30 to 72 inches; grayish brown (10YR 5/2) stratified very gravelly sand; single grain; loose; 55 percent rock fragments; strongly acid.

The thickness of the solum ranges from 24 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments range, by volume, from 15 to 30 percent in the surface, from 20 to 60 percent in the subsoil, and from 35 to 70 percent in the substratum. The rock fragments are mainly gravel but include up to 10 percent cobblestones and flagstones. Reaction ranges from very strongly acid through moderately acid in the solum and strongly acid through neutral in the substratum. The depth to carbonates ranges from 5 to 10 feet.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 or 3. The texture of the fine earth fraction ranges from sandy loam to silt loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, chroma of 3 to 6. It has high or low chroma redoximorphic features. The texture of the fine-earth fraction ranges from sandy loam to silt loam or the gravelly analogs of those textures. Structure is weak or moderate granular or subangular blocky. Consistence is very friable to firm.

The 2C horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4. The texture of the fine earth fraction ranges from loamy sand to loam (or the gravelly analogs of those textures) or the material is stratified sand and gravel.

Cavode Series

The Cavode series consists of very deep, somewhat poorly drained, gently sloping to moderately steep soils on foot slopes, side slopes, and benches of the unglaciated plateau. These soils formed in material weathered from interbedded shale, siltstone and fine grained sandstone. Slopes range from 3 to 25 percent.

Cavode soils are associated with well drained Gilpin and Rayne soils, moderately well drained Buchanan soils, somewhat poorly drained Portville soils, and poorly drained Brinkerton soils. Cavode soils are deeper to bedrock and wetter than Gilpin soils. They have a higher clay content in the subsoil and are wetter than the Rayne soils. They lack the fragipan typical of Buchanan, Portville, and Brinkerton soils.

Typical pedon of Cavode silt loam, 15 to 25 percent slopes; in the town of South Valley; 1,600 feet southeast of Brown Run Road and Onoville Road, 150 feet north of Onoville Road:

A—0 to 2 inches; very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments; very strongly acid; clear smooth boundary.

BE—2 to 7 inches; brown (10YR 5/3) silt loam; weak fine subangular blocky structure; friable; common fine roots; 5 percent rock fragments; very strongly acid; gradual wavy boundary.

Bt—7 to 14 inches; brown (10YR 5/3) silt loam; weak fine and medium subangular blocky structure; friable; common fine roots; few thin clay films on ped faces; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation and common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 10 percent rock fragments; very strongly acid; clear wavy boundary.

Btg1—14 to 32 inches; light brownish gray (2.5Y 6/2) silty clay loam; moderate medium blocky structure; firm; few fine roots; few thin clay films on ped faces; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation and common medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; 10 percent rock fragments; very strongly acid; clear wavy boundary.

Btg2—32 to 44 inches; light brownish gray (2.5Y 6/2) channery silty clay; strong medium blocky structure; firm; few thin distinct clay films on faces of peds and lining on all surfaces of pores; few prominent black (10YR 2/1) iron and manganese coatings; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation and common medium faint light brownish gray (10YR 6/2) iron depletions in the matrix; 15 percent rock fragments; very strongly acid; clear wavy boundary.

BC—44 to 52 inches; brown (10YR 4/3) channery silty clay; weak medium subangular blocky structure; firm; few thin clay films on faces of peds; few prominent black (10YR 2/1) coatings; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation and common medium distinct gray (10YR 5/1) iron depletions in the matrix; 25 percent rock fragments; very strongly acid; clear wavy boundary.

C—52 to 68 inches; brown (10YR 4/3) very channery silty clay loam; massive; firm; few prominent black (10YR 2/1) coatings; many medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 45 percent rock fragments; very strongly acid; clear wavy boundary.

R—68 inches; gray siltstone and fine grained sandstone.

The thickness of the solum ranges from 30 to 60 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 15 percent of the surface layer and subsoil, and from 0 to 60 percent in the BC horizon and substratum. Reaction ranges from extremely acid to strongly acid throughout the profile.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 to 4. The texture of the fine earth fraction is silt loam or silty clay loam.

The BE horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is silt loam, silty clay or silty clay loam in the fine earth fraction.

The Bt horizon has hue of 10YR to 2.5Y, value of 4 or 5, and chroma of 3 to 6. It has distinct or prominent high and low chroma redoximorphic features. The texture is silt loam, silty clay loam, or silty clay in the fine earth fraction. Structure is prismatic or weak to strong angular or subangular blocky. Consistence is friable or firm.

The Btg horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 or 2. It has distinct or prominent high and low chroma redoximorphic features. The texture is silty clay loam, silty clay or clay in the fine earth fraction. Structure is prismatic, or weak to strong angular or subangular blocky. Consistence is friable or firm.

The BC horizon has colors and textures similar to the C horizon. Structure is prismatic, or weak to strong angular or subangular blocky. Consistence is firm.

The C horizon has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 1 to 4. The texture is silty clay loam, silty clay or clay in the fine earth fraction. The material is massive, or has plate-like divisions. Consistence is firm.

Ceres Series

The Ceres series consists of deep, well drained, gently sloping to very steep soils that formed in material weathered from red shale, siltstone, and sandstone. These soils are in areas of hilltops and side slopes where the topography is influenced by the underlying bedrock at elevations above 1,800 feet. Slopes range from 3 to 50 percent.

Ceres soils are associated with Carrollton, Mandy, Eldred, Kinzua, Elko, Flatiron and Onoville soils. They are redder in color and deeper over bedrock than Carrollton and Mandy soils. They are better drained than the brownish-colored Eldred, Elko, and Onoville soils, and lack the fragipan typical of Elko and Onoville soils. Ceres soils are redder in color and have a higher content of clay than the Flatiron soils. Kinzua soils lack the red colors typical of Ceres soils and are also deeper to bedrock.

Typical pedon of Ceres channery silt loam, 15 to 25 percent slopes; in the town of Portville; 2,000 feet northwest of the intersection of Sherry Hill Road and Butternut Brook Road, and 10 feet west of Sherry Hill Road:

A—0 to 3 inches, very dark brown (7.5YR 2/2) channery silt loam, brown (7.5YR 5/2) dry; moderate fine granular structure; very friable; many fine and few medium roots; 20 percent rock fragments; extremely acid; clear smooth boundary.

BA—3 to 7 inches, reddish brown (2.5YR 4/4) channery silt loam; strong fine granular structure; very friable; many fine and common medium roots; 15 percent rock fragments; very strongly acid; clear smooth boundary.

Bt1—7 to 12 inches; dusky red (10R 3/4) channery silt loam; moderate medium subangular blocky structure; very friable; common fine and few medium roots; few distinct weak red (10R 4/2) clay films on faces of peds; 15 percent rock fragments; very strongly acid; gradual wavy boundary.

Bt2—12 to 22 inches, weak red (10R 4/4) channery silt loam; moderate medium subangular blocky structure; friable; common fine roots; few distinct weak red (10R 4/2) clay films on faces of peds; 30 percent rock fragments; very strongly acid; gradual wavy boundary.

Bt3—22 to 29 inches, weak red (10R 4/4) very channery silty clay loam; weak thin platy structure parting to moderate fine angular blocky; friable; few fine roots; few faint weak red (10R 5/3) clay films on faces of peds and on rock fragments; 40 percent rock fragments; very strongly acid; gradual wavy boundary.

C—29 to 44 inches, weak red (10R 4/4) extremely channery silt loam; massive; firm; 75 percent rock fragments; moderately acid; clear wavy boundary.

R—44 inches, dusky red (10R 3/2) interbedded shale and siltstone bedrock.

The thickness of the solum ranges from 24 to 48 inches. The depth to bedrock is 40 to 60 inches. The content of rock fragments ranges, by volume, from 5 to 25 percent in the surface and BA horizon, from 10 to 40 percent in the Bt horizon, and from 60 to 90 percent in the substratum. Reaction ranges from neutral to extremely acid in the solum, and from moderately acid to very strongly acid in the substratum.

The A horizon has hue of 2.5YR to 7.5YR, value and chroma of 2 to 4. The texture of the fine earth fraction is silt loam, loam or fine sandy loam.

The BA horizon has hue of 10R to 5YR, value of 3 to 5, and chroma of 4 to 6. The texture is silt loam in the fine earth fraction. Structure is weak to strong, fine or medium granular, or subangular blocky. Consistence is friable or very friable.

The Bt horizon has hue of 10R to 5YR, value of 3 to 5, and chroma of 4 to 6. The texture is silt loam, loam, silty clay loam, or clay loam in the fine earth fraction. Structure is weak or moderate, fine or medium angular or subangular blocky. Consistence is friable or firm.

The C horizon has hue of 10R to 5YR, value of 3 or 4, and chroma of 4 to 6. The texture is silt loam, loam, or silty clay loam in the fine earth fraction. The material is massive, or has plate-like divisions.

Chadakoin Series

The Chadakoin series consists of very deep, well drained, gently sloping to very steep soils on glaciated uplands. These soils formed in glacial till derived from sandstone, siltstone and shale. They are on upland till plains, hilltops and valley sides. Slopes range from 3 to 50 percent.

Chadakoin soils are in a drainage sequence that includes the moderately well drained Chautauqua soils, the somewhat poorly drained Busti soils, and the poorly drained Ashville soils. They are associated on the landscape with Langford, Valois, Schuyler, Towerville and Chenango soils. Chadakoin soils do not have the fragipan typical of Langford soils. They have less clay than Schuyler and Towerville soils, and have less gravel in the subsoil than Valois and Chenango soils. Valois and Chenango soils are on stream terraces and on the lower lying moraines in valleys.

Typical pedon of Chadakoin channery silt loam, 25 to 35 percent slopes; in the town of Mansfield; adjacent to Boyce Hill Road about 0.5 miles west of junction with Hencoop Rd:

A—0 to 4 inches; dark grayish brown (10YR 4/2) channery silt loam; moderate fine granular structure; very friable; many fine roots; 15 percent rock fragments; strongly acid; clear wavy boundary.

A/B—4 to 9 inches; brown (10YR 4/3) channery silt loam; weak medium granular structure; very friable; many fine and medium roots; 15 percent rock fragments; very strongly acid; clear wavy boundary.

Bw1—9 to 27 inches; brown (7.5YR 5/4) channery silt loam; weak fine subangular blocky structure; very friable; common fine roots; many pores; 15 percent rock fragments; very strongly acid; clear smooth boundary.

Bw2—27 to 33 inches; dark yellowish brown (10YR 4/4) channery silt loam; moderate medium subangular blocky structure; friable; common fine roots; few fine faint strong brown (7.5YR 5/6) masses of iron accumulation; 20 percent rock fragments; strongly acid; gradual smooth boundary.

C1—33 to 54 inches; brown (10YR 5/3) channery loam; massive; friable; many pores; 25 percent rock fragments; strongly acid; gradual smooth boundary.

C2—54 to 72 inches; grayish brown (10YR 5/2) very channery loam; massive; friable; many pores; 40 percent rock fragments, content increasing with depth; strongly acid.

The thickness of the solum ranges from 30 to 50 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 30 percent in the upper part of the solum, from 15 to 35 percent in the lower part of the solum, and from 20 to 40 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the solum, and from strongly acid to slightly acid in the substratum.

The Ap horizon has 10YR hue, value of 3 or 4, and chroma of 2 to 4. The texture is silt loam or loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam, loam or fine sandy loam in the fine earth fraction. Structure is weak or moderate, fine to coarse subangular blocky or granular. Consistence is very friable or friable.

The C horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture of the fine earth fraction is sandy loam, silt loam or loam. The material is massive or has plate like divisions. Consistence is friable or firm.

Chautauqua Series

The Chautauqua series consists of very deep, moderately well drained, gently sloping to moderately steep soils on glaciated uplands. These soils formed in glacial till derived mainly from siltstone, fine grained sandstone and smaller amounts of shale. They are on till plains, hilltops and valley side slopes. Slopes range from 3 to 25 percent.

Chautauqua soils are in a drainage sequence that includes the well drained Chadakoin soils, the somewhat poorly drained Busti soils, and the poorly drained Ashville soils. They are associated on the landscape with Langford, Mardin, Schuyler, and Towerville soils. They do not have the fragipan that is typical of Langford and Mardin soils. They have less clay than Schuyler and Towerville soils, and are deeper over bedrock than Towerville soils.

Typical pedon of Chautauqua silt loam, 3 to 8 percent slopes; in the town of Conewango; 1,500 feet east of New York State Route 241 and Benson Road, and 200 feet north of Benson Road.

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; friable; many fine roots; 10 percent rock fragments; moderately acid; abrupt smooth boundary.

Bw1—9 to 21 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; friable; common fine roots; many brown (10YR 4/3) worm and root channels; 10 percent rock fragments; moderately acid; clear wavy boundary.

Bw2—21 to 29 inches; brown (10YR 5/3) gravelly silt loam; moderate medium subangular blocky structure; firm; few fine roots; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation and faint grayish brown (10YR 5/2) iron depletions; 15 percent rock fragments; slightly acid; clear wavy boundary.

Bw3—29 to 36 inches; brown (10YR 4/3) gravelly loam; weak medium subangular blocky structure; firm; few roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation, and faint dark grayish brown (10YR 4/2) iron depletions; 20 percent rock fragments; slightly acid; clear wavy boundary.

C1—36 to 52 inches; brown (10YR 4/3) gravelly loam; massive; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation, and grayish brown (10YR 5/2) iron depletions; 20 percent rock fragments; slightly acid; clear wavy boundary.

C2—52 to 72 inches; grayish brown (10YR 5/2) gravelly loam; massive; firm; 20 percent rock fragments; slightly acid.

The thickness of the solum ranges from 22 to 45 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 15 percent in the surface layer, from 5 to 30 percent in the subsoil, and from 15 to 45 percent in the substratum. Reaction is moderately acid or slightly acid in the surface layer and ranges from strongly acid to slightly acid below the surface layer.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 3 or 4, and chroma of 2 to 4. Texture is silt loam or loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. It has few or common, fine or medium, faint or distinct, low and high chroma redoximorphic features at a depth of 18 to 24 inches. The texture is silt loam or loam in the fine earth fraction, which consists of more than 60 percent silt plus very fine sand. Structure is weak or moderate, fine or medium subangular blocky. Consistence ranges from very friable to firm.

The C horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. The texture is silt loam or loam in the fine earth fraction, with more than 60 percent silt plus very fine sand. Consistence is friable or firm.

Chenango Series

The Chenango series consists of very deep, well drained, nearly level to very steep soils on glacial outwash plains. These soils formed on outwash terraces in the larger valleys and in positions on alluvial fans where post glacial side streams enter the major valleys. Slopes range from 0 to 50 percent.

Chenango soils are in a drainage sequence that includes the moderately well drained Castile soils, the somewhat poorly drained Red Hook soils, and the very poorly drained Halsey soils. Chenango soils are also associated on the landscape with Allard, Valois, Unadilla, and Tioga soils. They do not have the thick, silty mantle that is typical of the Allard and Unadilla soils. Chenango soils have a well sorted, gravelly substratum in contrast to the random sorted substratum that is typical of

Valois soils. Chenango soils have a higher content of gravel than Tioga soils and are not subject to flooding.

Typical pedon of Chenango gravelly silt loam, 3 to 8 percent slopes; in the town of Freedom; near a gravel pit north of New York Route 98 near the junction with Galen Hill Road:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) gravelly silt loam; weak fine granular structure; very friable; many fine roots; 20 percent rock fragments; moderately acid; abrupt smooth boundary.

Bw1—9 to 17 inches; yellowish brown (10YR 5/4) gravelly silt loam; weak fine and medium subangular blocky structure; friable; common fine roots; many pores; 20 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—17 to 25 inches; yellowish brown (10YR 5/6) very gravelly silt loam; weak fine subangular blocky structure; very friable; few fine roots; many pores; 35 percent rock fragments; strongly acid; clear wavy boundary.

Bw3—25 to 30 inches; dark yellowish brown (10YR 4/4) very gravelly loam; weak medium granular structure; very friable; 40 percent rock fragments; moderately acid; abrupt wavy boundary.

BC—30 to 35 inches; brown (10YR 4/3) very gravelly coarse sandy loam; weak fine subangular blocky structure; very friable; 50 percent rock fragments; moderately acid; abrupt wavy boundary.

2C—35 to 72 inches; grayish brown (10YR 5/2) stratified very gravelly sand; single grain; loose; 55 percent rock fragments; moderately acid.

The thickness of the solum ranges from 24 to 50 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 10 to 50 percent in the surface layer, from 15 to 60 percent in the subsoil and from 30 to 70 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the surface layer and subsoil and from strongly acid to slightly alkaline in the substratum.

The Ap horizon has a hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 or 3. The texture of the fine earth fraction is sandy loam, loam, or silt loam or the gravelly, very gravelly, channery, or very channery analogs of those textures.

The Bw horizon has hue of 7.5YR to 2.5Y, values of 4 to 6, and chroma of 3 to 6. The texture of the fine earth fraction is fine sandy loam, loam, very fine sandy loam, or silt loam or the gravelly, very gravelly, channery, or very channery analogs of those textures. Structure is weak, granular or subangular blocky. Consistence ranges from very friable to firm.

The BC horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. Texture in the fine earth fracture is fine sandy loam, sandy loam, loam, very fine sandy loam or silt loam and average less than 50 percent fine sand and coarse sand. It has weak or very weak subangular blocky structure, or the material is massive. It ranges from very friable to firm.

The 2C horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture ranges from very gravelly loamy fine sand to coarse sand or stratified sand and gravel. It is massive or single grain (fig. 18).

Chippewa Series

The Chippewa series consists of very deep, poorly drained, nearly level soils on glaciated uplands. These soils formed in compact glacial till deposits derived from underlying siltstone, shale and smaller amounts of sandstone. Slopes range from 0 to 3 percent.

Chippewa soils are in a drainage sequence that includes the moderately well drained Mardin soils, and the somewhat poorly drained Volusia soils. They are

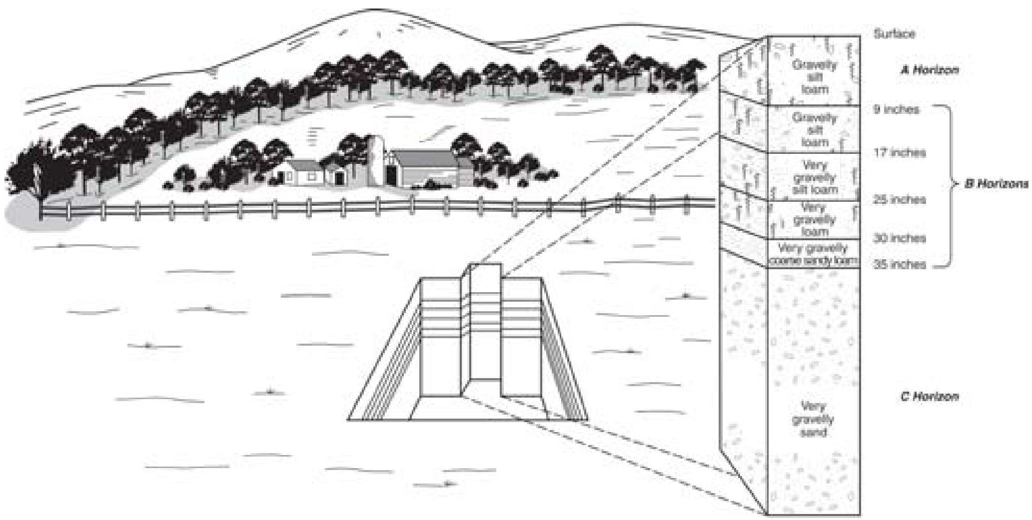

Figure 18.—A typical landscape setting for Chenango gravelly silt loam, 0 to 3 percent slopes. The exaggerated schematic represents the soil layers.

associated on the landscape with well drained Valois soils, moderately well drained Schuyler and Chautauqua soils, somewhat poorly drained Fremont and Erie soils, and very poorly drained Alden soils. They are slightly better drained than the Alden soil, and generally receive less runoff from the adjacent soils. Schuyler, Fremont, and Erie soils have textures similar to those of the Chippewa soils but are better drained. Chippewa soils have a higher content of clay than Valois and Chautauqua soils.

Typical pedon of Chippewa silt loam, 0 to 3 percent slopes; in the town of Lyndon; site located on the north side of Porter Road, 1/4 mile east of junction of Center and Porter Roads.

A—0 to 6 inches; very dark gray (10YR 3/1) silt loam, gray (10YR 6/1) dry; moderate medium and coarse granular structure; friable; many fine roots; 5 percent rock fragments; strongly acid; clear wavy boundary.

Eg—6 to 13 inches; gray (10YR 6/1) silt loam; weak fine and medium subangular blocky structure; wet, slightly sticky; common fine roots; common pores; common medium distinct dark yellowish brown (10YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bg—13 to 19 inches; gray (10YR 6/1) silty clay loam; moderate medium subangular blocky structure; wet, sticky; gray (5Y 6/1) silt coats on ped faces; few fine roots in upper part; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; 10 percent rock fragments; strongly acid; abrupt wavy boundary.

Bx—19 to 41 inches; dark grayish brown (10YR 4/2) channery silt loam; moderate very coarse prismatic parting to weak thick platy structure; very firm, brittle; prisms separated by gray (5Y 6/1) silt; common medium distinct olive brown (2.5Y 4/4) and common medium prominent yellowish brown (10YR 5/8) masses of iron accumulation; common medium distinct gray (10YR 5/1) iron depletions; 20 percent rock fragments: strongly acid; gradual wavy boundary.

C—41 to 72 inches; grayish brown (2.5Y 5/2) channery silt loam; massive; firm; common medium distinct olive brown (2.5Y 4/4) and few prominent strong brown (7.5YR 5/6) masses of iron accumulation; 25 percent rock fragments; moderately acid.

The thickness of the solum ranges from 30 to 56 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 35 percent above the fragipan, and from 20 to 50 percent in the fragipan and substratum. Reaction ranges from very strongly acid to slightly acid in the surface layer and subsoil above the fragipan, and from strongly acid to neutral in the fragipan, and from moderately acid to moderately alkaline in the substratum.

The A horizons have hues of 10YR and 2.5Y, values of 2 to 4, and chroma of 1 or 2. The texture is loam or silt loam in the fine earth fraction. Some pedons have a mucky modifier.

The Eg horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 0 or 1. Texture is loam, silt loam, or light silty clay loam in the fine earth fraction. Structure is weak or moderate, subangular blocky, or platy or the material is massive. Consistence is friable or firm.

The Bg horizon has hue of 10YR to 5Y, value of 3 to 6 and chroma of 1 or 2. Texture of the fine earth fraction is loam, silt loam, clay loam, or light silty clay loam. Structure is very weak to moderate, fine to coarse subangular blocky or granular. Consistence is friable or firm.

The Bx horizon has hues of 10YR to 5Y, value of 3 to 6, and chroma of 1 or 2. Textures range from silty clay loam to fine sandy loam in the fine earth fraction. It has weak to strong, very coarse prismatic structure parting to weak or moderate subangular blocky or platy, or the material within the prisms is massive. Consistence ranges from firm to extremely firm and are brittle.

The C horizon is similar to the Bx horizon in color and texture. The material is massive, or has weak or moderate plate-like divisions. Consistence is firm or very firm.

Churchville Series

The Churchville series consists of very deep, somewhat poorly drained, nearly level to gently sloping soils on till plains. These soils formed in thin deposits of fine-textured glacial lake sediments underlain by glacial till. Slopes range from 0 to 8 percent.

Churchville soils are associated with Darien, Fremont, Rhinebeck, Niagara, and Canadice soils. They are better drained than Canadice soils and have thinner deposits of clayey sediments than the Rhinebeck soils. They have more clay in the subsoil than Niagara, Darien, and Fremont soils. Also Darien and Fremont soils formed in glacial till and are not overlain by a clayey mantle.

Typical pedon of Churchville silt loam, 3 to 8 percent slopes; in the town of East Otto; 1/4 mile south of Utley Road and Meyers Road, 100 feet east of Utley Road:

Ap—0 to 8 inches, very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments; slightly acid; abrupt smooth boundary.

Eg—8 to 14 inches, grayish brown (10YR 5/2) silt loam, weak medium subangular blocky structure; friable; common fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; common medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; less than 2 percent rock fragments; slightly acid; clear smooth boundary.

Bt1—14 to 22 inches, yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; common distinct grayish brown (10YR 5/2) clay films in pores and on ped faces; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; common medium distinct light gray (10YR 7/1) iron depletions in the matrix; neutral; clear wavy boundary.

Bt2—22 to 37 inches, brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; grayish brown (2.5Y 5/2) clay films on ped faces and in pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; common medium distinct light gray (10YR 6/1) iron depletions in the matrix; less than 2 percent rock fragments; neutral; clear smooth boundary.

2C1—37 to 55 inches, brown (10YR 4/3) gravelly silt loam; massive; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; common medium distinct light gray (10YR 6/1) iron depletions in the matrix; 15 percent rock fragments; neutral; clear wavy boundary.

2C2—55 to 72 inches, brown (10YR 4/3) gravelly silt loam; massive; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; common medium distinct light gray (10YR 6/1) iron depletions in the matrix; 25 percent rock fragments; moderately alkaline; slightly effervescent.

The thickness of the solum and the depth to the 2C horizon range from 20 to 36 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 10 percent in the solum, and from 10 to 35 percent in the substratum. Reaction is moderately acid to neutral in the surface layer and subsurface layer, slightly acid to slightly alkaline in the subsoil, and slightly alkaline to moderately alkaline in the substratum.

The Ap horizon has hue 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3. Texture of the fine earth fraction is silt loam or silty clay loam.

The E horizon has hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 4. Texture of the fine earth fraction is silt loam, fine sandy loam or silty clay loam. Consistence is friable or firm.

The Bt horizon has hue of 5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. It has both high and low chroma redoximorphic features. Texture of the fine earth fraction is clay loam, silty clay loam, or silty clay. Structure is moderate or strong, medium to coarse blocky.

The 2C horizon has colors similar to the Bt horizon. Texture is loam, silt loam, or silty clay loam in the fine earth fraction. Consistence is firm or very firm.

Collamer Series

The Collamer series consists of very deep, moderately well drained, gently sloping to strongly sloping, soils on glacial lake plains. These soils formed in silty, lake-laid deposits. Slopes range from 3 to 15 percent.

Collamer soils are in a drainage sequence that includes the somewhat poorly drained Niagara soils and poorly drained and very poorly drained Canandaigua soils. They are in positions on the landscape similar to those of Rhinebeck, Colonie, Elnora, Tonawanda and Scio soils. They have a higher content of clay than Scio soils, are better drained than Tonawanda soils, and have a lower content of clay than Rhinebeck soils. Collamer soils also have more clay in the subsoil than the sandy Colonie and Elnora soils.

Typical pedon of Collamer silt loam, 8 to 15 percent slopes; in the town of Persia, 1/2 mile south of Van Etten Road and New York Route 62, 1/4 mile east of Van Etten Road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; weak fine subangular blocky structure; friable; many fine roots; moderately acid; abrupt smooth boundary.

E/B—6 to 18 inches; pale brown (10YR 6/3) silt loam; weak fine subangular blocky structure; friable; ped centers of yellowish brown (10YR 5/4) B material; common fine roots; moderately acid; clear wavy boundary.

B/E—18 to 24 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; friable; pale brown (10YR 6/3) E material on ped faces; common fine roots; moderately acid; clear wavy boundary.

Bt1—24 to 31 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; distinct clay flows on surfaces along pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions; moderately acid; clear wavy boundary.

Bt2—31 to 45 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; distinct clay flows on surfaces along pores and on all faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions; slightly acid; clear smooth boundary.

C—45 to 72 inches; brown (10YR 4/3) silt loam with thin lenses of silt; massive; firm; moderately alkaline; strongly effervescent.

The thickness of the solum ranges from 24 to 48 inches. The depth to bedrock is more than 60 inches. The depth to carbonates ranges from 20 to 72 inches. Rock fragments commonly do not occur in the profile, but in some pedons they make up as much as 5 percent of the profile. Reaction ranges from strongly acid to neutral in the Ap, E/B, and B/E horizons, from moderately acid to slightly alkaline in the Bt horizon, and from slightly acid to moderately alkaline in the C horizon.

The Ap has a hue of 10YR or 7.5YR, values of 3 to 5, and chroma of 2 or 3. The texture is fine sandy loam, very fine sandy loam, or silt loam.

The E horizon, if it occurs, has hue of 5YR to 2.5Y, value of 5 or 6, and chroma of 2 to 4. The texture is fine sandy loam or silt loam. The horizon has weak, platy or subangular blocky structure. Consistence ranges from very friable to firm.

The E/B and B/E horizons have properties on ped exteriors that are similar to those of the E horizon. Ped interiors have hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 or 4. The texture is silt loam or loam; however, the loam occurs only in the E part of the horizon. Structure is weak or moderate, subangular blocky. Consistence is friable or very friable.

The Bt horizon has hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 3 or 4. It is silt loam or silty clay loam. It has few to many, faint to distinct redoximorphic features. Structure is weak or moderate, subangular blocky, angular blocky or prismatic. Consistence is friable or firm.

The C horizon has hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4. The texture ranges from silty clay loam to very fine sand or stratified silt and very fine sand.

Colonie Series

The Colonie series consists of very deep, well drained, nearly level to strongly sloping soils that formed in lake-laid or windblown deposits dominated by fine sands. These soils are on remnant beaches, sandbars, deltas of glacial lakes, or on windblown dunes. Slopes range from 0 to 15 percent.

Colonie soils are in a drainage sequence that includes the moderately well drained Elnora soils, the somewhat poorly drained Minoa soils, and the poorly drained Lamson soils. They are in positions on the landscape similar to those of Chenango, Niagara, and Collamer soils. They do not have the fine-silty subsoil that is typical of Niagara and Collamer soils, and they do not have the rock fragment content that is characteristic of Chenango soils.

Typical pedon of Colonie fine sandy loam, 0 to 3 percent slopes; in the town of Olean; 400 feet south of East River Road, 1.5 miles east of New York Route 16 and East River Road in a sand and gravel pit:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) fine sandy loam; weak medium granular structure; very friable; many fine roots; slightly acid; abrupt smooth boundary.

E1—9 to 16 inches; strong brown (7.5YR 5/6) loamy fine sand; weak fine subangular blocky structure; very friable; common fine roots; slightly acid; clear smooth boundary.

E2—16 to 32 inches; brown (7.5YR 5/4) loamy fine sand; weak fine granular structure; very friable; few fine roots; moderately acid; clear wavy boundary.

E and Bt—32 to 47 inches; dark yellowish brown (10YR 4/4) loamy fine sand; weak fine granular structure; very friable; Bt material consists of few 1/4 to 2 inch brown (10YR 4/3) fine sandy loam lamellae and oval pockets up to 3 inches thick; silt and some clay bridging; strongly acid; clear wavy boundary.

C1—47 to 51 inches; brown (7.5YR 4/4) loamy fine sand; massive; loose; 5 percent rock fragments; moderately acid; clear wavy boundary.

C2—51 to 72 inches; brown (7.5YR 4/4) fine sand; massive; loose; moderately acid.

The thickness of the solum ranges from 40 to 75 inches. The depth to bedrock is more than 6 feet. Rock fragments commonly do not occur in the profile, but in some pedons they make up as much as 5 percent of the profile. Reaction ranges from very strongly acid to slightly acid within the solum and from moderately acid to neutral in the substratum.

The Ap has hues of 10YR or 7.5YR, values of 3 to 5, and chroma of 2 or 3. The texture is fine sand, loamy fine sand, or very fine sandy loam.

The E horizon has hue of 5YR to 2.5Y, values of 4 to 6, and chroma of 3 to 8. The texture is loamy fine sand or fine sand. The material is massive, or has fine or very fine granular structure. Consistence is loose or very friable.

The E and Bt horizon has hue of 5YR to 2.5Y, values of 4 tho 6, and chroma of 3 to 6. The texture is loamy fine sand or fine sand. The material is massive, or fine or very fine granular structure. Consistence is loose or very friable. The horizon contains lamellae 1/4 inch to 3 inches thick and is friable to firm at a depth of 14 to 24 inches.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 4. The texture is fine sand or loamy fine sand. The material is massive or single grained. Consistence is loose or very friable.

Dalton Series

The Dalton series consists of very deep, somewhat poorly drained, nearly level to gently sloping soils that formed in a silty mantle overlying firm glacial till. These soils are on the lower slopes of valleys and on till plains. Slopes range from 0 to 8 percent.

Dalton soils are in a drainage sequence that includes the moderately well drained Canaseraga soils. They are associated on the landscape with Busti, Fremont, Erie and Tonawanda soils. They have a fragipan that is not present in Busti and Fremont soils. They have a mantle of silty material that is not present in Erie soils. They have rock fragments in the lower subsoil and substratum which are not present in Tonawanda soils.

Typical pedon of Dalton silt loam, 0 to 3 percent slopes; in the town of Farmersville; along County Route 21 about 0.3 mile east of Laidlaw Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Eg—9 to 17 inches; light brownish gray (2.5Y 6/2) silt loam; weak medium platy structure; friable; common fine roots; common pores; many medium prominent strong brown (7.5YR 5/8) and distinct olive brown (2.5Y 4/4) masses of iron accumulation; strongly acid; abrupt wavy boundary.

Bx1—17 to 29 inches; olive brown (2.5Y 4/3) silt loam; strong very coarse prismatic structure; prisms separated by gray (10YR 6/1) silt; firm, brittle; few roots on prism faces; few pores; common fine distinct grayish brown (10YR 5/2) iron depletions and brown (7.5YR 4/4) masses of iron accumulation; 5 percent rock fragments, consisting mainly of gravel; moderately acid; clear smooth boundary.

2Bx2—29 to 50 inches; brown (10YR 4/3) gravelly silt loam; moderate very coarse prismatic structure; prisms separated by gray (10YR 6/1) silt; firm, brittle; few pores; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; common fine distinct gray (10YR 5/1) iron depletions; 25 percent rock fragments; moderately acid; gradual wavy boundary.

2C—50 to 72 inches; grayish brown (10YR 5/2) gravelly loam; weak very thick plate-like divisions; firm; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; 20 percent rock fragments; slightly acid.

The thickness of the solum ranges from 40 to 60 inches. The depth to bedrock is more than 60 inches. The thickness of the silty mantle ranges from 15 to 36 inches. The depth to the top of the fragipan ranges from 12 to 22 inches. The content of rock fragments, consisting mainly of channers and gravel, ranges by volume, from 0 to 5 percent in the silt mantle, and from 15 to 40 percent in the 2Bx and 2C horizons. Reaction ranges from very strongly acid to moderately acid in the surface layer and subsurface layer, from strongly acid to moderately acid in the Bx horizon, from moderately acid to neutral in the 2Bx horizon, and slightly acid to neutral in the 2C horizon.

The Ap horizon has a hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 3. The texture is silt loam or very fine sandy loam.

The Eg horizon has hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 1 to 3. The texture is silt loam or very fine sandy loam. Structure is weak, fine to medium, platy or subangular blocky. This horizon has common to many, medium and coarse, distinct or prominent, high and low chroma redoximorphic features. Consistence ranges from very friable to firm.

The Bx horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 1 to 3. The texture is silt loam or very fine sandy loam. Structure is strong coarse prismatic or the material is massive. Consistence is firm or very firm.

The 2Bx horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 2 or 3. The texture in the fine earth fraction is silt loam or loam. Structure is moderate or strong, very coarse prismatic, or the material is massive. Consistence is firm or very firm.

The 2C horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 2 to 4. The texture in the fine earth fraction is silt loam or loam. The material is massive, or has weak to moderate plate-like divisions. Consistence is firm to very firm.

Darien Series

The Darien series consists of very deep, somewhat poorly drained, nearly level to strongly sloping soils, mainly on till plains and in some valleys. These soils formed in glacial till derived mainly from soft shale. Slopes range from 0 to 15 percent.

Darien soils are associated with Fremont, Busti, Volusia, Erie, and Orpark soils. They have a higher content of clay than the Busti soils and are deeper over bedrock than Orpark soils. They have a layer of accumulated clay in the subsoil that is not present in Fremont and Volusia soils. They do not have the fragipan that is typical of Volusia and Erie soils.

Typical pedon of Darien silt loam, 8 to 15 percent slopes; in the Town of East Otto; on the south side of Meyers Road, near loop with Fowler Rd.

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam; light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments; slightly acid; abrupt smooth boundary.

E—7 to 14 inches; pale olive (5Y 6/3) silt loam; weak fine subangular blocky structure; friable; many fine roots; many fine pores; many medium distinct light brownish gray (2.5Y 6/2) iron depletions and olive brown (2.5Y 4/4) masses of iron accumulation; 5 percent rock fragments; slightly acid; clear wavy boundary.

Btg—14 to 23 inches; dark grayish brown (2.5Y 4/2) silt loam; moderate medium subangular blocky structure; firm; common fine roots; clay films in many pores and gray (2.5Y 5/1) silt coats on some vertical ped faces; common medium distinct light olive brown (2.5Y 5/6) masses of iron accumulation; 10 percent rock fragments; slightly acid; gradual wavy boundary.

Bt—23 to 38 inches; olive brown (2.5Y 4/4) silty clay loam; moderate medium and coarse subangular blocky structure; firm; few fine roots; few to common pores; gray (10YR 5/1) clay films on all faces of peds and on surfaces along pores; common medium distinct light brownish gray (2.5Y 6/2) iron depletions; 10 percent rock fragments; neutral; clear wavy boundary.

C—38 to 72 inches; grayish brown (10YR 5/2) gravelly silt loam; weak thick plate-like divisions; firm; plastic; few pores; gray (5Y 5/1) thin silt and clay films; common brown distinct(10YR 4/3) and (10YR 5/3) masses of iron accumulation; 15 percent rock fragments; strongly effervescent, moderately alkaline.

The thickness of the solum ranges from 30 to 45 inches. The depth to bedrock is more than 60 inches. The depth to carbonates ranges from 25 to 48 inches. The content of rock fragments ranges, by volume, from 2 to 35 percent in the surface layer, subsurface layer, and subsoil, and from 10 to 60 percent in the substratum. Reaction ranges from strongly acid to neutral in the surface layer, subsurface and subsoil, and from slightly acid to moderately alkaline in the C horizon.

The Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 to 4. The texture in the fine earth fraction is loam, silt loam or silty clay loam.

The E horizon has hue of 10YR to 5Y, value of 5 or 6, and chroma of 1 to 3. The texture is silt loam, loam or silty clay loam in the fine earth fraction. Structure is weak subangular blocky or platy. Consistence is friable or firm.

The Bt horizon has hue of 10YR to 5Y, value of 3 to 5, and chroma of 2 to 4. The texture is silt loam, silty clay loam or clay loam in the fine earth fraction. Structure is weak to moderate, medium or coarse subangular or angular blocky. Consistence is friable or firm.

The C horizon has color and textures similar to those of the Bt horizon. The material is massive or has plate like divisions. Consistence is firm or very firm.

Dunkirk Series

The Dunkirk series consists of very deep, well drained, moderately steep to steep soils on dissected glacial lake plains. These soils formed in lake-laid sediments dominated by silts and clays. Slopes range from 25 to 35 percent.

Dunkirk soils are in a drainage sequence that includes the moderately well drained Collamer soils, the somewhat poorly drained Niagara soils, and the poorly drained and very poorly drained Canandaigua soils. They commonly are associated with Rhinebeck, Unadilla, Colonie, and Valois soils. Dunkirk series are better drained and contain less clay than Rhinebeck soils. They contain more clay than Unadilla soils and less sand than Colonie soils. They contain fewer rock fragments than Valois soils, which formed in glacial till.

Typical pedon of Dunkirk silt loam, 15 to 25 percent slopes; in town of Persia; 2 miles south of Peter Road and Broadway Road, 1/3 mile west of Peter Road, road bank of logging road:

Ap—0 to 4 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; friable; many fine roots; moderately acid; abrupt smooth boundary.

EB—4 to 14 inches; yellowish brown (10YR 5/4) silt loam; weak fine subangular blocky structure; friable; common fine roots; slightly acid; clear wavy boundary.

B/E—14 to 26 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; friable; common fine roots; yellowish brown (10YR 5/4) material on peds; light brownish gray (10YR 6/2) iron depletions; moderately acid; clear smooth boundary.

Bt1—26 to 34 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common thin clay films on all faces of peds and on surfaces along pores; slightly acid; clear wavy boundary.

Bt2—34 to 48 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; friable; few thin clay films on all faces of peds and on surfaces along pores; common medium distinct yellowish brown (10YR 5/6) masses of accumulations and grayish brown (10YR 5/2) iron depletions; neutral; clear smooth boundary.

C1—48 to 54 inches; brown (10YR 4/3) silt loam; thin plate-like divisions; firm; slightly alkaline; clear wavy boundary.

C2—54 to 72 inches; brown (10YR 4/3) silt loam; massive; firm; slightly alkaline.

The thickness of the solum ranges from 20 to 48 inches. The depth to bedrock is more than 60 inches. The depth to carbonates is 20 to 54 inches. Rock fragments commonly are not present in the profile, but in some pedons they make up as much as 5 percent of the profile. Reaction ranges from strongly acid to slightly acid in the surface layer, from strongly acid to neutral in the subsurface layer, from moderately acid to slightly alkaline in the subsoil, and from slightly acid to moderately alkaline in the substratum.

The Ap or A horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. The texture is silt loam, fine sandy loam, or very fine sandy loam.

The EB horizon has hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 3 to 5. The texture is silt loam, very fine sandy loam or fine sandy loam. Structure is weak or moderate, fine or medium, subangular blocky. Consistence is very friable or friable.

The B portion of the B/E horizon has colors and textures similar to the underlying Bt horizon, while the E portion of the horizon has colors and textures similar to the overlying EB horizon.

The Bt horizon has hue of 5YR through 2.5Y, value of 3 through 5, and chroma of 2 through 4. The texture is silt loam, silty clay loam, or very fine sandy loam. Structure is weak to strong, medium or coarse, angular or subangular blocky. Consistence is friable or firm.

The C horizon has colors similar to those of the Bt horizon. The texture is silt loam, very fine sand, silt or silty clay loam. The horizon is massive or varved. Consistence is friable or firm.

Eldred Series

The Eldred series consists of very deep, moderately well drained, gently sloping to moderately steep soils on foot slopes, side slopes, and benches of the unglaciated plateau. These soils formed in residuum from interbedded shale, siltstone, and fine grained sandstone, at elevations above 1,800 feet. Slopes range from 3 to 25 percent.

Eldred soils are closely associated with well drained Carrollton, Ceres, and Kinzua soils, moderately well drained Onoville soils, and somewhat poorly drained Ivory and Shongo soils. Eldred soils are deeper to bedrock than Carrollton and Ceres soils, and they lack the fragipan layer that is typical of Onoville and Shongo soils. Kinzua soils are better drained, and Ivory soils have a higher clay content than the Eldred soils.

Typical pedon of Eldred silt loam, 3 to 8 percent slope; in the town of Humphrey; 600 feet south of Fire Lane Road and Chapman Road, 50 feet west of Chapman Road:

A—0 to 3 inch, very dark gray, (10YR 3/1) silt loam; moderate fine granular structure; friable; many fine roots; 10 percent rock fragments; strongly acid; clear smooth boundary.

Bw1—3 to 9 inches, brown (10YR 5/3) silt loam; weak fine subangular blocky structure; friable; common fine roots; 10 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—9 to 14 inches, pale brown (10YR 6/3) silty clay loam; weak medium subangular blocky structure; friable; common fine roots; few medium distinct brownish yellow (10YR 6/6) masses of iron accumulation in the matrix; 10 percent rock fragments; strongly acid; clear wavy boundary.

Bt1—14 to 22 inches, yellowish brown (10YR 5/4) channery silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; few thin clay films on ped faces and in pores; common medium distinct brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 15 percent rock fragments; strongly acid; clear wavy boundary.

Bt2—22 to 42 inches, light olive brown (2.5Y 5/4) channery silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; few thin clay films on ped faces and in pores; common manganese stains; common medium prominent light brownish gray (10YR 6/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation; 25 percent rock fragments; strongly acid; abrupt wavy boundary.

C—42 to 72 inches, yellowish brown (10YR 5/4) channery silty clay loam; massive; firm; common medium distinct light brownish gray (10YR 6/2) iron depletions and yellowish brown (10YR 5/8) masses of iron accumulation; 20 percent rock fragments; strongly acid.

The thickness of the solum ranges from 34 to 60 inches. The depth to bedrock is more than 72 inches. The content of rock fragments, dominantly channers and flagstones, ranges, by volume, from 5 to 35 percent in the solum, and from 10 to 60 percent in the substratum. Reaction ranges from strongly acid to extremely acid throughout the soil.

The A horizon has a hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 1 to 4. The texture is silt loam or silty clay loam of the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is loam, silt loam, or silty clay loam of the fine earth fraction. Consistence is friable or very friable.

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 8. The texture of the fine earth fraction is silt loam, silty clay loam, or clay loam. The Bt horizon has redoximorphic depletions and concentrations within the upper 24 inches of the argillic horizon. Structure is subangular or angular blocky. Consistence is friable or firm.

The C horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is loam, silt loam, silty clay loam, and clay loam of the fine earth fraction. Structure is massive. Consistence is firm or very firm.

Elko Series

The Elko series consists of very deep, moderately well drained, gently sloping to strongly sloping soils formed in weathered residuum from interbedded siltstone, fine grained sandstone and shale. These soils are in areas of broad ridgetops, upland depressions, and upper side slopes of unglaciated plateaus above elevations of 1,800 feet. Slopes range from 3 to 15 percent.

Elko soils are associated with Carrollton, Frewsburg, Eldred, Ceres, and Flatiron soils. They are deeper over bedrock than Carrollton or Frewsburg soils, and have a fragipan that is not present in Eldred, Ceres, and Flatiron soils. They have more clay in the subsoil than Flatiron soils, and do not have the red colors typical of Ceres soils.

Typical pedon of Elko silt loam, on a 3 to 8 percent slope; in the town of Red House; in Allegany State Park; 100 feet south of Allegany State Park Route 3, and 1,500 feet southwest of junction of Allegany State Park Route 3 and Allegany State Park Route 2:

A—0 to 3 inches; very dark gray (7.5YR 3/1), gray (10YR 5/1) dry silt loam; moderate fine and medium granular structure; very friable; many fine and medium roots; 10 percent rock fragments; extremely acid; clear wavy boundary (1 to 3 inches thick).

E—3 to 6 inches; grayish brown (10YR 5/2) loam; weak fine and medium subangular blocky structure; very friable; many fine and few coarse roots; 10 percent rock fragments; extremely acid; clear wavy boundary (0 to 4 inches thick).

Bw—6 to 19 inches; strong brown (7.5YR 5/6) channery silt loam; weak fine and medium subangular blocky structure; very friable; many fine and medium roots; 15 percent rock fragments; extremely acid; clear wavy boundary (0 to 13 inches thick).

Bt—19 to 26 inches; yellowish brown (10YR 5/4) channery loam; weak fine and medium subangular blocky structure; friable; few fine roots; few thin discontinuous clay films on ped faces and in pores; common prominent strong brown (7.5YR 5/6) iron masses and common medium and coarse distinct pale brown (10YR 6/3) and light brownish gray (10YR 6/2) iron depletions; 15 percent rock fragments; extremely acid; clear wavy boundary(8 to 12 inches thick).

Btx1—26 to 42 inches; yellowish brown (10YR 5/4) channery silt loam; strong very coarse prismatic structure parting to weak medium subangular blocky structure; firm and brittle; prisms are 10 to 20 inches across with gray (10YR 6/1) faces and strong brown (7.5YR 5/8) borders, streaks are 1/2 to 1 inch wide; few fine roots along prism faces; common distinct discontinuous clay films on ped faces and in pores; common medium prominent strong brown (7.5YR 5/6) iron masses and common medium and course distinct light pale brown (10YR 6/3) and light brownish gray (10YR 6/2) iron depletions; 30 percent rock fragments; extremely acid; gradual wavy boundary.

Btx2—42 to 64 inches; brown (7.5YR 5/4) very channery loam; strong very coarse prismatic structure parting to weak medium subangular blocky structure; very firm and brittle; prisms are 10 to 20 inches across with gray (10YR 6/1) faces and strong brown (7.5YR 5/8) borders, streaks are 1/4 to 3/4 inch wide; common distinct discontinuous clay films on ped faces and in pores; common medium prominent strong brown (7.5YR 5/6) iron masses and common medium and distinct light brownish gray (10YR 6/2) iron depletions; 35 percent rock fragments; extremely acid; clear wavy boundary (combined thickness of the Btx horizon is 30 to 48 inches thick).

C—64 to 72 inches; yellowish brown (10YR 5/4) very channery loam; massive; firm; common medium prominent strong brown (7.5YR 5/8) iron masses and common medium and coarse prominent gray (10YR 6/1) iron depletions; 60 percent rock fragments; extremely acid; abrupt smooth boundary (10 to 20 inches thick).

Solum thickness ranges from 35 to 75 inches. Depth to bedrock is greater than 40 inches but commonly is within a depth of 80 inches. Rock fragments, dominantly channers and flagstones, range from 5 to 35 percent by volume in the surface layer, from 5 to 45 percent in the subsoil, and from 15 to 70 percent in the substratum. Reaction ranges from extremely acid through strongly acid throughout the soil unless limed. The A or Ap horizon has a hue of 7.5YR or 10YR, value of 3 or 4 and chroma of 1 to 4. Texture of the fine-earth fraction is silt loam, loam or sandy loam.

The E horizon, where present, has hue of 7.5YR to 2.5Y, value of 4 or 6, and chroma of 1 to 4. Texture is silt loam, loam or sandy loam in the fine-earth fraction.

Structure is weak or moderate subangular blocky or granular. Consistence is very friable or friable.

The Bw horizon, where present, has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8. Texture is silt loam, silty clay loam, or loam in the fine-earth fraction. Structure is weak or moderate subangular blocky or granular. Consistence is very friable or friable

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 6, with low and high chroma redoximorphic features in the upper 10 inches of the horizon. Texture includes silt loam, loam, silty clay loam, and subhorizons of silty clay in the fine-earth fraction. Structure is subangular blocky or prismatic. Consistence is friable or firm.

The Btx horizon has hue of 7.5YR to 5Y, value of 4 to 7 and chroma of 2 to 8. Texture is loam, silt loam, sandy loam, silty clay loam or clay loam in the fine-earth fraction. Structure is prismatic and/or blocky. Some subhorizons have weak platy structure. Consistence is firm or very firm. Some pedons have a BC horizon that has color similar to the Btx horizon and texture similar to the C horizon. Structure is prismatic or platy, or the material is massive. Consistence is firm or very firm.

The C, CB or BC horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 6. Texture of the fine-earth fraction is loam, silt loam, sandy loam, silty clay loam and clay loam. Consistence is friable or firm. A Cr horizon is present in some pedons.

Elnora Series

The Elnora Series consists of very deep, moderately well drained, nearly level to gently sloping soils that formed in lake-laid or windblown deposits of fine sand. These soils are on remnant sandbars and beaches of glacial lake plains. Slopes range from 0 to 8 percent.

Elnora soils are in a drainage sequence that includes the well drained Colonie soils, somewhat poorly drained Minoa soils, and poorly drained Lamson soils. Elnora soils are in landscape positions similar to those of Castile, Scio, Niagara, and Collamer soils. They are coarser textured than Scio soils, contain less clay than Collamer and Niagara soils, and contain fewer rock fragments than Castile soils.

Typical pedon of Elnora fine sandy loam, 0 to 3 percent slopes; in the town of Leon; 3 miles southeast of South Dayton, 1/2 mile south of Xura Road and Chicken Road, 50 feet west of Chicken Road:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak medium granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

Bw1—7 to 16 inches; strong brown (7.5YR 5/6) loamy fine sand; weak fine granular structure; friable; common fine roots; slightly acid; clear wavy boundary.

Bw2—16 to 27 inches; yellowish brown (10YR 5/4) loamy fine sand; weak fine granular structure; friable; common fine roots; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; slightly acid; clear wavy boundary.

C1—27 to 30 inches; brown (10YR 5/3) fine sand; massive; loose; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; 10 percent rock fragments; moderately acid; clear wavy boundary.

C2—30 to 72 inches; grayish brown (10YR 5/2) fine sand; massive; loose; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; 2 percent rock fragments; moderately acid.

The thickness of the solum ranges from 6 to 52 inches. The depth to contrasting material is greater than 72 inches. The depth to bedrock is greater than 60 inches. The content of rock fragments commonly ranges from 0 to 5 percent throughout the profile, but in the substratum, it may be as much as 15 percent. Reaction ranges from extremely acid to slightly acid in the surface layer and subsoil, and from strongly acid to neutral in the substratum.

The Ap horizon has hue of 10YR or 2.5YR, value of 3 to 5, and chroma of 2 or 3. The texture is loamy fine sand or fine sandy loam.

The Bw horizon has hue of 5YR to 5Y, value of 4 to 6, and chroma of 3 to 8. The texture is loamy fine sand or fine sand. Structure is weak fine granular, subangular blocky or platy. Consistence is very friable or friable.

The C horizon has hue of 5YR to 5Y, value of 3 to 5, and chroma of 1 to 4. The texture is loamy fine sand or fine sand. This horizon is massive or single grained. Consistence is loose to friable.

Erie Series

The Erie series consists of very deep, somewhat poorly drained, nearly level to strongly sloping soils on till plains and on the upland plateaus. These soils formed in glacial till derived mainly from siltstone or sandstone, and from shale and limestone. Slopes range from 0 to 15 percent.

The Erie soils are in a drainage sequence that includes the moderately well drained Langford soils. They are associated with Fremont, Darien, Busti, and Ashville soils. They are better drained than the poorly drained Ashville soils. They have a finer textured subsoil than the Busti soils. Fremont, Darien and Busti soils do not have a fragipan.

Typical pedon of Erie channery silt loam, 3 to 8 percent slopes; in the town of Freedom; on east side of Galen Hill Road, just south of Cross Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) channery silt loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; friable; many fine roots; 15 percent rock fragments; slightly acid; abrupt smooth boundary.

Eg—9 to 14 inches; light brownish gray (10YR 6/2) silt loam; weak fine subangular blocky structure; friable; common fine roots; common pores; many medium distinct brown (7.5YR 5/4) and yellowish brown (10YR 5/6) masses of iron accumulation; 10 percent rock fragments; moderately acid; abrupt wavy boundary.

Bx1—14 to 28 inches; brown (10YR 4/3) channery silt loam; moderate coarse prismatic parting to weak medium subangular blocky structure; firm, brittle; few pores; few clay films on vertical faces of peds; prisms separated by vertical seams of gray (10YR 6/1) silt; many medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; many medium distinct light brownish gray (2.5Y 6/2) iron depletions; 15 percent rock fragments; slightly acid; clear wavy boundary.

Bx2—28 to 45 inches; dark grayish brown (2.5Y 4/2) channery silt loam; weak, very coarse prismatic structure; firm, brittle; few pores; few clay films in pockets of silty clay loam material; prisms separated by seams of gray (5Y 6/1) silt; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; 20 percent rock fragments; neutral; clear wavy boundary.

C—45 to 72 inches; grayish brown (2.5Y 5/2) channery silt loam; massive; firm; few fine distinct yellowish brown (10YR 5/6) masses of iron accumulation; 25 percent rock fragments; moderately effervescent; moderately alkaline.

The thickness of the solum ranges from 32 to 58 inches. The depth to bedrock is more than 60 inches. The depth to carbonates ranges from 35 to 65 inches. The depth to the top of the fragipan ranges from 10 to 21 inches. The content of rock fragments (mostly channers) ranges, by volume, from 5 to 35 percent above the fragipan, and from 15 to 60 percent in the fragipan and substratum. The reaction ranges from strongly acid to slightly acid in the surface and subsurface horizons, from moderately acid to slightly alkaline in the fragipan, and from slightly acid to moderately alkaline in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, chroma of 2 or 3. The texture is silt loam or loam in the fine earth fraction.

The Eg horizon has hue of 7.5YR to 5Y, value of 5 or 6, and chroma of 2 or 3. The texture is loam, silt loam or silty clay loam in the fine earth fraction. It has subangular blocky or platy structure. Consistence is friable or firm.

The Bx horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 4. The texture is loam, silt loam, or silty clay loam in the fine earth fraction. Consistence is firm or very firm, and the material is brittle.

The C horizon has hue of 7.5YR to 5Y, values of 3 to 5, and chroma of 2 to 4. The texture is loam, silt loam or silty clay loam in the fine earth fraction. The material is massive or has plate like divisions. Consistence is firm or very firm.

Flatiron Series

The Flatiron series consists of very deep, well drained, gently sloping to steep soils formed in weathered residuum from sandstone and sandstone conglomerate. These soils are in areas of broad ridgetops and upper hillsides of the unglaciated plateau above elevations of 2,000 feet. Slopes range from 3 to 35 percent.

Flatiron soils are associated with Carrollton, Mandy, Knapp Creek, Eldred, Ceres and Elko soils. They are deeper over bedrock, and contain less clay in the subsoil than Carrollton or Mandy soils. They lack the fragipan layer that is present in Elko soils. They have a higher sand content than Eldred or Ceres soils, and do not have the red colors that are typical of Ceres soils. They do not have the high gravel content that is typical of Knapp Creek soils.

Typical pedon of Flatiron loamy fine sand, 15 to 25 percent slopes, extremely bouldery; in the town of Olean; 1,400 feet north of Two Mile Road and New York Route 16, 1,800 feet southeast of New York Route 16:

Oe—0 to 1 inch; black (10YR 2/1) partially decomposed leaves; abrupt smooth boundary.

E—1 to 2 inches; pinkish gray (7/5YR 7/2) loamy fine sand; single grain, loose; many fine roots; 10 percent rock fragments of subrounded quartz pebbles; very strongly acid; abrupt smooth boundary.

Bw1—2 to 25 inches; brown (7.5YR 5/4) gravelly fine sandy loam; weak coarse subangular blocky structure; very friable; many fine and coarse roots; 15 percent rock fragments of subrounded quartz pebbles; very strongly acid; gradual wavy boundary.

Bw2—25 to 36 inches; strong brown (7.5YR 5/6) gravelly loamy fine sand; weak coarse subangular blocky structure; very friable; common medium and coarse roots; 30 percent rock fragments of subrounded quartz pebbles and 2 percent sandstone rock fragments; very strongly acid; abrupt smooth boundary.

C1—36 to 47 inches; light yellowish brown (10YR 6/4) very gravelly sandy loam; massive; firm; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulations; light gray (10YR 7/2) silt faces along rock fragments; 50 percent rock fragments mostly subrounded quartz pebbles; very strongly acid; clear wavy boundary.

C2—47 to 60 inches; strong brown (7.5YR 5/6) silty clay loam; massive; firm; light gray (10YR 7/2) faces on rock fragments; common black (10YR 2/1) manganese stains; 10 percent rock fragments (shale); very strongly acid; clear wavy boundary.

C3—60 to 72 inches; pale brown (10 YR 6/3) gravelly loam; massive; firm; 20 percent rock fragments of quartz pebbles and sandstone; very strongly acid.

The thickness of the solum ranges from 26 to 60 inches. The depth to bedrock is more than 60 inches. The content of rock fragments, dominantly subrounded quartz and sandstone, ranges, by volume, from 5 to 35 percent in individual horizons of the solum, and from 10 to 60 percent in the substratum. Boulders, stones, and channers cover about 5 to 60 percent of the surface in some areas. Reaction ranges from strongly acid to extremely acid throughout the profile.

The O horizon consists of partially decomposed leaves.

The A horizon, where present, has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 1 to 4. The texture of the fine earth fraction is loamy sand, sandy loam, fine sandy loam or loam, or the gravelly analogs of those textures.

The E horizon has hue of 5YR to 10YR, value of 4 to 7, and chroma of 1 to 4. The texture in the fine earth fraction is loamy sand, loamy fine sand, sandy loam, fine sandy loam, and loam or the gravelly analogs of those textures. Structure is weak, fine or medium granular or it is single grain. Consistence is very friable, friable or loose.

The Bw horizon has hue of 5YR to 10YR, value of 3 to 6, and chroma of 3 to 8. The texture in the fine earth fraction is loamy sand, loamy fine sand, sandy loam, fine sandy loam, and loam or the gravelly analogs of those textures. Structure is weak or moderate, fine to coarse subangular blocky or granular. Consistence is very friable or friable.

The C horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 8. The textures in the fine earth fraction ranges from loamy sand to loam, with subhorizons of silty clay loam. Structure is weak subangular blocky, single grain or the material is massive. Consistence is friable or firm.

Fluvaquents

Fluvaquents consist of deep and very deep, somewhat poorly drained to very poorly drained soils that formed in recent alluvial deposits. These soils show little or no profile development. They are adjacent to secondary streams and are subject to frequent flooding. Slopes range from 0 to 3 percent but are mainly less than 2 percent.

Fluvaquents are mapped with Udifluvents. They are near Middlebury, Holderton, Wakeland, Teel, and Wayland soils. They are in positions on the landscape where an adjacent stream frequently shifts the soil deposits from place to place by scouring, cutting and lateral erosion.

Because of the variability of Fluvaquents, a typical pedon is not provided. The solum of these soils generally consists of an A horizon 0 to 12 inches thick. The depth to bedrock ranges from 40 to more than 60 inches. The content of rock fragments consisting of gravel, cobblestones, and flagstones ranges, by volume, from 0 to 70 percent. These soils are very strongly acid to moderately alkaline. The content of organic matter decreases irregularly as depth increases.

The A horizon dominantly has hue of 5YR to 2.5Y, value of 2 or 3, and chroma of 0 to 2. The texture is quite variable. Texture is loamy sand to silty clay loam or the gravelly or very gravelly analogs of the textures within that range. In some areas the surface is stony.

The C horizon has hue of 5YR to 5Y or is neutral in hue. It has value of 3 to 6, and chroma of 0 to 5. It is loamy sand to silty clay or the gravelly, cobbly, or very gravelly analogs of the textures within that range. Some pedons have redoximorphic features. Consistence is friable to loose.

Franklinville Series

The Franklinville series consists of very deep, well drained, gently sloping to steep, soils on glaciated uplands. These soils formed in glacial till derived from sandstone, siltstone and shale. They are on upland till plains, hilltops and valley sides above elevations of 1,800 feet. Slopes range from 3 to 35 percent.

They are associated on the landscape with Yorkshire, Salamanca, Ischua, Willdin, and Valois soils. Franklinville soils do not have the fragipan typical of Yorkshire and Willdin soils. They have less clay than Salamanca or Ischua soils and have less gravel in the subsoil than Valois soils. Valois soils are dominantly on landscapes at lower elevations.

Typical pedon of Franklinville channery silt loam, 8 to 15 percent slopes; in the town of Lyndon; at the intersection of Sabo Road and North Center Road:

A—0 to 3 inches; very dark gray (10YR 3/1) channery silt loam; weak fine granular structure; very friable; many fine roots; 15 percent rock fragments; strongly acid; clear smooth boundary.

Bw1—3 to 14 inches; strong brown (7.5YR 5/4) channery silt loam; weak medium subangular blocky structure; very friable; few fine roots; 15 percent rock fragments; strongly acid; gradual wavy boundary.

Bw2—14 to 32 inches; yellowish brown (10YR 5/4) channery silt loam; moderate medium and fine subangular blocky structure; friable; few fine roots; 25 percent rock fragments; strongly acid; gradual smooth boundary.

BC—32 to 42 inches; dark yellowish brown (10YR 4/4) channery silt loam; weak medium subangular blocky structure; firm; very few roots; 30 percent rock fragments; strongly acid; clear wavy boundary.

C—42 to 72 inches; brown (10YR 4/3) very channery silt loam; massive; firm; 45 percent rock fragments; strongly acid.

The thickness of the solum ranges from 30 to 50 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 30 percent in the upper part of the solum, from 15 to 35 percent in the lower part of the solum, and from 20 to 60 percent in the substratum. Reaction ranges from strongly acid to moderately acid in the solum, and from very strongly acid to slightly acid in the substratum.

The A horizon has hue of 10YR or 7.5YR hue, value of 3 or 4, and chroma of 1 to 4. The texture of the fine earth fraction is silt loam or loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam, loam or fine sandy loam in the fine earth fraction. Structure is weak or moderate, fine to coarse subangular blocky or granular. Consistence is very friable or friable.

The BC horizon, has hue, value, and chroma similar to the B horizon. The texture in the fine earth fraction is fine sandy loam, silt loam, or loam. Structure is weak fine or medium subangular blocky or platy. Consistence is friable or firm.

The C horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture of the fine earth fraction is sandy loam, fine sandy loam, silt loam or loam. The material is massive or has plate like divisions. Consistence is friable or firm.

Fremont Series

The Fremont series consists of very deep, somewhat poorly drained, nearly level to strongly sloping soils on uplands. These soils formed in glacial till deposits derived from shale, siltstone and sandstone. They are on broad hilltops of upland till plains. Slopes range from 0 to 15 percent.

The Fremont soils are in a drainage sequence that includes the moderately well drained Schuyler soils, and the poorly drained Ashville soils. They are associated with Erie, Volusia, Hornell, and Orpark soils. Fremont soils do not have the fragipan that is typical of Erie and Volusia soils. They contain less clay than the Hornell soils. They do not have bedrock within a depth of 40 inches, which is typical of Hornell and Orpark soils.

Typical pedon of Fremont silt loam, 3 to 8 percent slopes; in the town of Farmersville; 0.3 miles northwest of junction of Pigeon Hill Road and Cutting Road:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; many fine roots; 10 percent rock fragments; slightly acid (limed); abrupt smooth boundary.

Bw1—9 to 16 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common medium pores; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation; gray (N6/0) iron depletions in the matrix; 10 percent rock fragments; moderately acid; clear smooth boundary.

Bw2—16 to 28 inches; olive brown (2.5Y 4/4) silty clay loam; weak medium subangular blocky within weak coarse prismatic structure; firm; few fine roots in upper part; common fine pores; peds coated with light brownish gray (2.5Y 6/2) silt; many medium prominent yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; many medium prominent gray (N6/0) iron depletions within the matrix; 10 percent rock fragments; strongly acid; clear wavy boundary.

BC—28 to 39 inches; olive brown (2.5Y 4/4) channery silty clay loam; weak coarse prismatic structure; firm; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation within the matrix and gray (5Y 5/1) iron depletions within the matrix; 15 percent rock fragments; strongly acid; clear wavy boundary.

C—39 to 72 inches; dark grayish brown (2.5Y 4/2) channery silt loam; weak thin plate-like divisions; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within the matrix and gray (5Y 5/1) iron depletions within the matrix; 20 percent rock fragments; strongly acid.

The thickness of the solum ranges from 24 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 10 to 35 percent in the solum and from 20 to 60 percent in the substratum. Reaction ranges from very strongly acid to moderately acid above a depth of 40 inches and from strongly acid to neutral at depths below 40 inches.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. The texture is silt loam or silty clay loam in the fine earth fraction.

The Bw horizon has hue of 10YR to 5Y, values of 4 to 6, and chroma of 2 to 4. The texture is silt loam or silty clay loam in the fine earth fraction. Redoximorphic features are common to many, medium and distinct. Structure is weak, medium or coarse prismatic parting to weak or moderate, fine to strong subangular blocky. Consistence is friable or firm.

The BC horizon has colors and textures similar to those of the Bw horizon. Structure is weak, medium, or coarse prismatic, and in some pedons, parting to weak fine to coarse subangular blocky.

The C horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 to 4. Texture is silt loam or silty clay loam. The material is massive, or has plate-like divisions. Consistence is firm.

Frewsburg Series

The Frewsburg series consists of moderately deep, somewhat poorly drained, gently sloping to strongly sloping soils that formed in weathered residuum of interbedded shale, siltstone, and sandstone. Bedrock is at a depth of 20 to 40 inches. These soils are on hilltops and benches, above elevations of 1,800 feet, where the topography is influenced by the underlying bedrock. Slopes range from 3 to 15 percent.

Frewsburg soils are in a drainage sequence that includes the well drained Carrollton soils, and are associated with Mandy, Eldred, Ivory, Kinzua and Onoville soils. Frewsburg soils are wetter than the moderately deep Mandy soils, and are wetter and shallower over bedrock than the Kinzua, Eldred, and Onoville soils. They contain less clay than the Ivory soils and lack a fragipan that is typical of Onoville soils.

Typical pedon of Frewsburg silt loam, 3 to 8 percent slopes; in the town of Napoli; 200 feet northwest of radio tower, south of Sawmill Road and Briggs Road:

A—0 to 1 inches; very dark grayish brown (10YR 3/2) silt loam; weak very fine granular structure; very friable; many fine and few coarse roots; 10 percent rock fragments; very strongly acid; clear wavy boundary.

BE—1 to 6 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky parting to fine granular structure; friable; many fine and few medium and coarse roots; brown (10YR 4/3) ped faces; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bt—6 to 18 inches; yellowish brown (10YR 5/4) channery silty clay loam; weak coarse prismatic parting to strong coarse and medium angular blocky structure; friable; common fine and few medium roots; brown (10YR 5/3) ped faces in upper part and grayish brown (2.5Y 5/2) ped faces in lower part; common fine clay films on all faces of peds and few thick clay films on surfaces along pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation, and common medium distinct gray (10YR 5/1) iron depletions in the matrix; 15 percent rock fragments of which 5 percent is soft shale; very strongly acid; gradual irregular boundary.

C—18 to 38 inches; olive gray (5Y 5/2) channery silty clay loam; moderate thin plate-like divisions; firm; common medium distinct yellowish red (5YR 4/6), and yellowish brown (10YR 5/6) masses of iron accumulations; 25 percent soft rock fragments grading to 70 percent decomposed shale in lower part; very strongly acid; gradual wavy boundary.

R—38 inches; dark yellowish brown (10YR 4/4), dark grayish brown (2.5Y 4/2), and strong brown (7.5YR 4/6) shale bedrock.

The thickness of the solum and depth to bedrock range from 20 to 40 inches. The content of rock fragments, mainly shale, siltstone and sandstone, ranges, by volume, from 5 to 35 percent in the solum, and from 15 to 70 percent in the substratum. Reaction is very strongly acid or strongly acid throughout the profile.

The A horizon has a hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 4. The texture is silt loam or loam in the fine earth fraction.

The BE horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 6. The texture of the fine earth fraction is silt loam or loam. Structure is fine or medium angular or subangular blocky. Consistence is friable or firm.

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 8. The texture is silt loam, loam, silty clay loam and clay loam in the fine earth fraction. Structure is angular or subangular blocky, or prismatic. Consistence is friable or firm.

The C horizon, if it occurs, has colors and textures similar to those of the Bt horizon. The material is massive, or has plate-like divisions. Consistence is friable or firm.

Getzville Series

The Getzville series consists of very deep, nearly level, poorly drained soils on glacial lake plains. These soils formed in glacial lake-laid sediments and old alluvial deposits of silt or very fine sand, underlain by water-sorted deposits of sand or gravel at depths of 15 to 36 inches. They are on broad valley flats once dominated by former glacial lakes. Slopes are less than 3 percent.

The Getzville soils are in a drainage sequence that includes the somewhat poorly drained Swormville and the moderately well drained Olean soils. They are associated with Tonawanda, Minoa, Canadice, Canandaigua, and Lamson soils. They are less well drained than Minoa soils, and they do not have the deep, sandy deposits typical of Minoa soils. They have a higher content of clay in the subsoil than Tonawanda soils and have more sand in the substratum than Canandaigua soils. They have less clay in the subsoil than Canadice soils and do not have the sand content in the subsoil that is typical of Lamson soils.

Typical pedon of Getzville silt loam; in the town of Dayton; 2 miles east of South Dayton; 1/2 mile north of the junction of New York Route 62 and County Route 3; 50 feet west of New York Route 62:

Ap—0 to 9 inches; very dark gray (10YR 3/1) silt loam; moderate medium and fine granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.

Bg1—9 to 16 inches; light brownish gray (10YR 6/2) silt loam; moderate fine and medium subangular blocky structure; friable; few fine roots; common medium distinct yellowish brown (10YR 5/6) and yellowish red (5YR 5/6) and common coarse prominent reddish brown (5YR 5/4) masses of iron accumulation; slightly acid; clear wavy boundary.

Bg2—16 to 24 inches; light brownish gray (10YR 6/2) silty clay loam; moderate medium subangular blocky structure; friable; many medium distinct yellowish brown (10YR 5/6) and common medium prominent reddish brown (5YR 5/4) masses of iron accumulation; moderately acid; clear smooth boundary.

2C1—24 to 50 inches; gray (10YR 5/1) fine sand; massive; loose; neutral; clear wavy boundary.

2C2—50 to 72 inches; gray (10YR 5/1) fine and medium sand; massive; loose; slightly alkaline; slightly effervescent.

The thickness of the solum ranges from 20 to 40 inches. Depth to bedrock is more than 60 inches. Depth to the underlying sandy material ranges from 15 to 36 inches. The content of rock fragments ranges, by volume, from 0 to 5 percent in the surface layer and subsoil, and ranges from 0 to 40 percent in the substratum. Reaction is strongly acid to neutral in the surface layer, moderately acid to neutral in the subsoil, and neutral to slightly alkaline in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 to 3. The texture is silt loam or silty clay loam.

The Bg horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 or less. It has common to many high chroma redoximorphic features. Texture is silt loam or silty clay loam. Structure is weak or moderate, medium or coarse prismatic parting to moderate or strong, medium or coarse subangular blocky or angular blocky. Consistence is friable or firm.

The 2C horizon has hue of 5YR to 5Y, value of 3 to 5, and chroma of 1 to 4. The texture ranges from sand to loamy fine sand in the fine earth fraction.

Gilpin Series

The Gilpin series consists of moderately deep, well drained, gently sloping to very steep soils that formed in material weathered from interbedded shale, siltstone and sandstone. Bedrock is at a depth of 20 to 40 inches. The soils are on hilltops, side slopes, and benches where the topography is influenced by the underlying bedrock. Slopes range from 3 to 50 percent.

The Gilpin soils are on associated landscapes with Rayne, Buchanan, Portville, Ceres, and Eldred soils are. Gilpin soils have bedrock at a depth of 20 to 40 inches, but Rayne, Ceres, and Eldred soils have bedrock at a depth of more than 40 inches, also Ceres and Eldred soils occupy higher elevations. The Gilpin soils do not have the fragipan that is typical of the very deep Buchanan and Portville soils.

Typical pedon of Gilpin channery silt loam, 25 to 35 percent slopes; in the town of Olean; 1,500 yards south of East River Road and Indiana Ave, 200 feet east of Indiana Ave:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) channery silt loam; moderate fine granular structure; very friable; many fine and coarse roots; common medium pores; 15 percent rock fragments; very strongly acid; clear smooth boundary.

Bt1—4 to 16 inches; yellowish brown (10YR 5/6) channery silt loam; weak medium subangular blocky structure; friable; common medium and coarse roots; few fine pores; few thin clay films on all faces of peds; 30 percent rock fragments; very strongly acid; clear wavy boundary.

Bt2—16 to 26 inches; yellowish brown (10YR 5/4) channery silty clay loam; moderate medium subangular blocky structure; firm; common fine and few medium roots; many very fine pores; common thin clay films on all faces of peds and on surfaces along pores; few medium manganese stains on ped faces; 30 percent rock fragments; very strongly acid; clear irregular boundary.

C—26 to 35 inches; strong brown (7.5YR 5/6) and grayish brown (10YR 5/2) very channery silt loam and silty clay loam interspersed between thinly-bedded siltstone and sandstone (1/4 to 1/2 inch thick) and highly weathered bedrock; weak medium plate-like divisions; firm; few roots; 40 percent rock fragments; very strongly acid; abrupt smooth boundary.

R—35 inches; thinly bedded siltstone and sandstone bedrock

The thickness of the solum ranges from 18 to 36 inches. The bedrock is at a depth of 20 to 40 inches. The content of rock fragments, mainly channers and flagstones ranges, by volume, from 5 to 40 percent in the solum, and from 30 to 90 percent in the substratum. Reaction is extremely acid to strongly acid throughout the profile.

The A horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 to 3. The texture is silt loam or loam in the fine-earth fraction.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 4 to 8. The texture is silt loam, loam, silty clay loam, or clay loam in the fine earth fraction. Structure is weak or moderate, angular or subangular blocky. Consistence is friable or firm.

The C horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 6. The texture is silt loam, loam, or silty clay loam in the fine earth fraction. In some pedons this horizon may have redoximorphic features. Consistence is friable or firm. The horizon is massive or has plate like divisions.

The R horizon is horizontal bedded siltstone, shale or fine grained sandstone bedrock.

Gretor Series

The Gretor series consists of moderately deep, somewhat poorly drained, gently sloping to strongly sloping soils on upland plateaus, summits and benches at elevations above 1,800 feet. Bedrock, consisting mainly of siltstone and sandstone, is at a depth of 20 to 40 inches. These soils formed in a thin mantle of glacial till where the topography is influenced by the underlying bedrock. Slopes range from 3 to 15 percent.

The Gretor soils are in a drainage sequence that includes the well drained Mongaup soils. They are in landscape positions similar to those of Almond, Napoli and Hornellsville soils. They are not as deep over bedrock as Almond and Napoli soils. They have less clay in the subsoil than Hornellsville soils.

Typical pedon of Gretor channery silt loam, 3 to 8 percent slope; in the town of East Otto; 6,200 feet west of Crumb Hill Road, and 400 feet south of Meyer Hill Road:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) channery silt loam; moderate medium granular structure; friable; many fine roots; 25 percent rock fragments; strongly acid; abrupt smooth boundary.

Bw—8 to 13 inches; brown (10YR 5/3) channery silt loam; weak medium subangular blocky structure; friable; many fine roots; 25 percent rock fragments; strongly acid; clear wavy boundary.

Bg1—13 to 21 inches; light brownish gray (2.5Y 6/2) channery silt loam; moderate coarse subangular blocky structure; firm; few fine roots; common fine pores; common coarse distinct and many fine distinct light olive brown (2.5Y 5/4) and prominent yellowish brown (10YR 5/8) masses of iron accumulation within the matrix; 30 percent rock fragments; strongly acid; clear wavy boundary.

Bg2—21 to 25 inches; light olive gray (5Y 6/2) channery silty clay loam; weak coarse subangular blocky structure; firm; few fine pores; common coarse prominent yellowish red (5YR 5/8) masses of iron accumulation within the matrix; 25 percent rock fragments; moderately acid; abrupt smooth boundary.

R—25 inches; fine-grained sandstone.

The thickness of the solum and depth to bedrock ranges from 20 to 40 inches. The content of rock fragments, consisting mainly of siltstone or fine-grained sandstone, ranges, by volume, from 5 to 35 percent throughout the profile. Reaction ranges from very strongly acid to moderately acid in the surface layer and subsoil, and from strongly acid to slightly acid in the substratum.

The Ap horizon has a hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 to 4. The texture in the fine earth fraction is loam, silt loam or silty clay loam.

The Bw or Bg horizon has hue of 5YR to 5Y, value of 3 to 6, and chroma of 0 to 6. The texture is silt loam, silty clay loam, clay loam, or loam in the fine earth fraction. Structure is weak or moderate, fine to coarse subangular blocky or angular blocky. Consistence is friable or firm.

The C horizon, where present, has hue of 5YR to 5Y, value of 4 or 5, and chroma of 2 to 4. Texture is silt loam, clay loam, or loam in the fine earth fraction. It has plate like divisions or the material is massive. Consistence is friable or firm.

Halsey Series

The Halsey series consists of very deep, very poorly drained nearly level soils on outwash plains and valley terraces. These soils formed in water-sorted gravelly and sandy material derived from shale, sandstone and siltstone. Slopes range from 0 to 3 percent.

The Halsey soils are in a drainage sequence that includes the well drained Chenango soils, the moderately well drained Castile soils, and the somewhat poorly drained Red Hook soils. Halsey soils are on landscape positions similar to those of Alden, Canandaigua and Wayland soils. They have less clay and a higher rock fragment content throughout the profile than Alden or Canandaigua soils. They do not have the high silt content that is typical of Wayland soils.

Typical pedon of Halsey silt loam, 0 to 3 percent slopes; in the town of Farmersville; 900 feet east of County Route 21 and County Route 80, 600 feet north of County Route 21:

Ap—0 to 6 inches; very dark gray (10YR 3/1), grayish brown (10YR 5/2) dry, silt loam; moderate medium granular structure; friable; 10 percent rock fragments; slightly acid; abrupt smooth boundary.

Bg1—6 to 21 inches; gray (10YR 5/1) gravelly silt loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 15 percent rock fragments; slightly acid; clear wavy boundary.

Bg2—21 to 34 inches; gray (10YR 5/1) gravelly loam; moderate medium granular structure; very friable; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 20 percent rock fragments; neutral; clear wavy boundary.

2C1—34 to 48 inches; dark grayish brown (10YR 4/2) very gravelly loamy fine sand; massive; loose; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 45 percent rock fragments; neutral; clear wavy boundary.

2C2—48 to 72 inches; dark grayish brown (10YR 4/2) stratified sand and gravel; single grain, loose; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 30 percent rock fragments; slightly effervescent.

The thickness of the solum ranges from 20 to 39 inches. The depth to carbonates ranges from 30 to 60 inches. The depth to bedrock is more than 60 inches. The content of rock fragments range, by volume, from 0 to 35 percent in the solum, and from 0 to 60 percent in the substratum. Reaction ranges from moderately acid to neutral in the solum, and slightly acid to moderately alkaline in the substratum.

The Ap horizon has a hue of 10YR or 2.5Y, value of 2 or 3, and chroma of 0 to 2. The texture is fine sandy loam, silt loam, or loam or the mucky analogs of those textures.

The Bg horizon has hue of 10YR to 5Y or is neutral in hue. It has value of 4 to 6, and chroma of 2 or less. The texture is loam, silt loam or fine sandy loam in the fine earth fraction. Structure is weak or moderate granular, platy or subangular blocky. This horizon has common or many, medium or coarse, distinct redoximorphic features. Consistence is very friable to firm.

The 2C horizons have a hue of 10YR to 5Y, value of 3 to 6, and chroma of 2 or less. The texture is mainly loamy fine sand to sand or consists of stratified, loose or firmly packed gravel and sand.

Hamlin Series

The Hamlin series consists of very deep, well drained, nearly level soils in the highest parts on floodplains. These soils formed in recent alluvial deposits. Slopes range from 0 to 3 percent.

Hamlin soils are in a drainage sequence that includes the moderately well drained Teel soils, the somewhat poorly drained Wakeville soils and poorly drained Wayland soils. They are associated with Chenango, Scio and Allard soils. Hamlin soils formed in recent alluvial deposits. Scio and Allard soils formed in silty lacustrine sediments, or older alluvium in higher positions on nearby terraces. Hamlin soils do not have the contrasting gravelly underlying deposits that are typical of Allard soils, and they do not have the gravel content throughout that is typical of Chenango soils.

Typical pedon of Hamlin silt loam; in town of Otto; 100 feet south of Cattaraugus Creek, and 300 feet west of North Otto Road:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine and medium granular structure; very friable; many fine roots; neutral; clear smooth boundary.

Bw1—10 to 17 inches; brown (10YR 4/3) very fine sandy loam; weak fine subangular blocky structure; very friable; many fine roots; neutral; clear smooth boundary.

Bw2—17 to 36 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; few roots; neutral; clear wavy boundary.

C1—36 to 48 inches; dark grayish brown (10YR 4/2) very fine sandy loam; massive; very friable; neutral; clear wavy boundary.

C2—48 to 72 inches; dark grayish brown (10YR 4/2) silt loam; massive; friable; slightly alkaline; slightly effervescent.

The thickness of the solum ranges from 24 to 48 inches. The depth to bedrock is more than 60 inches. The depth to carbonates or to contrasting material is more than 40 inches. The content of rock fragments commonly is less than 5 percent throughout the profile. Reaction ranges from strongly acid to neutral in the upper 20 inches and from moderately acid to slightly alkaline below this depth.

The Ap horizon has hues of 5YR to 10YR, value of 3 or 4, and chroma of 1 to 3. The texture is silt loam or very fine sandy loam.

The Bw horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 4. The texture is silt loam or very fine sandy loam. Structure is weak or moderate, fine or medium granular, subangular blocky or prismatic. Consistence is very friable or friable.

The C horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 2 to 4. The texture is silt loam, very fine sandy loam or fine sandy loam. The material is massive or has plate-like divisions.

Hartleton Series

The Hartleton series consists of deep, well drained moderately steep to very steep soils, that formed in residuum weathered from interbedded shale, siltstone and fine-grained sandstone. These soils are on side slopes and benches of the unglaciated plateau. Slopes range from 25 to 50 percent.

Hartleton soils are associated with Buchanan, Cavode, Gilpin, Portville, and Rayne soils. Hartleton series are deeper to bedrock than Gilpin soils. Hartleton soils are better drained and lack the fragipan that is typical of Buchanan and Portville soils. Hartleton soils contain less clay in the subsoil than Cavode soils, and contain more rock fragments in the solum than the deeper Rayne soils.

Typical pedon of Hartleton channery silt loam; 25 to 35 percent slopes; in the town of Olean; 1,000 feet west of County Route 29, along the NY and PA state line:

A—0 to 3 inches; dark grayish brown (10YR 4/2) channery silt loam; weak fine granular structure; friable; many fine roots; 15 percent rock fragments; strongly acid; abrupt smooth boundary.

BE—3 to 10 inches; yellowish brown (10YR 5/4) channery silt loam; moderate medium subangular blocky structure; friable; common fine roots; 15 percent rock fragments; strongly acid; clear wavy boundary.

Bt1—10 to 19 inches; brown (10YR 5/3) channery silt loam; moderate medium subangular blocky structure; friable; common fine roots; few clay films on all faces of peds; 30 percent rock fragments; strongly acid; clear wavy boundary.

Bt2—19 to 32 inches; dark yellowish brown (10YR 4/4) very channery silt loam; moderate medium subangular blocky structure; friable; few fine roots; few clay films on all faces of peds; 45 percent rock fragments; strongly acid; clear wavy boundary.

BC—32 to 38 inches; brown (10YR 4/3) very channery silt loam; weak medium subangular blocky structure; friable; few clay films on all faces of peds; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation in the matrix; 45 percent rock fragments; strongly acid; clear wavy boundary.

C—38 to 58 inches; brown (10YR 4/3) extremely channery silt loam; massive; friable; 60 percent rock fragments; strongly acid; abrupt smooth boundary.

R—58 inches; interbedded siltstone, sandstone and shale bedrock.

The thickness of the solum ranges from 20 to 40 inches. The depth to bedrock ranges from 40 to 60 inches. The content of rock fragments, consisting mainly of shale, sandstone or siltstone, ranges by volume, from 15 to 40 percent in the surface layer, from 15 to 80 percent in the BE horizon, from 25 to 80 percent in individual horizons of the subsoil, and from 50 to 90 percent in the substratum. Reaction is strongly acid or very strongly acid throughout the profile.

The A horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 to 4. Texture of the fine earth fraction is silt loam or loam.

The BE horizon that has hue of 7.5YR or 10YR, value of 4 to 6, and chroma of 3 to 6. Textures of the fine earth fraction are silt loam or loam.

The Bt horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 6. Texture of the fine earth fraction ranges from loam to silty clay loam with 18 to 30 percent clay.

The BC horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 6. Textures of the fine earth fraction are silt loam, silty clay loam, or loam.

The C horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 3 to 8. Textures of the fine earth fraction are silt loam and loam.

Holderton Series

The Holderton series consists of very deep, somewhat poorly drained, nearly level soils on flood plains. These soils formed in post glacial alluvium derived mainly from areas of shale and sandstone. Slopes range from 0 to 3 percent.

Holderton soils are in a drainage sequence that includes the well drained Tioga soils, the moderately well drained Middlebury soils, and the poorly drained Wyalusing soils. They are associated with Hamlin, Teel, and Wakeville soils. They have a higher sand content than Wakeville soils and are not as well drained than Hamlin and Teel soils.

Typical pedon of Holderton silt loam; in town of Allegany; in a stream bank 250 feet north of County Route 60, 1/4 mile west of the intersection of County Route 60 and County Route 61:

Ap—0 to 6 inches; very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; slightly acid; clear smooth boundary.

Bw—6 to 14 inches; brown (10YR 4/3) fine sandy loam; weak medium subangular blocky structure; friable; slightly acid; clear wavy boundary.

Bg1—14 to 28 inches; grayish brown (10YR 5/2) fine sandy loam; weak medium subangular blocky structure; very friable; brown (7.5YR 5/4 and 10YR 4/3) masses of iron accumulation in the matrix; 5 percent rock fragments; slightly acid; clear wavy boundary.

Bg2—28 to 36 inches; grayish brown (10YR 5/2) loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/4) and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 5 percent rock fragments; slightly acid; clear wavy boundary.

C1—36 to 52 inches; dark grayish brown (10YR 4/2) gravelly loam; massive; very friable; common medium distinct yellowish brown (10YR 5/4) and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 25 percent rock fragments; neutral; abrupt wavy boundary.

C2—52 to 72 inches; dark grayish brown (10YR 4/2)very gravelly sandy loam; massive; loose; 35 percent rock fragments; neutral.

The thickness of the solum ranges from 24 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments consisting mainly of gravel ranges, by volume, from 0 to 10 percent in the surface layer, from 0 to 20 percent in the subsoil, and from 0 to 35 percent in the substratum. Reaction ranges from moderately acid to neutral in the solum, and from slightly acid to slightly alkaline in the substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 or 3. Texture is silt loam, loam, or fine sandy loam.

The B horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 1 to 4. The texture in the fine earth fraction is silt loam, loam, or fine sandy loam.

The C horizon has hue of 10YR or 2.5Y, value of 4 or 5, chroma of 1 through 6. The texture in the fine earth fraction is silt loam, loam, fine sandy loam, sandy loam or the gravelly analogs of those textures.

Hornell Series

The Hornell series consists of moderately deep, somewhat poorly drained, nearly level to very steep soils on bedrock-controlled till plains in upland. Bedrock is at a depth of 20 to 40 inches. These soils formed in acid, clayey glacial till derived from soft shale. Slopes range from 0 to 50 percent.

Hornell soils are associated with Fremont, Schuyler, Towerville, Orpark, Mardin, and Volusia soils. They have a higher content of clay than Fremont and Orpark soils, and are wetter than Schuyler and Towerville soils. They do not have a fragipan that is typical of Mardin and Volusia soils and are finer textured than these soils.

Typical pedon of Hornell silt loam, 8 to 15 percent slopes; in the town of Yorkshire; 350 feet south of Block Road and 1,800 feet east of West Town Line Road:

Ap—0 to 8 inches; dark grayish brown (2.5Y 4/2) silt loam; moderate fine and medium granular structure; friable; many fine roots; 5 percent rock fragments; strongly acid; clear smooth boundary:

Bw1—8 to 12 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—12 to 15 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium angular blocky structure within coarse prisms; firm; common fine roots; grayish brown (2.5Y 5/2) ped faces; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and common medium distinct grayish brown (2.5Y 5/2) iron depletions; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bw3—15 to 28 inches; olive brown (2.5Y 4/4) silty clay; moderate medium angular blocky structure within coarse prisms; firm; gray (5Y 6/1) ped faces; few fine roots; many medium distinct light olive gray (5Y 6/2) iron depletions; 5 percent rock fragments; strongly acid; gradual smooth boundary.

Cg—28 to 34 inches; grayish brown (2.5Y 5/2) channery silty clay loam; moderate thin plate-like divisions; firm; light olive gray (5Y 6/2) ped faces; common medium distinct light olive brown (2.5Y 5/6) masses of iron accumulation; 25 percent rock fragments; strongly acid; abrupt smooth boundary.

2R—34 inches; soft shale bedrock.

The thickness of the solum ranges from 17 to 40 inches. The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments ranges, by volume, from 0 to 35 percent in the surface layer, from 1 to 35 percent in the subsoil, and from 10 to 60 percent in the substratum. Rock fragments are dominantly channers or flagstones of shale or siltstone. Reaction ranges from extremely acid to strongly acid in the surface layer, and very strongly acid or strongly acid in the subsoil and substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 to 4. The texture is silt loam, loam, or silty clay loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 8. Faces of peds have chroma of 1 or 2. The texture is silty clay loam, silty clay, or clay in the fine-earth fraction. It has subangular blocky or angular blocky structure which is within coarse or very coarse prisms in many pedons. Consistence is friable to very firm.

The Cg horizon has colors and textures similar to those of the Bw horizon. The material is massive, or has plate-like divisions inherited from the rock structure. Consistence is firm or very firm.

The R horizon is shale or siltstone bedrock that weathers readily in the upper part, and can be easily cut with hand tools in the upper few inches.

Hornellsville Series

The Hornellsville series consists of moderately deep, somewhat poorly drained, gently sloping to moderately steep soils on bedrock-controlled till plains on the upland plateau above elevations of 1,800 feet. Bedrock is at a depth of 20 to 40 inches. These soils formed in acid, clayey glacial till derived from soft shale. Slopes range from 3 to 15 percent.

Hornellsville soils are associated with Almond, Salamanca, Ischua, Napoli, Willdin, and Rushford soils. They have a higher content of clay than Almond soils and are also wetter than Salamanca and Ischua soils. They do not have a firm fragipan that is typical of Willdin, Napoli and Rushford soils and are finer textured.

Typical pedon of Hornellsville silt loam, 8 to 15 percent; in the town of Farmersville; 0.5 miles east of Marble Road and 0.5 miles south of Lime Lake Road:

A—0 to 5 inches, dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments; strongly acid; clear smooth boundary:

Bw1—5 to 11 inches; yellowish brown (10YR 5/4) silty clay loam; moderate medium subangular blocky structure; friable; common fine roots; common fine pores; few fine distinct light brownish gray (10YR 6/2) iron depletions within the matrix; 5 percent rock fragments; very strongly acid; clear smooth boundary.

Bw2—11 to 16 inches; light olive brown (2.5Y 5/4) silty clay loam; strong medium angular blocky structure within moderate medium prisms; firm; few fine roots; few fine pores; light brownish gray (2.5Y 6/2) ped faces; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation within the matrix; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bw3—16 to 26 inches; brown (7.5YR 5/4) silty clay; strong medium angular blocky structure within prismatic structure; firm; gray (5Y 5/1) ped faces; many medium prominent gray (10YR 6/1) iron depletions within the matrix; 5 percent rock fragments; very strongly acid; clear smooth boundary.

Bw4—26 to 34 inches, yellowish brown (10YR 5/6) silty clay; moderate medium platy structure within weak coarse prisms; firm; gray (5Y 5/1) ped faces; many medium prominent gray (5Y 6/1)iron depletions within the matrix; 10 percent rock fragments (soft shale); very strongly acid; clear smooth boundary.

2R—34 inches; fine strata of gray (5Y 5/1) soft shale bedrock; easily crushed; strongly acid.

The thickness of the solum ranges from 17 to 40 inches. The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments ranges, by volume, from 0 to 5 percent in the surface layer, from 3 to 35 percent in the subsoil, and from 15 to 60 percent in the substratum. Rock fragments are dominantly channers or flagstones of shale or siltstone. Reaction ranges from extremely acid to strongly acid in the surface layer, and very strongly acid or strongly acid in the subsoil and substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 2 to 4, and chroma of 1 to 4. The texture is silt loam or silty clay loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 8. Faces of peds have chroma of 1 or 2. The texture is silty clay loam, silty clay, or clay in the fine-earth fraction. It has subangular blocky or angular blocky structure which is within medium to very coarse prisms. Consistence is firm or very firm.

The C horizon, where present, has colors and textures similar to those of the Bw horizon. The material is massive, or has plate like divisions inherited from the rock structure. Consistence is firm or very firm.

The R horizon is shale or siltstone bedrock that weathers readily in the upper part, and can be easily cut with hand tools in the upper few inches.

Hudson Series

The Hudson series consists of very deep, moderately well drained, strongly sloping to very steep soils on glacial lake plains and dissected valley side slopes. These soils formed in lake-laid sediments dominated by clays and silts. Slopes range from 8 to 50 percent.

Hudson soils are in a drainage sequence that includes the somewhat poorly drained Rhinebeck soils, and the poorly drained Canadice soils. They commonly are associated with Dunkirk, Varysburg, Collamer, Hornell, and Valois soils. They contain more clay than Dunkirk and Collamer soils. They lack the gravelly rock fragments typical of the Varysburg soils, and contain fewer rock fragments than Valois soils which formed in glacial till. Hornell soils have bedrock at a depth of 20 to 40 inches from the surface.

Typical pedon of Hudson silt loam, 8 to 15 percent slopes; in the town of East Otto; in a hay field north of Traffic Street, about 0.6 miles east of junction with Harvey Road:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine and medium granular structure; friable; many fine and few medium roots; slightly acid; abrupt smooth boundary.

E—7 to 11 inches; pale brown (10YR 6/3) silt loam; weak medium subangular blocky structure; friable; many fine roots; slightly acid; clear wavy boundary.

B/E—11 to 16 inches; dark yellowish brown (10YR 4/4) silty clay loam; strong medium subangular blocky structure; firm; common fine roots mostly along ped surfaces; peds coated with pale brown (10YR 6/3) silt; few fine faint yellowish brown (10YR 5/6) masses of iron accumulation; neutral; clear wavy boundary.

Bt1—16 to 25 inches; brown (10YR 4/3) silty clay; strong medium prismatic structure parting to strong medium angular blocky; firm; few fine roots along ped surfaces; peds coated with many dark brown (10YR 3/3) clay films on all faces of peds; common medium faint grayish brown (10YR 5/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation; neutral; clear smooth boundary.

Bt2—25 to 38 inches; dark yellowish brown (10YR 4/4) silty clay; moderate coarse prismatic structure parting to moderate medium angular blocky; firm; common brown (7.5YR 4/2) clay films on all faces of peds; common fine faint yellowish brown (10YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions; slightly alkaline; clear wavy boundary.

C—38 to 72 inches; brown (10YR 4/3 and 7.5YR 5/2) silty clay with varves of silty clay loam and silt; weak medium plate-like divisions, inherited from parent material; firm; moderately alkaline; slightly effervescent.

The thickness of the solum ranges from 20 to 60 inches. The depth to carbonates ranges from 20 to 70 inches. The depth to bedrock is more than 60 inches. The content of rock fragments, dominantly gravel, ranges, by volume, from 0 to 25 percent in the surface and subsurface layers, and from 0 to 10 percent in each horizon below. Reaction ranges from strongly acid to neutral in the surface and subsurface layers, from moderately acid to slightly alkaline in the subsoil, and from neutral to moderately alkaline in the substratum.

The Ap horizon has a hue of 7.5YR to 2.5Y, value of 2 to 5, and chroma of 2 or 3. The texture is loam, silt loam, or silty clay loam in the fine earth fraction.

The E horizon has a hue of 7.5YR to 5Y, value of 5 or 6, and chroma of 2 or 3. The texture is very fine sandy loam, loam, silt loam or silty clay loam in the fine earth fraction. The E horizon has weak or moderate subangular blocky or platy structure. Consistence ranges from very friable to firm.

The B/E horizon has colors and textures similar to that of the Bt horizon and E horizon. Redoximorphic features are few through many and faint, or they are absent.

The Bt horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 4. The horizon has both low and high chroma redoximorphic features. The textures are silty clay loam or silty clay with subhorizons ranging from silt loam to clay in the fine earth fraction. Structure is moderate or strong, medium or coarse, angular or subangular blocky, with or without medium to very coarse prisms. Consistence is firm or very firm.

The C horizon has hue of 5YR to 5Y, value of 3 to 5, and chroma of 1 to 3. The texture ranges from silt loam to clay. The material is massive, or has plate-like divisions inherited from the varved parent material. Consistence is firm or very firm.

Ischua Series

The Ischua series consists of moderately deep, moderately well drained, gently sloping to very steep soils on bedrock controlled benches, hilltops, valley sides and on other side slopes of the upland plateau above elevations of 1,800 feet. These soils formed in a thin mantle of glacial till underlain by siltstone and shale bedrock at a depth of 20 to 40 inches. Slopes range from 3 to 50 percent.

Ischua soils are in a drainage sequence that includes somewhat poorly drained Gretor soils. Ischua soils are associated with Almond, Hornellsville, Salamanca, Willdin, and Yorkshire soils. They contain less clay than Hornellsville soils and are not as deep over bedrock as Salamanca soils. They do not have the fragipan that is typical of Willdin and Yorkshire soils, and are not as deep to bedrock and are better drained than Almond soils.

Typical pedon of Ischua channery silt loam, 8 to 15 percent slopes; in the town of Ellicottville; one mile north of Horn Hill Road and New York Route 242, 100 feet north of Horn Hill Road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) channery silt loam; moderate medium granular structure; friable; many fine roots; 15 percent rock fragments; strongly acid; clear smooth boundary.

Bw1—6 to 18 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; 10 percent rock fragments; strongly acid; clear smooth boundary.

Bw2—18 to 23 inches; brown (10YR 5/3) channery silt loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct light brownish gray (10YR 6/2) iron depletions; 20 percent rock fragments; strongly acid; clear smooth boundary.

BC—23 to 28 inches; light brownish gray (2.5Y 6/2) channery silty clay loam; moderate medium subangular blocky structure; firm; common coarse prominent strong brown (7.5YR 5/6) masses of iron accumulation; 20 percent rock fragments; strongly acid; abrupt smooth boundary.

2R—28 inches; gray (10YR 5/1) and light brownish gray (10YR 6/2) siltstone and shale bedrock.

The thickness of the solum and depth to bedrock range from 20 to 40 inches. The content of rock fragments consisting mainly of channers and flagstones ranges, by volume, from 5 to 35 percent by volume in the upper part of the solum and from 10 to 60 percent in the lower part of the solum and substratum. Reaction ranges from very strongly acid to moderately acid in the surface layer and upper subsoil, and from very strongly acid to slightly acid in the lower subsoil and substratum.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 1 or 3. The texture is silt loam or loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR or 2.5Y, value of 4 or 6, and chroma of 3 or 6. Texture is silt loam, loam, or silty clay loam in the fine earth fraction. Structure is weak or moderate, fine to coarse subangular blocky. Consistence ranges from very friable to firm.

The BC horizon has hue of 5YR through 5Y, value of 4 through 6, and chroma of 1 through 6. The texture is silt loam, loam, or silty clay loam in the fine earth fraction with gravelly or channery analogs of those textures. Structure is subangular blocky or platy. Consistence is friable or firm.

The 2R horizon is shale, siltstone or sandstone that is horizontally bedded and commonly interbedded.

Ivory Series

The Ivory series consists of very deep, somewhat poorly drained, nearly level to moderately steep soils formed in weathered residuum of interbedded shale, siltstone and fine grained sandstone. These soils are on the crests of plateaus and on the summits of uplands above elevations of 1,800 feet. Slopes range from 0 to 25 percent.

Ivory soils are associated with the Carrollton and Frewsburg soils, but are deeper to bedrock and have more clay in the subsoil. They are also associated with Kinzua, Onoville, and Eldred soils but are finer textured and wetter.

Typical pedon of Ivory silt loam, 3 to 8 percent slopes; in town of Cold Spring; on Parker Hill Road at junction with access road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine subangular blocky structure; friable; many fine roots; 10 percent rock fragments, 5 percent greater than 3 inches in diameter; very strongly acid; abrupt smooth boundary.

BE—6 to 14 inches; yellowish brown (10YR 5/4) channery silt loam; moderate medium and fine subangular blocky structure; friable; common fine roots; few medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 15 percent rock fragments, of which 5 percent is greater than 3 inches in diameter; very strongly acid; gradual wavy boundary.

Bt1—14 to 24 inches; yellowish brown (10YR 5/4) channery silty clay loam; moderate medium and fine subangular blocky structure; friable; few fine roots; light brownish gray (10YR 6/2) ped faces; common clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix and light brownish gray (10YR 6/2) iron depletions in the matrix; 15 percent rock fragments, of which 5 percent is greater than 3 inches in diameter; strongly acid; clear wavy boundary.

Bt2—24 to 38 inches; brown (10YR 5/3) channery silty clay; weak coarse prismatic structure parting to moderate medium subangular blocky structure; friable; few fine roots in upper part; gray (10YR 6/1) ped faces; common clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix and gray (10YR 6/1 iron depletions in the matrix; 25 percent rock fragments, of which 10 percent is greater than 3 inches in diameter; very strongly acid; clear wavy boundary.

BC—38 to 48 inches; gray (10YR 6/1), brown (10YR 4/3), and strong brown (7.5YR 5/6) channery silty clay; weak coarse prismatic structure parting to weak medium subangular blocky structure; firm; 30 percent rock fragments, of which 10 percent is greater than 3 inches in diameter; strongly acid; clear wavy boundary.

C—48 to 72 inches; gray (10YR 6/1), brown (10YR 4/3), and strong brown (7.5YR 5/6) channery silty clay loam; massive; firm; 25 percent rock fragments, of which 5 percent is greater than 3 inches in diameter; very strongly acid.

The thickness of the solum ranges from 20 to 50 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 30 percent in the solum, and from 15 to 60 percent in the substratum. Reaction ranges from very strongly acid to moderately acid throughout the profile.

The Ap horizon has hue of 10YR or 2.5Y; value of 3 or 4, and chroma of 2 to 4. The texture is silt loam or silty clay loam in the fine earth fraction.

The BE horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is silt loam, silty clay, silty clay loam or clay in the fine earth fraction.

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 7, and chroma of 1 to 6, with distinct or prominent high and low chroma redoximorphic features. The texture is silty clay loam, silty clay or clay in the fine earth fraction. Structure is prismatic, or weak to strong angular or subangular blocky structure. Consistence is friable or firm. Some pedons have a BC horizon, with colors and textures similar to those of the Bt horizon.

The C horizon has hue of 5YR to 5Y or 5GY, value of 3 to 7, and chroma of 1 to 6. It has textures similar to those of the B horizon. It has prismatic or plate like divisions, or it is massive. Consistence is firm or very firm.

Kinzua Series

The Kinzua series consists of very deep, well drained, gently sloping to very steep soils that formed in residuum of interbedded shale, siltstone, and some fine grained sandstone. They are on upland ridgetops and hillsides of the unglaciated plateau at elevations above 1,800 feet. Slope ranges from 3 to 60 percent.

The Kinzua soils are in a drainage sequence that includes the moderately well drained Eldred soils. They are associated with Carrollton, Frewsburg, Ivory, and Onoville soils. They are deeper over bedrock than Carrollton and Frewsburg soils, and are better drained than Ivory soils. They do not have a fragipan that is typical of Onoville soils.

Typical pedon of Kinzua channery silt loam, 25 to 35 percent slopes; in the town of Olean; 4,000 feet west of County Route 29 (Barnum Road), and 1.5 miles southeast of NY 16 and County Route 29.

A—0 to 3 inches; dark grayish brown (10YR 4/2) channery silt loam, light brownish gray (10YR 6/2) dry; moderate medium and fine granular structure; friable; common fine roots; 15 percent rock fragments; strongly acid; clear smooth boundary.

BE—3 to 12 inches, yellowish brown (10YR 5/4) channery silt loam; weak fine subangular blocky structure; friable; common fine roots; 15 percent rock fragments; strongly acid; clear wavy boundary.

Bt—12 to 36 inches, yellowish brown (10YR 5/4) channery silt loam; moderate fine subangular blocky structure; friable; common fine roots; common clay films on all faces of peds and on surfaces along pores; 20 percent rock fragments; strongly acid; abrupt wavy boundary.

BC—36 to 45 inches, brown (10YR 5/3) very channery silt loam; weak thin platy structure; firm; 45 percent rock fragments; strongly acid; clear wavy boundary.

C—45 to 72 inches, olive brown (2.5Y 4/3) very channery silt loam; massive; firm; 45 percent rock fragments; strongly acid.

The thickness of the solum ranges from 34 to 60 inches. The depth to bedrock is more than 60 inches, but commonly is less than 100 inches. The content of rock fragments, consisting mainly of channery fragments and flagstones, ranges by volume, from 5 to 35 percent in the solum, and from 10 to 60 percent in the substratum. Reaction is very strongly acid or strongly acid throughout the profile.

The A horizon has a hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. The texture is silt loam or loam in the fine earth fraction.

The BE horizon has hue of 7.5YR to 2.5Y, value and chroma of 4 to 6. The texture is loam or silt loam in the fine earth fraction. Consistence is friable or very friable.

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 8. The texture of the fine earth fraction is loam, silt loam or silty clay loam. Some pedons have redoximorphic features in the lower part of the B horizon. Structure is subangular or angular blocky. Consistence is friable or firm.

The BC horizon has hue of 7.5YR to 5Y, value of 4 or 5 and chroma of 3 to 6. The textures are similar to those of the C horizon. Structure is subangular blocky or platy. Consistence ranges from friable to very firm.

The C horizon has hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 3 to 6. The texture is loam, silt loam, silty clay loam and clay loam in the fine-earth fraction. This horizon has prismatic or platy structure, or the material is massive. Consistence is firm or very firm.

Knapp Creek Series

The Knapp Creek series consists of deep, well drained, gently sloping to strongly sloping soils that formed in residuum weathered from sandstone conglomerate. These soils are in areas of broad ridgetops and summits of the unglaciated plateau above elevations of 2,200 feet. Slopes range from 3 to 15 percent.

Knapp Creek soils are associated with Carrollton, Ceres, Eldred, Flatiron, Elko, Kinzua, and Mandy soils. They are deeper over bedrock and contain less clay in the subsoil than Carrollton and Mandy soils, and do not have a fragipan that is typical of Elko soils. They have a higher sand content than Eldred, Kinzua, or Ceres soils, and do not have the red colors that are typical of Ceres soils. They have a higher gravel content than the Flatiron soils.

Typical pedon of Knapp Creek, from a unit of Knapp Creek-Rock outcrop complex, 3 to 15 percent slopes; in the town of Olean; 3.5 miles northeast of the village of Knapp Creek, 1,400 feet north of Two Mile Road and NY Route 16, 800 feet southeast of NY Route 16:

Oe—0 to 3 inches; black (10YR 2/1) partially decomposed hardwood leaf litter; many fine, medium and coarse roots; abrupt smooth boundary.

E—3 to 11 inches; pinkish gray (5YR 6/2) gravelly loamy sand; single grain, loose; common coarse to fine roots; 25 percent rock fragments, of which 10 percent is subrounded quartz pebbles 1 to 2 inches in diameter, 5 percent is subrounded sandstone conglomerate and 10 percent sandstone conglomerate greater than 3 inches; extremely acid; abrupt wavy boundary.

Bw1—11 to 16 inches; strong brown (7.5YR 5/8) gravelly sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; few fine tubular discontinuous pores; continuous dark reddish brown (5YR 3/2) slightly cemented Bhs horizon less than one inch thick located at the top of the horizon; 25 percent rock fragments, of which 10 percent is subrounded quartz pebbles 0.5 to 3 inches in diameter, 10 percent subrounded sandstone conglomerate and 5 percent sandstone conglomerate greater than 3 inches; extremely acid; clear wavy boundary.

Bw2—16 to 22 inches; brownish yellow (10YR 6/6) very gravelly sandy loam; weak medium subangular blocky structure; very friable; common fine and medium roots; few fine tubular discontinuous pores; 40 percent rock fragments, of which 20 percent is subrounded quartz pebbles 0.5 to 3 inches in diameter, 10 percent subrounded sandstone conglomerate and 10 percent sandstone conglomerate greater than 3 inches; very strongly acid; clear wavy boundary.

BC—22 to 48 inches; 50 percent yellowish brown (10YR 5/6) and 50 percent brownish yellow (10YR 6/6) extremely gravelly sandy loam; weak medium subangular blocky structure parting to single grain; very friable; few fine and medium roots; 70 percent rock fragments, of which 5 percent is subrounded quartz pebbles 0.5 to 3 inches in diameter, 45 percent subrounded sandstone conglomerate and 20 percent sandstone conglomerate greater than 3 inches; very strongly acid; gradual smooth boundary.

Cr—48 to 58 inches; pale yellow (2.5Y 7/4) extremely gravelly sandy loam, highly weathered sandstone conglomerate matrix with quartz pebbles 0.5 to 3 inches in diameter; 80 percent rock fragments; very strongly acid, abrupt smooth boundary.

R—58 inches; Olean conglomerate, sandstone matrix with quartz pebbles 0.5 to 3 inches in diameter.

The thickness of the solum ranges from 25 to 50 inches. The depth to bedrock is 40 to 60 inches or more. The content of rock fragments, consisting dominantly of subrounded quartz and sandstone, ranges by volume, from 5 to 70 percent in individual horizons of the solum, and from 35 to 80 percent in the substratum. In some pedons, boulders, stones, and channers cover 5 to 60 percent of the surface. Reaction ranges from strongly acid to extremely acid throughout the profile.

The A horizon, where it occurs, has hue of 7.5YR or 10YR, value of 2 to 4, and chroma of 1 to 4. The texture of the fine earth fraction is loamy sand, sandy loam, fine sandy loam or loam.

The E horizon has hue of 5YR to 10YR, value of 4 to 7 and chroma of 1 to 4. The texture is loamy sand, sandy loam, or fine sandy loam in the fine earth fraction. Structure is weak, fine to medium granular, or it is single grain. Consistence is very friable or loose.

The Bw horizon has hue of 5YR to 10YR, value of 3 to 6, and chroma of 3 to 8. The texture is loamy sand, sandy loam, fine sandy loam or loam in the fine earth fraction. Structure is weak or moderate, fine or medium, subangular blocky or granular. Consistence is very friable or friable.

The BC horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 8. The textures range from loam to loamy sand in the fine earth fraction. Structure is weak subangular blocky, single grain or the material is massive. Consistence is very friable or friable.

Some pedons may have a Cr horizon of highly weathered sandstone conglomerate matrix with quartz pebbles. The textures range from loam to loamy sand.

Lamson Series

The Lamson series consists of very deep, poorly drained, nearly level soils in slightly depressional areas of former glacial lake plains and deltas. These soils formed in lake-laid deposits dominated by very fine sand and fine sand. Slopes range from 0 to 3 percent.

Lamson soils are in a drainage sequence that includes the well drained Colonie soils, the moderately well drained Elnora soils, and the somewhat poorly drained Minoa soils. They are associated with Getzville, Tonawanda, Canandaigua and Halsey soils. They are sandier than the silty Canandaigua soils, and are wetter and contain more sand than Tonawanda soils. They do not have the finer-textured silty mantle that is typical of Getzville soils, and they do not have the gravel content that is characteristic of Halsey soils.

Typical pedon of Lamson very fine sandy loam; in the town of Dayton; 50 feet south of NY 322, 1/4 mile west of NY 322 and NY 62:

Ap—0 to 9 inches; very dark gray (10YR 3/1) very fine sandy loam, light brownish gray (10YR 6/2) dry; weak medium granular structure; very friable; slightly acid; abrupt smooth boundary.

E—9 to 16 inches; pale brown (10YR 6/3) very fine sandy loam; weak medium granular structure; very friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and gray (10YR 5/1) iron depletions; slightly acid; gradual smooth boundary.

Bg—16 to 25 inches; gray (10YR 5/1) fine sandy loam; weak medium subangular blocky structure; very friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions; slightly acid; gradual smooth boundary.

Bw—25 to 35 inches; brown (10YR 5/3) fine sandy loam; weak medium subangular blocky structure; very friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and gray (10YR 5/1) iron depletions; neutral; clear smooth boundary.

C1—35 to 55 inches; dark grayish brown (10YR 4/2) loamy fine sand; massive; very friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; neutral; gradual smooth boundary.

C2—55 to 72 inches; dark grayish brown (10YR 4/2) layers of fine sandy loam and loamy fine sand; massive; very friable; slightly alkaline; slightly effervescent.

The thickness of the solum ranges from 30 to 50 inches. The depth to bedrock or to contrasting material is more than 60 inches. The depth to carbonates ranges from 24 to 60 inches. Reaction ranges from moderately acid to slightly alkaline in the surface layer and subsurface layer, and from slightly acid to moderately alkaline in the subsoil and substratum. Rock fragments are commonly absent, but in some pedons, subhorizons may have up to 15 percent.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 2 or 3, and chroma of 0 to 3. The textures are fine sandy loam, loamy very fine sandy loam, very fine sandy loam, loam and silt loam.

The E horizon has hue of 7.5YR to 2.5Y, values of 5 or 6, chroma of 1 to 4. The texture ranges from very fine sandy loam to loamy fine sand. Structure is weak granular, subangular blocky, platy, or single grain.

The B horizon has hue of 5YR to 2.5Y, values of 4 to 6, and chroma of 1 to 4. Texture is very fine sandy loam or fine sandy loam. Structure is weak subangular blocky, platy, prismatic, or the material is massive. Consistence is friable or very friable.

The C horizon has hue of 5YR to 5Y, value of 4 to 7, and chroma of 0 to 4. The texture of the thin layers of varved material ranges from fine sand to silt. This horizon is single grain or the material is massive. Consistence is very friable to firm.

Langford Series

The Langford series consists of very deep, moderately well drained, gently sloping to moderately steep soils on glaciated uplands. These soils formed in glacial till derived mainly from siltstone, sandstone, shale and some limestone. They have a fragipan starting at a depth of 15 to 28 inches. Slopes range from 3 to 25 percent.

Langford soils are in a drainage sequence that includes the somewhat poorly drained Erie soils. They are associated with Mardin, Schuyler, Ashville and Chautauqua soils. They have a clay accumulation in the subsoil that is not present in Mardin soils, and they commonly are less acid than Mardin soils. Langford soils have a fragipan that is not present in Schuyler and Chautauqua soils, and they have more clay in the subsoil than Chautauqua soils. Langford soils are better drained than Ashville soils, and they have a fragipan that is not present in Ashville soils.

Typical pedon of Langford channery silt loam, 3 to 8 percent slopes; in the town of Yorkshire; on north side of California Road, 1,900 feet east of California Road and Weaver Road:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) channery silt loam; moderate fine granular structure; very friable; many fine roots; 15 percent rock fragments; slightly acid; abrupt smooth boundary.

Bw—7 to 21 inches; yellowish brown (10YR 5/4) silt loam; weak fine and medium subangular blocky structure; very friable; many fine and few medium roots; 5 percent rock fragments; strongly acid; clear wavy boundary.

E—21 to 25 inches; brown (10YR 5/3) silt loam; weak coarse prismatic parting to moderate medium subangular blocky structure; friable; common fine and medium roots; pale brown (10YR 6/3) silt coats on ped surfaces; many medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and light brownish gray (2.5Y 6/2) iron depletions; 10 percent rock fragments; moderately acid; clear irregular boundary.

Bx—25 to 34 inches; dark yellowish brown (10YR 4/4) channery silt loam; weak very coarse prismatic parting to moderate medium to coarse subangular blocky structure; firm, brittle; few fine roots on ped surfaces; gray (10YR 6/1) ped coats with few clay films on all faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and gray (10YR 6/1) iron depletions; 15 percent rock fragments; slightly acid; clear wavy boundary.

BC—34 to 44 inches; brown (10YR 5/3) gravelly silt loam; weak very coarse prismatic parting to weak coarse subangular blocky structure; firm; gray (10YR 5/1) ped coats with few clay films on all faces of peds and on surfaces along pores; few medium and coarse distinct gray (10YR 6/1) iron depletions; dark brown (7.5YR 3/2) manganese concretions; 20 percent rock fragments; neutral; gradual wavy boundary.

C—44 to 72 inches brown (10YR 4/3) gravelly silt loam; massive; firm; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions; 15 percent rock fragments; slightly alkaline; slightly effervescent in the lower part.

The thickness of the solum ranges from 34 to 60 inches. The depth to carbonates is 36 to 65 inches. Depth to the top of the fragipan ranges from 15 to 28 inches. The depth to bedrock is more than 60 inches. The content of rock fragments consisting mainly of gravel, channers, and flagstones ranges, by volume, from 5 to 35 percent above the fragipan, and from 15 to 60 percent in the fragipan and substratum. Reaction ranges from very strongly acid to slightly acid in the surface layer, from strongly acid to neutral in the Bw and E horizon, from strongly acid to slightly alkaline in the fragipan, and from neutral to moderately alkaline in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 or 3. The texture is fine sandy loam, loam or silt loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is loam, silt loam or silty clay loam in the fine earth fraction. Structure is weak to moderate subangular blocky, platy or granular. Consistence is friable or very friable.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 or 3. The texture is loam, silt loam or silty clay loam in the fine earth fraction. Consistence is friable or firm.

The Bx horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 2 to 4. The texture is loam, silt loam or silty clay loam in the fine earth fraction. Structure is very coarse prismatic that commonly parts to subangular blocky, or the material is massive. Consistence is firm or very firm and the material is brittle.

The BC horizon has colors and textures similar to that of the Bx horizon. Structure is very coarse prismatic that commonly parts to subangular blocky, or the material is massive within the prisms. Consistence is firm or very firm.

The C horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. The texture is loam, silt loam or silty clay loam in the fine earth fraction. The material is massive, or has plate like divisions. Consistence is firm or very firm.

Mandy Series

The Mandy series consists of moderately deep, well drained, gently sloping to very steep soils that formed in material weathered from interbedded siltstone, sandstone and shale. Bedrock is at a depth of 20 to 40 inches. The soils are on hilltops and side slopes where the topography is influenced by the underlying bedrock, at elevations above 1,800 feet. Slopes range from 3 to 50 percent.

Mandy soils are associated with Carrollton, Kinzua, Elko, Eldred, and Onoville soils. They have more rock fragments in the subsoil than Carrollton soils. Mandy soils have bedrock at a depth of 20 to 40 inches, but Kinzua and Eldred soils have bedrock at a depth of more than 40 inches. They do not have the fragipan that is typical of deeper Elko and Onoville soils.

Typical pedon of Mandy channery silt loam, 15 to 25 percent slopes; in the town of Little Valley; on Kyler Hill Road, 1,000 feet northwest of the junction of Kyler Hill Road and Liebler Road:

A—0 to 2 inches; very dark brown (10YR 2/2) channery silt loam; moderate fine granular structure; very friable; many fine and medium roots; 20 percent coarse fragments; very strongly acid; abrupt wavy boundary.

Bw1—2 to 13 inches; strong brown (7.5YR 5/6) channery silt loam; moderate fine subangular blocky structure; very friable; common fine and medium roots; 30 percent rock fragments; very strongly acid; clear wavy boundary.

Bw2—13 to 24 inches; yellowish brown (10YR 5/6) very channery silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; 50 percent rock fragments; very strongly acid; clear wavy boundary.

BC—24 to 33 inches; yellowish brown (10YR 5/4) extremely flaggy silt loam; weak medium granular structure; very friable; few fine roots; 65 percent rock fragments; strongly acid; clear wavy boundary.

R—33 inches; well-fractured siltstone and sandstone bedrock.

The thickness of the solum ranges from 20 to 33 inches. The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments ranges, by volume, from 10 to 25 percent in the surface and subsurface layers, from 20 to 70 percent in the subsoil, and from 60 to 90 percent of the substratum. Reaction ranges from extremely acid to strongly acid throughout the profile.

The A horizon has hue of 10YR or 7.5YR, value and chroma of 2 to 4. The texture in the fine earth fraction is silt loam or loam.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 or 6, and chroma of 4 to 6. The texture in the fine earth fraction is silt loam or loam. Structure is weak or moderate, fine or medium subangular blocky. Consistence is very friable or friable.

The BC horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 to 8. The texture in the fine earth fraction is silt loam or loam. Consistence is very friable or friable.

Manlius Series

The Manlius series consists of moderately deep, well drained, very steep soils that formed in glacial till derived mainly from acid shale. Bedrock, consisting mainly of shale and siltstone, is at a depth of 20 to 40 inches. These soils are in areas of hilltops and side slopes where the topography is influenced by the underlying bedrock. Slopes range from 35 to 70 percent.

Manlius soils are associated with Chadakoin, Chenango, Dunkirk, Hudson, Langford, and Valois soils. Manlius soils have bedrock at a depth of 20 to 40 inches, while Chadakoin, Chenango, Dunkirk, Hudson, Langford, and Valois soils all have bedrock at a depth of more than 40 inches. Additionally, Manlius soils do not have the fragipan that is typical of the wetter Langford soils; do not have the high silt and clay content that is typical of Dunkirk and Hudson soils; do not have the gravel and sand content that is typical of Chenango and Valois soils; and, have more rock fragments than Chadakoin soils.

Typical pedon of Manlius channery silt loam, from a unit of Rock Outcrop-Manlius complex, 35 to 70 percent slopes; in the town of Otto; 1,600 feet east of Forty Road and Wickham Road, 1,070 yards north of Wickham Road:

A—0 to 4 inches; dark grayish brown (10YR 4/2) channery silt loam; weak medium and fine granular structure; friable; many fine roots; 20 percent rock fragments; strongly acid; clear smooth boundary.

Bw1—4 to 12 inches; brown (10YR 5/3) channery silt loam; weak fine subangular blocky structure; friable; common fine roots; 30 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—12 to 23 inches; yellowish brown (10YR 5/4) very channery silt loam; weak very fine granular structure; friable; few fine roots; 40 percent rock fragments; very strongly acid; gradual wavy boundary.

C—23 to 34 inches; brown (10YR 4/3) very channery silt loam; massive; friable; 50 percent rock fragments; strongly acid; abrupt wavy boundary.

2R—34 inches, very dark grayish brown (2.5Y 3/2) shale bedrock.

The thickness of the solum ranges from 15 to 35 inches. The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments, consisting mainly of shale with some siltstone and sandstone channers, ranges by volume, from 15 to 40 percent in the surface layer, from 25 to 60 percent in the subsoil, and from 30 to 70 percent in the substratum. Reaction ranges from extremely acid to moderately acid in the solum and from very strongly acid to slightly acid in the substratum.

The A horizon has hue of 7.5YR to 2.5Y, value of 3 or 4 and chroma of 2 or 3. The texture of the fine earth fraction is loam or silt loam. Structure is medium or fine granular, or subangular blocky parting to granular. Consistence is friable or very friable.

The Bw horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 3 to 6. The texture of the fine earth fraction is loam or silt loam. Structure is granular or subangular blocky. Consistence ranges from very friable to firm.

The C horizon has hue of 10YR to 5Y, value of 4 or 5, and chroma of 2 to 4. The texture of the fine earth fraction is loam or silt loam. Consistence ranges from loose to firm.

The 2R horizon is dominantly shale, or shale interbedded with siltstone bedrock.

Mardin Series

The Mardin series consist of very deep, moderately well drained gently sloping to moderately steep soils on upland plateaus. These soils formed in firm glacial till derived from siltstone, sandstone and shale. Slopes range from 3 to 25 percent.

Mardin soils are in a drainage sequence that includes the somewhat poorly drained Volusia soils and the poorly drained Chippewa soils. They are associated with Langford, Chadakoin, Towerville, Schuyler, and Valois soils. They have a fragipan that is not present in the Schuyler, Chadakoin, Towerville, and Valois soils. They are deeper over bedrock than Towerville soils and are wetter than Chadakoin and Valois soils. They do not have the clay accumulation in the subsoil that is typical of Langford soils and are more acid.

Typical pedon of Mardin channery silt loam, 3 to 8 percent slopes; in the town of Farmersville; it is 200 feet south of Hess Road, and 100 feet east of junction with Huyck Road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) channery silt loam; weak fine and medium granular structure; very friable; many fine and common medium roots; 15 percent rock fragments; strongly acid; clear smooth boundary.

Bw—6 to 14 inches; yellowish brown (10YR 5/6) silt loam; moderate fine and medium subangular blocky structure; friable; common fine and few medium roots; 10 percent rock fragments; strongly acid; clear wavy boundary.

E—14 to 17 inches; light yellowish brown (2.5Y 6/3) silt loam; weak medium platy structure; friable; few fine roots; common fine pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and gray (10YR 6/1) iron depletions; 10 percent rock fragments; strongly acid; abrupt irregular boundary.

Bx1—17 to 29 inches; olive brown (2.5Y 4/4) channery silt loam; moderate very coarse prismatic parting to weak medium subangular blocky structure; firm, brittle; peds coated with strong brown (7.5YR 5/8) and light brownish gray (2.5Y 6/2) seams separating prisms; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and few medium distinct gray (10YR 5/1) iron depletions; 15 percent rock fragments; strongly acid; gradual wavy boundary.

Bx2—29 to 41 inches; olive brown (2.5Y 4/4) channery silt loam; weak very coarse prismatic structure; very firm, slightly brittle; yellowish brown (10YR 5/6) and gray (10YR 6/1) material between prisms; few clay films on faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; 15 percent rock fragments; moderately acid; gradual wavy boundary.

C—41 to 72 inches; grayish brown (2.5Y 5/2) channery silt loam; massive; firm; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; 20 percent rock fragments; moderately acid.

The thickness of the solum ranges from 38 to 72 inches. The depth to bedrock is more than 60 inches. The depth to the top of the fragipan ranges from 14 to 26 inches. The content of rock fragments ranges, by volume, from 5 to 35 percent above the fragipan and from 15 to 60 percent in the fragipan and substratum. Reaction ranges from very strongly acid to moderately acid in the horizons above the fragipan. It ranges from very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 3 or 4, and chroma of 2 to 4. The texture is silt loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8. Structure is weak or moderate, fine or medium, subangular blocky or granular. Consistence is very friable or friable. The texture is loam or silt loam in the fine earth fraction.

The E horizon has hue of 10YR or 2.5Y, value of 5 to 7, and chroma of 2 or 3. The texture is loam or silt loam in the fine earth fraction. Structure is weak medium platy or subangular blocky. Consistence is friable or firm.

The Bx horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 2 to 4. It has faint to prominent redoximorphic features. The texture is loam or silt loam in the fine earth fraction. Structure is weak to strong, very coarse prismatic. Consistence is firm or very firm.

The C horizon has colors and textures similar to those of the Bx horizon. Structure is weak, thin plate-like divisions, or the material is massive. Consistence is firm or very firm.

Middlebury Series

The Middlebury series consists of very deep, moderately well drained, nearly level soils on flood plains and alluvial fans. These soils formed in alluvium derived from upland soils that have a high content of sandstone, siltstone and shale. Slopes range from 0 to 3 percent.

Middlebury soils are in a drainage sequence that includes the well drained Tioga soils, the somewhat poorly drained Holderton soils, and the poorly drained Wayland soils. They are associated with Unadilla and Scio soils. They have a higher content of fine sand than Unadilla and Scio soils. They are also associated with Chenango and Castile soils on nearby terraces but do not have the high gravel content that is typical of these soils.

Typical pedon of Middlebury silt loam; in the town of Allegany; 1/4 mile south of the junction of County Route 61 and County Route 60, 1,200 feet east of County Route 60:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine and medium granular structure; friable; many fine roots; 5 percent rock fragments; moderately acid; abrupt smooth boundary.

Bw1—8 to 22 inches; brown (10YR 4/3) loam; weak medium subangular blocky structure; friable; common fine roots; moderately acid; clear wavy boundary.

Bw2—22 to 30 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; strong brown (7.5YR 5/8) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions in the matrix; moderately acid; clear wavy boundary.

C1—30 to 48 inches; yellowish brown (10YR 5/4) very fine sandy loam; massive; very friable; strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; moderately acid; clear wavy boundary.

C2—48 to 72 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; very friable; moderately acid.

The thickness of the solum ranges from 15 to 45 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 20 percent in the soil to a depth of 40 inches and from 0 to 50 percent below this depth. Reaction ranges from strongly acid to slightly acid in the surface layer and from moderately acid to neutral in the subsoil and substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. The texture is loam, fine sandy loam or silt loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 2 to 4. High chroma redoximorphic features may occur in all horizons in some pedons. Low chroma redoximorphic features are the B horizons within a depth of 24 inches. The texture is very fine sandy loam, fine sandy loam, loam or silt loam in the fine earth fraction. Structure is weak or moderate, fine to coarse subangular blocky or prismatic. Consistence is friable or very friable.

The C horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4. The texture ranges from loam to fine sandy loam in the fine earth fraction above a depth of 40 inches, and includes stratified sand and gravel below this depth. Consistence is very friable to firm.

Minoa Series

The Minoa series consists of very deep, somewhat poorly drained, nearly level soils on remnant deltas and beaches on the lake plains of former glacial lakes. These soils formed in lake-laid deposits that have a high content of very fine sand or fine sand. Slopes range from 0 to 3 percent.

Minoa soils are in a drainage sequence that includes poorly drained Lamson soils. They are associated with Niagara, Tonawanda, Canandaigua, and Halsey soils. They contain less clay and silt than Niagara and Tonawanda soils. They are better drained than the silty Canandaigua soils and Halsey soils. They do not have the gravel content that is typical of Halsey soils.

Typical pedon of Minoa very fine sandy loam, 0 to 3 percent slopes; in the town of Leon; 1/4 mile south of Chicken Road and Xura Road, 100 yards west of Chicken Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) very fine sandy loam; weak fine granular structure; friable; common fine roots; less than 2 percent rock fragments; moderately acid; abrupt smooth boundary.

Bw1—9 to 20 inches; brown (10YR 5/3) fine sandy loam; weak fine subangular blocky structure; friable; common fine roots; very dark grayish brown (10YR 3/2) worm and root channels; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions; less than 2 percent rock fragments; slightly acid; gradual wavy boundary.

Bw2—20 to 32 inches; yellowish brown (10YR 5/4) fine sandy loam; weak medium subangular blocky structure; very friable; dark grayish brown (10YR 4/2) worm and root channels; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions; less than 2 percent rock fragments; slightly acid; clear wavy boundary.

BC—32 to 36 inches; grayish brown (10YR 5/2) sandy loam; massive; loose; two bands of lamellae 1 inch thick of dark grayish brown (10YR 4/2) fine sandy loam; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; less than 2 percent rock fragments; slightly acid; clear wavy boundary.

C—36 to 72 inches; grayish brown (10YR 5/2) weakly stratified fine sandy loam and fine sands; massive; loose; less than 2 percent rock fragments; neutral, slightly alkaline at 68 inches.

The thickness of the solum ranges from 20 to 40 inches. The depth to bedrock is more than 60 inches. The depth to carbonates is 40 to 72 inches. The content of rock fragments ranges, by volume, from 0 to 5 percent throughout the profile. Reaction ranges from strongly acid to neutral in the surface layer, from moderately acid to neutral in the subsoil, and moderately acid to moderately alkaline in the substratum.

The Ap horizon has hue of 5YR to 2.5Y, value of 3 or 4 and chroma of 2 or 3. The texture is silt loam to loamy very fine sand.

The Bw horizon has hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 2 to 4. The texture is very fine sandy loam, fine sandy loam or silt loam. This horizon has few to many, high and low chroma redoximorphic features. Structure is weak granular, subangular blocky or the material is massive. Consistence is very friable to firm.

The BC horizon has colors similar to those of the B horizon. Texture is silt loam through loamy very fine sand. Structure is weak, granular, subangular blocky or platy. Consistence is loose to firm.

The C horizon has hue of 5YR to 2.5Y, values of 4 to 6, and chroma of 1 to 4. The texture ranges from silt loam to loamy fine sand and includes thin layers of silty clay loam to fine sand. Consistence is loose to firm.

Mongaup Series

The Mongaup series consists of moderately deep, well drained, gently sloping to very steep soils on bedrock controlled benches, hilltops, valley sides and on other side slopes of upland plateau, above elevations of 1,800 feet. These soils formed in a thin mantle of glacial till underlain by sandstone, siltstone and shale bedrock at a depth of 20 to 40 inches. Slopes range from 3 to 70 percent.

Mongaup soils are associated with Almond, Hornellsville, Ischua, Salamanca, Willdin, and Yorkshire soils. They contain less clay than Hornellsville and Ischua soils, and are not as deep over bedrock as Salamanca soils. They do not have the fragipan that is typical of Willdin and Yorkshire soils, and are better drained than Almond soils.

Typical pedon of Mongaup channery silt loam, 8 to 15 percent slopes; in the town of Farmersville; 0.6 mile south of Bush Hill Road, about 700 feet west of Stebbins Road:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) channery silt loam; moderate fine granular structure; very friable; many fine and common medium roots; 20 percent rock fragments; strongly acid; clear wavy boundary.

Bw1—4 to 8 inches; strong brown (7.5YR 5/6) channery silt loam; moderate very fine subangular blocky structure; very friable; common fine and medium roots; 15 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—8 to 16 inches; yellowish brown (10YR 5/4) channery silt loam; weak fine and medium subangular blocky structure; friable; common fine and few medium roots; 20 percent rock fragments; strongly acid; clear wavy boundary.

Bw3—16 to 27 inches; brown (10YR 5/3) channery silt loam; weak medium subangular blocky structure; friable; few fine roots in upper part; 25 percent rock fragments; strongly acid; abrupt smooth boundary.

2R—27 inches; hard grayish sandstone and siltstone bedrock.

The thickness of the solum and depth to bedrock ranges from 20 to 40 inches. The content of rock fragments ranges, by volume, from 5 to 35 percent in the upper part of the solum and from 5 to 50 percent in the lower part of the subsoil and substratum. Reaction is extremely acid to strongly acid in the surface layer and upper part of the subsoil, and extremely acid to moderately acid in the lower part of the subsoil and substratum.

The A horizon has hue of 5YR to 10YR, value of 2 to 4, and chroma of 0 to 4. The texture is sandy loam to silt loam in the fine earth fraction.

The Bw horizons has hue of 2.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 6. The texture is sandy loam to silt loam in the fine earth fraction. Structure is weak or moderate subangular blocky.

The C horizon, where it occurs, has colors and textures similar to those of the B horizon. The material is massive or has plate like divisions.

The 2R layer is commonly hard horizontally bedded sandstone with thinner beds of siltstone or shale.

Napoli Series

The Napoli series consists of very deep, somewhat poorly drained, nearly level to moderately steep soils on till plains and upland plateaus at elevations above 1,800 feet. These soils formed in glacial till derived mainly from siltstone, sandstone, and shale. Slopes range from 0 to 25 percent.

The Napoli soils are in a drainage sequence that includes the moderately well drained Yorkshire soils. They are associated with Almond, Ischua, Gretor, Salamanca, and Willdin soils. They are deeper to bedrock than Ischua and Gretor soils, and are also wetter than the Ischua, Salamanca, and Willdin soils. They have a fragipan that is lacking in the Almond and Salamanca soils.

Typical pedon of Napoli silt loam, 3 to 8 percent slopes; in the town of Lyndon; 1,500 feet north of County Route 24, and 20 feet west of South Center Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; moderate fine granular structure; friable; many fine roots; 10 percent rock fragments; very strongly acid; abrupt smooth boundary.

Bw—9 to 15 inches; dark yellowish brown (10YR 4/4) silty clay loam; weak fine subangular blocky structure; very friable; common fine roots; few fine prominent strong brown (7.5YR 5/8) masses of iron accumulations and few fine distinct light brownish gray (10YR 6/2) iron depletions; 10 percent rock fragments; very strongly acid; clear wavy boundary.

Eg—15 to 23 inches; grayish brown (10YR 5/2) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common medium prominent strong brown (7.5YR 5/8) masses of iron accumulations, and common medium faint light brownish gray (10YR 6/2) iron depletions; 10 percent rock fragments; very strongly acid; clear wavy boundary.

Btx1—23 to 33 inches, dark yellowish brown (10YR 4/4) channery silt loam; moderate very coarse prismatic structure that parts to weak medium subangular blocky structure; firm, brittle; grayish brown (10YR 5/2) ped faces; common distinct clay films on surfaces along pores and on all faces of peds; many dark manganese concretions; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within peds, and light brownish gray (10YR 6/2) iron depletions; 25 percent rock fragments, 5 percent greater than 3 inches; very strongly acid; clear wavy boundary.

Btx2—33 to 46 inches, brown (10YR 4/3) channery silty clay loam; moderate very coarse prismatic structure that parts to moderate medium subangular blocky; firm, brittle; grayish brown (10YR 5/2) ped faces; common distinct clay films on surfaces along pores and on all faces of peds; many dark manganese concretions; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulations, and light brownish gray (10YR 6/2) iron depletions; 30 rock fragments, 10 percent larger than 3 inches; strongly acid; clear wavy boundary.

C—46 to 72 inches, grayish brown (2.5Y 5/2) channery silty clay loam; massive; firm; common medium distinct light olive brown (2.5Y 5/4) and brown (10YR 4/3) masses of iron accumulations; 30 percent rock fragments, 10 percent larger than 3 inches; slightly acid.

The thickness of the solum ranges from 30 to 75 inches. The depth to bedrock is more than 60 inches. The depth to the top of the fragipan is 12 to 27 inches. The content of rock fragments consisting mainly of channers and flagstones ranges, by volume, from 5 to 35 percent in the surface layer, from 10 to 45 percent in the upper part of the subsoil, from 15 to 45 percent in the lower part of the subsoil, and from 20 to 60 percent in the substratum. Reaction ranges from very strongly acid to slightly acid in the surface layer, from very strongly acid to moderately acid in the upper subsoil, from very strongly acid to slightly acid in the fragipan, and from strongly acid through neutral in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. The texture is silt loam or silty clay loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 or 4 with distinct or prominent redoximorphic features. The texture is silt loam, silty clay loam or clay loam in the fine earth fraction. Structure is weak or moderate subangular blocky or granular. Consistence is very friable or friable.

The Eg horizon has hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 2 or 3. The texture is silt loam or silty clay loam in the fine earth fraction. Structure is weak or moderate subangular blocky or platy.

The Btx horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is silt loam, loam, silty clay loam or clay loam in the fine earth fraction. Structure is prismatic or blocky. Consistence is firm or very firm, and is brittle or slightly brittle.

The C horizon has hue of 5YR to 5Y, value of 3 to 6, and chroma of 2 to 6. The texture of the fine earth fraction is loam, silt loam, silty clay loam, or clay loam with silty clay in some subhorizons. The material is massive or has plate-like divisions. Consistence is firm or very firm.

Niagara Series

The Niagara series consists of very deep, somewhat poorly drained, nearly level to gently sloping soils that are on the lake plains. These soils formed in silty lacustrine sediment that was deposited in former glacial lakes. Slopes range from 0 to 8 percent.

Niagara soils are in a drainage sequence that includes the well drained Dunkirk soils, the moderately well drained Collamer soils, and the poorly drained or very poorly drained Canandaigua soils. They are in landscape positions similar to those of Tonawanda, Barcelona, Rhinebeck, and Minoa soils. They have a higher clay content in the subsoil than the silty Tonawanda soils. They do not have the sandy subsoil that is typical of Minoa soils and have a lower clay content than Rhinebeck soils. They do not have the gravelly or shale subsoil that is typical of Barcelona soils.

Typical pedon of Niagara silt loam, 0 to 3 percent slope; in the town of East Otto; 0.2 mile north of Swamp Road and Harvey Road, 60 feet west of Harvey Road:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; weak medium fine granular structure; friable; many fine roots; neutral; abrupt smooth boundary.

BE—8 to 12 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; friable; common fine roots; neutral; clear and smooth boundary.

Bt1—12 to 16 inches; grayish brown (10YR 5/2) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; light brownish gray (10YR 6/2) ped coats; distinct clay films on all faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions; neutral; clear smooth boundary.

Bt2—16 to 24 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; firm; few fine roots; light brownish gray (10YR 6/2) clay films on all faces of peds and on surfaces along pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions; neutral; clear wavy boundary.

Bt3—24 to 36 inches; brown (10YR 4/3) silty clay loam; moderate medium subangular blocky structure; firm; light brownish gray (10YR 6/2) clay films on all faces of peds and on surfaces along pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions; slightly alkaline, slightly effervescent; clear wavy boundary.

C—36 to 72 inches; brown (10YR 4/3) silt loam; massive; firm; common medium distinct light brownish gray (10YR 6/2)iron depletions; moderately alkaline, strongly effervescent.

The thickness of the solum ranges from 20 to 40 inches. The depth to bedrock is more than 60 inches. Depth to carbonates ranges from 20 to 50 inches. Rock fragments commonly do not occur in the profile, but in some pedons they make up as much as 5 percent of the profile. Reaction ranges from strongly acid to neutral in the surface layer, from moderately acid to slightly alkaline in the subsoil, and from neutral to moderately alkaline in the substratum.

The Ap horizon has hues of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. The texture is very fine sandy loam, loam, or silt loam.

The BE horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4. The texture is silt loam, very fine sandy loam, or fine sandy loam. Structure is weak or moderate medium subangular or angular blocky. Consistence is friable or firm.

The Bt horizon has hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4 with faint to prominent redoximorphic features. The texture is silt loam, very fine sandy loam or silty clay loam. Structure is weak or moderate medium subangular or angular blocky. Consistence is friable or firm.

The C horizon has hue of 5Y to 2.5Y, value of 3 to 6, and chroma of 0 to 6. The texture of the fine earth fraction is very fine sandy loam, silt loam, or silty clay loam. Consistence is friable to firm.

Olean Series

The Olean series consists of very deep, moderately well drained, nearly level or gently sloping soils that formed in a mantle of silty deposits 20 to 40 inches deep over stratified glacial outwash deposits. These soils are on primary terraces along streams and on the higher secondary terraces. Slopes range from 0 to 8 percent.

Olean soils are in a drainage sequence that includes the well drained Allard soils, the somewhat poorly drained Swormville soils, and the poorly drained Getzville soils. They are closely associated with Chenango, Castile, and Unadilla soils and the periodically flooded Tioga and Middlebury soils. They do not have the content of gravel in the subsoil that is characteristic of the Chenango soils or the Castile soils. They are wetter and have more clay in the subsoil than Unadilla soils. They are slightly higher on the landscape than Tioga and Middlebury soils and are usually not subject to flooding.

Typical pedon of Olean silt loam, 0 to 3 percent slopes; in the town of Olean; city of Olean, 250 feet south of Park Street:

Ap—0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; very friable; many fine roots; less than 2 percent rock fragments; strongly acid; abrupt smooth boundary.

BE—9 to 23 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; very friable; common roots; less than 2 percent rock fragments; strongly acid; clear smooth boundary.

Bt—23 to 36 inches; brown (10YR 5/3) silty clay loam; moderate medium and fine subangular blocky structure; friable to slightly firm; few roots; thin few grayish brown (10YR 5/2) clay films on all faces of peds and on surfaces along pores; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation and light brownish gray (10YR 6/2)iron depletions; less than 2 percent rock fragments; strongly acid; abrupt smooth boundary.

2C—36 to 72 inches; brown (10YR 4/3) very gravelly loamy sand; massive; loose; 55 percent rock fragments; strongly acid.

The thickness of the solum and depth to sandy or gravelly deposits range from 20 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments is less than 5 percent, by volume, in the surface layer and subsoil, and range from 0 to 70 percent in the substratum. Rock fragments consist mainly of gravel or cobbles. Reaction ranges from very strongly acid to moderately acid in the solum, and from very strongly acid to neutral in the substratum.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. The texture is silt loam or very fine sandy loam.

The BE horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam or very fine sandy loam. Structure is weak or moderate, fine or medium granular or subangular blocky. Consistence is very friable or friable.

The Bt horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam or silty clay loam. Structure is weak or moderate, prismatic or subangular blocky. Consistence is friable or firm.

The 2C horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. Texture is loose loamy sand or sand in the fine earth fraction.

Onoville Series

The Onoville series consists of very deep, moderately well drained, gently sloping to moderately steep soils on valley sides, side slopes and benches of the unglaciated plateau, at elevations above 1,800 feet. These soils formed in colluvium weathered from interbedded shale, siltstone and fine-grained sandstone. Slopes range from 3 to 25 percent.

Onoville soils are in a drainage sequence that includes the somewhat poorly drained Shongo soils. They are associated with Carrollton, Frewsburg, Kinzua, Eldred, and Elko soils. Onoville soils are deeper over bedrock than Carrollton and Frewsburg soils, and have a fragipan layer which is not present in Kinzua and Eldred soils. They occur on colluvial positions on the landscape while Elko soils occur on summits or hilltops.

Typical pedon of Onoville silt loam, 8 to 15 percent slopes; in the town of Red House; 375 feet north of Bay State Road and 4,010 feet west of English Stoddard Road, in Allegany State Park:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam, light yellowish brown (2.5Y 6/4) dry; moderate medium and fine granular structure; friable; many very fine, common fine and few medium roots; 5 percent rock fragments; very strongly acid; abrupt smooth boundary.

BE—8 to 16 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and fine subangular blocky structure; friable; few fine distinct strong brown (7.5YR 5/8) masses of iron accumulations and light brownish gray (10YR 6/2) iron depletions within the matrix; common very fine and fine roots, and few medium roots; common fine pores; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bt—16 to 22 inches; brown (10YR 5/3) silty clay loam; moderate medium and fine subangular blocky structure; friable; common coarse distinct strong brown (7.5YR 5/8) masses of iron accumulations, and common medium faint light brownish gray (10YR 6/2) iron depletions within the matrix; common very fine and few fine roots; common fine pores; common distinct light brownish gray (10YR 6/2) clay films on all faces of peds and on surfaces along pores; thin stone line at the bottom of this horizon, 10 percent rock fragments; very strongly acid; clear wavy boundary.

Btx1—22 to 32 inches, yellowish brown (10YR 5/4) channery loam; weak very coarse prismatic structure parting to weak coarse subangular blocky; firm, brittle; many coarse distinct light gray (10YR 7/2) iron depletions and strong brown (7.5YR 5/8) masses of iron accumulations within the matrix; few fine roots along prism faces; many medium and coarse vesicular pores; common distinct clay films on all faces of peds and on surfaces along pores; 20 percent rock fragments; very strongly acid; clear wavy boundary.

Btx2—32 to 59 inches, yellowish brown (10YR 5/4) channery clay loam; moderate very coarse prismatic structure parting to moderate coarse and medium subangular blocky; very firm, brittle; many coarse distinct gray (10YR 6/1) iron depletions and strong brown (7.5YR 5/8) masses of iron accumulations within the matrix; common fine and medium vesicular pores; many prominent clay films on all faces of peds and on surfaces along pores; common coarse very dark gray (N 3/) Fe-Mn concretions; thin stone line in lower part of horizon; 25 percent rock fragments; very strongly acid; clear wavy boundary.

Btx3—59 to 65 inches; yellowish brown (10YR 5/6) channery silty clay loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; common coarse distinct light gray (10YR 7/2)iron depletions within the matrix; common fine pores; common prominent clay films on all faces of peds and on surfaces along pores; common medium very dark gray (5YR 3/1) Fe-Mn concretions; 20 percent rock fragments; strongly acid; clear wavy boundary.

CB—65 to 72 inches; variegated dark grayish brown (2.5Y 4/2) and yellowish brown (10YR 5/6) channery clay loam; weak very coarse prismatic structure; firm; common medium distinct pinkish gray (7.5YR 7/2) iron depletions within the matrix; common fine prominent very dark gray (5YR 3/1) Fe-Mn concretions; common fine pores; few distinct silt coats in pores; 20 percent rock fragments; strongly acid; clear wavy boundary.

The thickness of the solum ranges from 35 to 70 inches. The depth to bedrock is more than 60 inches. The content of rock fragments, consisting mainly of shale and siltstone, ranges, by volume, from 5 to 35 percent in the surface, 5 to 40 percent in the subsoil, and from 15 to 70 percent in the substratum. Reaction is very strongly acid or strongly acid throughout the profile, with some subhorizons in the substratum being moderately acid.

The A horizon has a hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. The texture in the fine earth fraction is silt loam or loam.

The BE horizon has hue of 7.5YR to 2.5Y, values of 5 or 6, and chroma of 3 to 6. The texture in the fine earth fraction is silt loam, silty clay loam, or loam. Structure is weak or moderate, fine or medium subangular blocky or granular. Consistence is very friable or friable.

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 6, with low and high chroma redoximorphic features in the upper 10 inches of the horizon. The texture is silt loam, loam, silty clay loam, with subhorizons of silty clay in the fine-earth fraction. Structure is subangular blocky or prismatic. Consistence is friable or firm.

The Btx horizon has hue of 7.5YR to 5Y, value of 4 to 7, and chroma of 2 to 6. The texture in the fine earth fraction is silt loam, loam, silty clay loam and clay loam. Structure is weak or moderate, fine to very coarse subangular blocky or prismatic. Consistence is firm or very firm, brittle or slightly brittle.

The CB horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 6. Texture ranges from loam to clay. Consistence is friable or firm. Structure is weak prismatic or weak platy, or the horizon is massive.

Orpark Series

The Orpark series consists of moderately deep, somewhat poorly drained, nearly level to strongly sloping soils on the crests of plateaus and the summits of upland. These soils formed in a thin mantle of glacial till underlain with siltstone and shale bedrock at depths of 20 to 40 inches. Slopes range from 0 to 15 percent.

The Orpark soils are in a drainage sequence that includes the moderately well drained Towerville soils. They are in landscape positions similar to those of Fremont, Volusia, and Hornell soils. They are not so deep over bedrock as Volusia and Fremont soils, and do not have a fragipan that is typical of Volusia soils. They have less clay in the subsoil than Hornell soils.

Typical pedon of Orpark silt loam, 3 to 8 percent slopes; in the town of Ashford; on east side of Cole Road, 300 feet south of intersection with Beech Road:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam; weak medium granular structure; friable; many fine roots; 5 percent rock fragments; slightly acid, limed; abrupt smooth boundary.

Bw1—8 to 12 inches; light olive brown (2.5Y 5/4) silt loam; weak fine subangular blocky structure; friable; common fine and few medium roots; common medium distinct olive gray (5Y 5/2) ped faces; common medium prominent strong brown

(7.5YR 5/6) masses of iron accumulation and distinct olive gray (5Y 5/2) iron depletions in the matrix; 5 percent rock fragments; strongly acid; clear smooth boundary.

Bw2—12 to 22 inches; light olive brown (2.5Y 5/4) silty clay loam; moderate medium subangular blocky structure; firm; common fine roots; gray (5Y 5/1) ped faces; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and common fine distinct olive gray (5Y 5/2) iron depletions in the matrix; 10 percent rock fragments; strongly acid; clear smooth boundary.

C—22 to 24 inches; light olive brown (2.5Y 5/4) silt loam; weak thick plate like divisions; firm; few very fine roots; common medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and common fine distinct olive gray (5Y 5/2) iron depletions in the matrix; 5 percent rock fragments; strongly acid; abrupt smooth boundary.

Cr—24 to 26 inches; olive brown (2.5Y 4/4) extremely channery silty clay loam; dark gray (10YR 4/1), gray (10YR 5/1) and strong brown (7.5YR 5/6) weathered shale; thin plate-like divisions inherited from the bedrock; firm; 70 percent rock fragments; strongly acid; abrupt smooth boundary.

2R—26 inches; soft shale bedrock interbedded with siltstone.

The thickness of the solum ranges from 20 to 32 inches. The depth to bedrock ranges from 20 to 40 inches. The content of rock fragments, consisting mainly of soft shale, siltstone or fine grained sandstone, ranges, by volume, from 0 to 10 percent in the surface layer, from 0 to 20 percent in the subsoil, from 0 to 35 percent in the substratum, and up to 90 percent in the Cr horizon. Unless limed, reaction is very strongly acid or strongly acid throughout the profile.

The Ap horizon has a hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 3. The texture is loam, silt loam or silty clay loam in the fine earth fraction.

The Bw horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 2 to 4. The texture is silt loam or silty clay loam in the fine earth fraction. Structure is weak or moderate, fine to medium subangular blocky or prismatic. Consistence is friable or firm.

The C horizon, has colors and textures similar to those of the Bw horizon. It has plate-like divisions, or the material is massive.

The Cr horizon, if it occurs, has colors and textures similar to those of the Bw horizon. It has plate-like divisions, or the material is massive.

The 2R horizon is soft shale or siltstone.

Palms Series

The Palms series consists of very deep, very poorly drained, nearly level soils in depressional areas on lake plains and till plains throughout the county. These soils formed in decomposed organic deposits underlain by loamy mineral soil at a depth of 16 to 51 inches. Slopes range from 0 to 3 percent.

The Palms soils are associated with Carlisle, Halsey, Canandaigua, and Alden soils. They are shallower to mineral deposits than Carlisle soils. They do not have the high content of silt and clay that is typical of Canandaigua soils. They do not have the content of rock fragments that is typical of Halsey and Alden soils.

Typical pedon of Palms muck, 0 to 2 percent slopes; in the town of Farmersville; 3 miles south of Siloam Road and 0.3 miles west of Blue Street:

Oa1—0 to 12 inches; black (10YR 2/1) sapric material, broken and rubbed; moderate, medium and coarse granular structure; very friable; 5 percent fiber, 1 percent fiber rubbed; many fine roots; moderately acid; clear smooth boundary.

Oa2—12 to 23 inches; black (10YR 2/1) sapric material, broken and rubbed; 5 percent fibers, 2 percent fiber when rubbed; weak medium granular structure; slightly sticky; few roots; moderately acid; clear smooth boundary.

Oa3—23 to 32 inches; black (10YR 2/1) sapric material, broken face, very dark brown (10YR 2/2) sapric material rubbed; 10 percent fiber, 3 percent fiber when rubbed; some woody fragments; massive; slightly sticky; moderately acid; abrupt smooth boundary.

C1—32 to 43 inches; gray (10YR 6/1) fine sandy loam; weak thin plate-like divisions; non-sticky; slightly acid; abrupt smooth boundary.

C2—43 to 72 inches; gray (10YR 5/1) gravelly loam; massive; slightly sticky; 20 percent rock fragments; slightly acid.

The depth to the underlying mineral material ranges from 16 to 51 inches. The depth to bedrock is more than 60 inches. Reaction of the organic material ranges from strongly acid to slightly alkaline, and from slightly acid to moderately alkaline in the underlying mineral material. The content of fragments of twigs, branches, or logs in the organic material range from 0 to 15 percent. Rock fragment content ranges from 0 to 25 percent in the substratum.

The surface layer is primarily black (10YR 2/1) or very dark brown (10YR 2/2) sapric material.

The organic subsurface layers have hue of 5YR to 10YR or are neutral. They have value of 2 or 3, and chroma of 0 to 3. The organic material is mainly sapric material.

The C horizon has hue of 10YR to 5Y, value of 4 to 7, and chroma of 1 or 2. The texture is fine sandy loam, loam, silt loam, silty clay loam or clay loam.

Pawling Series

The Pawling series consists of very deep, moderately well drained, nearly level soils on flood plains and alluvial fans. These soils formed in alluvium derived from upland soils that have a high content of sandstone, siltstone and shale. Slopes range from 0 to 3 percent.

Pawling soils are associated with Tioga, Middlebury, Unadilla, and Scio soils. They occur in lower positions on the landscape than Unadilla and Scio soils, and Unadilla and Scio soils are not underlain by stratified sand and gravel deposits within a depth of 40 inches. They do not have deep silty deposits that are typical of Tioga and Middlebury soils. They are also associated with Chenango and Castile soils that occur on nearby terraces, but do not have the content of gravel in the upper part of the profile, that is characteristic of well drained Chenango or moderately well drained Castile soils.

Typical pedon of Pawling silt loam; in the town of Ellicottville; adjacent to south side of Great Valley Creek, 500 feet north of NY Route 242 and 0.7 miles from Irish Hill Road and NY Route 242:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine and medium granular structure; very friable; many fine roots; moderately acid; clear smooth boundary.

Bw1—9 to 22 inches; brown (10YR 4/3) silt loam; weak fine subangular blocky structure; very friable; common fine and medium roots; 2 percent rock fragments; moderately acid; clear smooth boundary.

Bw2—22 to 28 inches; brown (10YR 5/3) loam; weak medium and coarse subangular blocky structure; very friable; few fine roots; common coarse distinct dark yellowish brown (10YR 4/4) masses of iron accumulation and gray (10YR 5/1) iron depletions; 5 percent rock fragments; moderately acid; abrupt wavy boundary.

2C1—28 to 39 inches; gray (10YR 5/1) gravelly loamy sand; massive; loose; common medium distinct brown (10YR 4/3) masses of iron accumulation; 20 percent rock fragments; slightly acid; abrupt wavy boundary.

2C2—39 to 72 inches; dark gray (10YR 4/1) very gravelly sand; single grain; loose; 50 percent rock fragments; slightly acid.

The thickness of the solum ranges from 20 to 45 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 10 percent in the solum and from 15 to 70 percent in the substratum. Reaction ranges from strongly acid to moderately acid above 20 inches and moderately acid to neutral in the lower part of the solum and substratum.

The Ap horizon has hue of 10YR or 2.5Y, value 3 or 4, and chroma of 2 or 3. The texture is silt loam or loam.

The B horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, chroma of 3 or 4. Redoximorphic features with low and high chroma occur in the lower part of this horizon. The textures are silt loam, loam, or fine sandy loam in the fine earth fraction. Structure is weak or moderate, fine to coarse subangular blocky or granular. Consistence is friable or very friable.

The 2C horizon has hue of 10YR or 2.5Y, value of 4 or 5, chroma of 1 to 3. The textures are sand or loamy sand in the fine earth fraction. The material is massive or single grain. Consistence is very friable or loose.

Philo Series

The Philo series consists of very deep, moderately well drained, nearly level soils on flood plains and alluvial fans. These soils formed in alluvial derived from upland soils that have a high content of sandstone, siltstone and shale. Slopes range from 0 to 3 percent.

Philo soils are in a drainage sequence that includes the well drained Pope soils, and the poorly drained Atkins soils. They are associated with Unadilla and Scio soils. They have a higher content of fine sand than Unadilla and Scio soils. They are also associated with Chenango and Castile soils on nearby terraces but do not have the high gravel content that is typical of these soils.

Typical pedon of Philo silt loam, 0 to 3 percent slopes, in a cultivated field; town of Portville; 400 feet south west of River Road and Barberton Road, 50 feet west of River Road:

Ap—0 to 8 inches, dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many fine roots; strongly acid; abrupt smooth boundary.

Bw1—8 to 14 inches, dark yellowish brown (10YR 4/4) fine sandy loam; moderate fine granular structure; friable; common fine roots; strongly acid; clear wavy boundary.

Bw2—14 to 21 inches, yellowish brown (10YR 5/6) fine sandy loam; weak fine subangular blocky structure; friable; few fine roots; strongly acid; clear smooth boundary.

Bw3—21 to 34 inches, yellowish brown (10YR 5/4) loam; weak fine subangular blocky structure; friable; common medium distinct strong brown (7.5YR 5/8) masses of iron concentrations and grayish brown (10YR 5/2) iron depletions in the matrix; strongly acid; clear smooth boundary.

C1—34 to 46 inches, strong brown (7.5YR 5/6) loam; massive; friable; 5 percent rock fragments, strongly acid; clear smooth boundary.

C2—46 to 72 inches, strong brown (7.5YR 5/6) sandy loam; massive; friable; 10 percent rock fragments; strongly acid.

The thickness of the solum ranges from 20 to 48 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 20 percent in the surface layer, subsoil and substratum and from 0 to 40 percent in the C horizon. Reaction ranges from very strongly acid to moderately acid throughout the profile.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. The texture of the fine-earth fraction is silt loam, loam, sandy loam, and fine sandy loam.

The Bw horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 3 to 6, and chroma of 3 to 6. Redoximorphic features with low and high chroma occur in the lower part of this horizon. Structure is weak or moderate, fine to coarse subangular blocky or granular. The texture of the fine earth fraction is silt loam, loam, fine sandy loam, and sandy loam. Consistence is friable or very friable.

The C horizon has hue of 7.5YR to 5Y, or is neutral, value of 4 to 6, and chroma of 0 to 6. The texture of the fine earth fraction is silt loam, loam, fine sandy loam, and sandy loam. Consistence is friable or very friable.

Pope Series

The Pope series consists of very deep, well drained, nearly level soils on flood plains. These soils formed in alluvium derived from upland soils that have a high content of sandstone, siltstone and shale. Slopes range from 0 to 3 percent.

Pope soils are in a drainage sequence that includes the moderately well drained Philo soils, and the poorly drained Atkins soils. They are associated with Unadilla and Scio soils. They have a higher content of fine sand than Unadilla and Scio soils. They are also associated with Chenango and Castile soils on nearby terraces but do not have the high gravel content in the subsoil, which is typical of these soils.

Typical pedon of Pope fine sandy loam, 0 to 3 percent slopes; in the town Portville; 1.2 miles south of Barberton Road and NY Route 305, 125 feet west of NY Route 305:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) fine sandy loam; moderate medium granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bw1—10 to 17 inches; yellowish brown (10YR 5/4) very fine sandy loam; weak medium subangular blocky structure; very friable; common fine roots; strongly acid; clear wavy boundary.

Bw2—17 to 38 inches; dark yellowish brown (10YR 4/4) very fine sandy loam; weak fine and medium subangular blocky structure; very friable; few fine roots; strongly acid; clear wavy boundary.

C1—38 to 64 inches; dark yellowish brown (10YR 4/4) loam; massive; friable; common medium distinct brown (7.5YR 5/4) iron concretions in the matrix; 10 percent rock fragments; strongly acid.

C2—64 to 80 inches; brown (10YR 4/3) sandy loam; massive; friable; 10 percent rock fragments; very strongly acid.

The thickness of the solum ranges from 30 to 60 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 30 percent to a depth of 40 inches, and from 0 to 75 percent below that depth. Reaction is strongly acid or very strongly acid throughout the profile.

The Ap horizon has hue of 10YR, value of 3 to 6, and chroma of 3 to 6. The texture in the fine earth fraction is fine sandy loam, sandy loam, loam, or silt loam.

The Bw horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6. Structure is weak or moderate, fine to coarse subangular blocky or granular. The texture in the fine earth fraction is sandy loam, fine sandy loam, very fine sandy loam, loam, or silt loam. Consistence is friable or very friable.

The C horizon has hue of 10YR or 7.5YR, value of 4 to 6, and chroma of 3 to 6. The texture in the fine earth fraction is loamy sand, loamy fine sand, fine sandy loam, sandy loam, loam, or sandy clay loam, or stratified layers of any of these textures. Consistence is friable or very friable.

Portville Series

The Portville series consists of very deep, somewhat poorly drained, gently sloping or strongly sloping soils on toeslopes, side slopes, and benches of the unglaciated plateau. These soils formed in colluvium derived from interbedded shale, siltstone and fine-grained sandstone. Slopes range from 3 to 15 percent.

Portville soils are in a drainage sequence that includes the moderately well drained Buchanan soils, and the poorly drained Brinkerton soils. They are closely associated with Gilpin, Rayne, and Cavode soils. They are deeper to bedrock than Gilpin soils, and have a fragipan layer which is lacking in Rayne and Cavode soils. They are wetter than Rayne soils, and have less clay in the subsoil than Cavode soils.

Typical pedon of Portville silty clay loam, 3 to 8 percent slopes; in the town of Carrollton; 50 feet north of Limestone Run Road, 1.6 miles west of Parkside Drive and Limestone Run Road:

Ap—0 to 7 inches; dark grayish brown (10YR 4/2) silty clay loam; moderate fine and medium granular structure; very friable; many fine roots; 10 percent rock fragments; very strongly acid; abrupt smooth boundary.

E—7 to 12 inches; pale brown (10YR 6/3) channery silt loam; weak medium subangular blocky structure; friable; common fine roots; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation and common medium distinct light brownish gray (2.5Y 6/2) iron depletions in the matrix; 15 percent rock fragments; very strongly acid; clear irregular boundary.

E/Btx—12 to 22 inches; E material (occurs as fillings between tops of prisms, 3 inches wide at the top and 1 inch at the bottom) is light brownish gray (2.5Y 6/2) channery silt loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; Btx material is dark yellowish brown (10YR 4/4) channery silt loam; weak coarse prismatic parting to moderate medium subangular blocky structure; firm, slightly brittle; few fine roots along prisms faces; common fine pores; light brownish gray (10YR 6/2) ped faces; thin discontinuous clay films on all faces of peds and on surfaces along pores; common fine manganese concretions; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions in the matrix; 20 percent rock fragments; very strongly acid; clear wavy boundary.

Btx1—22 to 35 inches; yellowish brown (10YR 5/6) channery silt loam; moderate very coarse prismatic parting to weak medium subangular blocky structure; very firm, brittle; few fine roots along prism faces; thin discontinuous light brownish gray (10YR 6/2) clay films on all faces of peds and on surfaces along pores; light brownish gray (10YR 6/2) exterior prism faces with strong brown (7.5YR 5/8) rinds; common fine manganese concretions; common medium distinct light brownish gray (10YR 6/2) iron depletions and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 20 percent rock fragments; strongly acid; clear wavy boundary.

Btx2—35 to 50 inches; yellowish brown (10YR 5/4) channery silt loam; weak very coarse prismatic parting to weak very coarse subangular blocky structure; very firm, brittle; few fine roots along prism faces; common fine pores; light brownish gray (10YR 6/2) exterior prism faces with strong brown (7.5YR 5/8) rinds; thin discontinuous clay films on all faces of peds and on surface along pores; common fine manganese concretions; common medium distinct light brownish gray (10YR 6/2) iron depletions and strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 30 percent rock fragments; strongly acid; clear wavy boundary.

C1—50 to 60 inches; yellowish brown (10YR 5/6) channery silty clay loam; massive; firm; many thick continuous gray (10YR 6/1) clay and silt coatings on fracture faces; common medium distinct gray (10YR 6/1)iron depletions in the matrix; 15 percent rock fragments; strongly acid; clear wavy boundary.

C2—60 to 72 inches, yellowish brown (10YR 5/4) very gravelly silty clay loam; massive; firm; few manganese concretions; 40 percent rock fragments; strongly acid.

The thickness of the solum ranges from 36 to 80 inches. The depth to bedrock is more than 60 inches. The depth to the fragipan ranges from 12 to 36 inches. The content of rock fragments ranges, by volume, from 2 to 15 percent in the surface layer, from 5 to 40 percent in the subsoil, and from 15 to 60 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the surface layer, subsurface layer and subsoil, and from very strongly acid to slightly acid in the substratum.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 1 to 3. The texture is loam, silt loam or silty clay loam in the fine earth fraction.

The E horizon has hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 2 to 4. The texture is silt loam, loam or silty clay loam in the fine earth fraction. Structure is weak or moderate subangular blocky or platy. Consistence is very friable or friable.

The Bt horizon or Bw horizon, if present, has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6, with low and high chroma redoximorphic features in the upper 10 inches of the horizon. The texture is silt loam or silty clay loam in the fine earth fraction. Structure is weak or moderate subangular blocky or prismatic. Consistence is friable or firm.

The Btx horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 8. The texture is loam, silt loam, silty clay loam, or clay loam in the fine earth fraction. Structure is prismatic or subangular blocky. Consistence is firm or very firm.

The BC horizon, if present, has colors similar to that of the Btx horizon and textures similar to that of the C horizon. Structure is prismatic or platy. Consistence is firm or very firm.

The C horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 6. The texture is loam, silt loam, silty clay loam, or silty clay in the fine earth fraction. It is massive. Consistence ranges from friable to very firm.

Rayne Series

The Rayne series consists of very deep, well drained, moderately steep to very steep soils that formed in residuum weathered from interbedded shale, siltstone, and some fine grained sandstone. They are on upland ridgetops and hillsides of the unglaciated plateau. Slopes range from 15 to 50 percent.

The Rayne soils are associated with Buchanan, Cavode, Eldred, Gilpin, Hartleton, and Portville soils. They are deeper over bedrock than Gilpin and Hartleton soils, and also do not have the rock fragments content that is typical of Hartleton soils. They contain less clay in the subsoil than Cavode soils. They do not have a fragipan that is typical of Buchanan and Portville soils. They are better drained and occur at a lower elevation than Eldred soils.

Typical pedon of Rayne channery silt loam, 15 to 25 percent slopes; in the town of Great Valley; located along access road to cellular tower, 0.6 miles north of the intersection of Halsaver Road with Hardscrabble Road:

A—0 to 4 inches; very dark grayish brown (10YR 3/2) channery silt loam; weak fine and medium granular structure; very friable; many fine roots; 20 percent rock fragments; strongly acid; abrupt wavy boundary.

BE—4 to 16 inches; yellowish brown (10YR 5/4) channery silt loam; weak medium subangular blocky structure; friable; common roots; 20 percent rock fragments, of which 5 percent is greater than 3 inches in diameter; strongly acid; clear smooth boundary.

Bt1—16 to 31 inches; brown (10YR 5/3) channery silt loam; weak medium subangular blocky structure; friable; common medium and fine roots; few clay films on surfaces along pores; 20 percent rock fragments; strongly acid; abrupt smooth boundary.

Bt2—31 to 38 inches; dark yellowish brown (10YR 4/4) channery silt loam; moderate medium subangular blocky structure; firm; few fine and medium roots; few clay films on surfaces along pores; 25 percent rock fragments; strongly acid; abrupt wavy boundary.

C—38 to 72 inches; light olive brown (2.5Y 5/3) channery silt loam; massive; firm; 25 percent rock fragments; strongly acid.

The thickness of the solum ranges from 38 to 60 inches. The depth to bedrock is more than 60 inches. The content of rock fragments, consisting mainly of channers and flagstones ranges, by volume, from 5 to 40 percent in the solum and from 15 to 60 percent in the substratum. Reaction is very strongly acid or strongly acid throughout the profile.

The A horizon has a hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 to 4. The texture is silt loam or loam in the fine earth fraction.

The BE horizon has hue of 7.5YR to 2.5Y, value and chroma of 4 to 6. The texture is loam or silt loam in the fine earth fraction. Consistence is friable or very friable.

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 8. The texture of the fine earth fraction is loam, silt loam, clay loam, or silty clay loam. Some pedons have lithochromic mottles in the B and C horizons. Structure is weak or moderate subangular or angular blocky. Consistence is friable or firm.

The BC horizon, when present, has hue of 7.5YR to 5Y, value of 4 or 5 and chroma of 3 to 8. The textures are similar to those of the C horizon. Structure is subangular blocky or platy. Consistence ranges from friable to very firm.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 1 to 8. The texture is loam, silt loam, silty clay loam and clay loam in the fine-earth fraction. This horizon has plate-like divisions, or the material is massive. Consistence is firm or very firm.

Red Hook Series

The Red Hook series consists of very deep, somewhat poorly drained, nearly level soils on outwash plains and terraces, stream terraces, and moraines. These soils formed in glacial outwash and stream deposits. Slopes range from 0 to 3 percent.

Red Hook soils are in a drainage sequence that includes well drained Chenango soils, moderately well drained Castile soils and very poorly drained Halsey soils. They are associated with Tonawanda, Swormville, Scio, and Busti soils. They do not have the high silt content that is typical of Tonawanda and Scio soils, and they contain more rock fragments than those soils. They do not have the finer textured mantle that is typical of Swormville soils. Red Hook soils formed in outwash and have a stratified substratum, while Busti soils formed in glacial till.

Typical pedon of Red Hook silt loam, 0 to 3 percent slopes; in the town of Conewango; 2,000 feet south of NY Route 241 and Swamp Road, 500 feet east of Swamp Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam; pale brown (10YR 6/3) dry; moderate medium granular structure; friable; many fine roots; 10 percent rock fragments; slightly acid; abrupt smooth boundary.

Bw—9 to 21 inches; brown (10YR 4/3) gravelly loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct grayish brown (10YR 5/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation within the matrix; 20 percent rock fragments; neutral; clear wavy boundary.

Bg—21 to 32 inches; dark grayish brown (10YR 4/2) gravelly sandy loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation within the matrix and grayish brown (10YR 5/2) iron depletions; 30 percent rock fragments; neutral; clear wavy boundary.

C—32 to 72 inches; dark grayish brown (10YR 4/2) very gravelly sandy loam; massive; loose; 45 percent rock fragments; neutral.

The thickness of the solum ranges from 20 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 35 percent in the surface layer, from 10 to 60 percent in the subsoil, and from 15 to 65 percent in the substratum. Reaction ranges from strongly acid to slightly acid in the surface, from moderately acid to neutral in the subsoil, and from moderately acid to slightly alkaline in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 2 or 3. Texture is fine sandy loam, loam, or silt loam in the fine earth fraction.

The B horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4. The texture is sandy loam, loam or silt loam in the fine earth fraction. Structure is weak or moderate, fine or medium, subangular blocky. Consistence is friable or firm.

The C horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 1 to 3. The texture is quite variable. It ranges from gravelly or very gravelly loamy sand to gravelly or very gravelly silt loam. Consistence is loose to firm.

Rhinebeck Series

The Rhinebeck series consists of very deep, somewhat poorly drained, nearly level to strongly sloping soils formed in clayey lacustrine sediments. They are on glacial lake plains. Slopes range from 0 to 15 percent.

Rhinebeck soils are in a drainage sequence that includes the moderately well drained Hudson soils and the poorly drained Canadice soils. They are associated with Churchville, Barcelona, Niagara, and Canandaigua soils. They are better drained than the silty Canandaigua soils, and they contain more clay than the silty Niagara soils. They do not have the rock fragments in the substratum that are associated with the Churchville and Barcelona soils. Also, Barcelona soils have bedrock at a depth of 40 to 60 inches.

Typical pedon of Rhinebeck silt loam, 3 to 8 percent slopes; in the town of Yorkshire; southeast of intersection of County Route 73 and Weaver Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many fine roots; moderately acid; abrupt smooth boundary.

BE—9 to 13 inches; dark yellowish brown (10YR 4/4) silty clay loam; moderate fine and medium blocky structure; friable; common fine roots; common pores; light brownish gray (2.5Y 6/2) silt films on faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and gray (10YR 5/1) iron depletions; moderately acid; clear wavy boundary.

Bt1—13 to 20 inches; dark yellowish brown (10YR 4/4) silty clay; moderate coarse prismatic that parts to moderate medium angular blocky structure; firm; few fine roots; common fine pores; grayish brown (10YR 5/2) clay films on all faces of peds and on surfaces along pores; many medium distinct yellowish brown (10YR 5/8) masses of iron accumulations and gray (10YR 5/1) iron depletions; slightly acid; gradual smooth boundary.

Bt2—20 to 38 inches; brown (10YR 4/3) silty clay; strong coarse prismatic structure that parts to moderate coarse angular blocky; firm; dark grayish brown (10YR 4/2) clay films on all faces of peds and on surfaces along pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and gray (10YR 5/1) iron depletions; neutral; clear wavy boundary.

C—38 to 72 inches; grayish brown (10YR 5/2) silty clay loam; massive; firm; thin gray lenses of silt loam in varves; common medium distinct brown (10YR 4/3) masses of iron accumulation and gray (10YR 5/1) iron depletions; calcareous, moderately alkaline.

The thickness of the solum ranges from 20 to 40 inches. The depth to carbonates range from 20 to 72 inches. The depth to bedrock is more than 60 inches. Rock fragments commonly are not present in the profile, but in some pedons make up as much as 10 percent by volume. Reaction ranges from strongly acid to neutral in the surface layer, strongly acid to slightly alkaline in the subsoil, and from slightly acid to moderately alkaline in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 to 3. The texture is silt loam, loam or silty clay loam.

The BE horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam, silty clay loam, or silty clay. Structure is weak or moderate subangular blocky or platy. Consistence ranges from friable to firm.

The Bt horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 2 to 4. It has distinct high and low chroma redoximorphic features. The texture is silty clay loam or silty clay. Structure is weak to strong prismatic to subangular or blocky. Consistence is firm or very firm.

The C horizon has hue of 5YR to 5Y, value of 3 to 5, chroma of 1 to 4. The texture commonly ranges from silty clay loam to clay, but in some horizons the range includes fine sand. This horizon is massive and may be varved.

Rushford Series

The Rushford series consists of very deep, moderately well drained, gently sloping to sloping soils, formed in a thin mantle of glacial till underlain with silty lacustrine material. They are on elevated lake plains and end moraines in the upland plateau. Slopes range from 3 to 15 percent.

Rushford soils are in a drainage sequence that includes the somewhat poorly drained Wiscoy soils. They are associated with Canaseraga, Langford, Mardin, Schuyler, and Towerville soils. They have a fragipan that is lacking in the Schuyler soils, and are deeper to bedrock than Towerville soils. Rushford soils do not have a mantle of silty material that is present in Canaseraga soils. They are underlain with silty lacustrine material which is lacking in Langford and Mardin soils.

Typical pedon of Rushford channery silt loam, 3 to 8 percent slope; in the town of Yorkshire; 1,500 feet east of County Route 21 and Cagwin Road:

A—0 to 4 inches, brown (10YR 4/3) channery silt loam; moderate very fine granular structure; very friable; many fine and medium roots; 15 percent rock fragments; very strongly acid; abrupt wavy boundary.

Bw1—4 to 9 inches, yellowish brown (10YR 5/6) channery silt loam; moderate fine subangular blocky structure; very friable; many fine and medium roots; 15 percent rock fragments; strongly acid; abrupt wavy boundary.

Bw2—9 to 21 inches, yellowish brown (10YR 5/4) channery silt loam; weak fine subangular blocky structure; very friable; common fine and medium roots; few fine faint yellowish brown (10YR 5/8) masses of iron accumulations within the matrix in the lower part; 20 percent rock fragments; strongly acid; abrupt wavy boundary.

Bx1—21 to 28 inches, pale brown (10YR 6/3) channery loam; weak very coarse prismatic structure parting to weak fine subangular blocky; very firm, brittle; prism faces are 1/4 inch wide with gray (N 6/0) exteriors and brownish yellow (10YR 6/6) borders; common fine faint yellowish brown (10YR 5/4) masses of iron accumulations within the matrix; 25 percent rock fragments; strongly acid; clear smooth boundary.

2Bx2—28 to 36 inches, yellowish brown (10YR 5/4) silt loam; weak very coarse prismatic structure parting to weak thick platy; firm, slightly brittle; gray (N 6/0) prism faces with brownish yellow (10YR 6/6) borders; strongly acid; clear smooth boundary.

2C—36 to 72 inches; olive brown (2.5Y 4/4) silt loam, with some varves of dark yellowish brown (10YR 4/4) silty clay loam; moderate medium plate-like divisions (inherited varves); firm; strongly acid.

The thickness of the solum ranges from 24 to 50 inches. The depth to bedrock is more than 60 inches. The thickness of the loamy mantle ranges from 20 to 36 inches. The content of rock fragments ranges, by volume, from 15 to 35 percent by volume in the surface layer and upper part of the subsoil, and from 0 to 5 percent in the lower part of the subsoil and substratum. Reaction ranges from very strongly acid to slightly acid in the surface layer, from very strongly acid to moderately acid in the Bw horizon and upper fragipan, and from very strongly acid to slightly acid in the fragipan, and substratum.

The A or Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 1 to 4. The texture is silt loam or loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam, loam, or fine sandy loam in the fine earth fraction. Structure is weak or moderate, fine to coarse subangular blocky or granular. Consistence is friable or very friable.

The Bx horizon has colors similar to those of the Bw horizon. The texture is loam or silt loam in the fine earth fraction. Structure is coarse or very coarse prismatic with platy, subangular blocky or massive interiors. Consistence is firm or very firm and brittle.

The 2Bx horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma or 2 to 4. The texture is silt loam or silt. Consistence is firm or very firm.

The 2C horizon has hue of 5YR to 5Y, value of 3 to 5, and chroma of 2 to 4. The texture is silt or silt loam, and may contain thin varves of silty clay loam, silty clay or clay. The material is massive or has plate-like divisions. Consistence is firm or very firm.

Salamanca Series

The Salamanca series consists of very deep, moderately well drained, gently sloping to steep soils on glaciated uplands. These soils formed in glacial till derived from sandstone, siltstone, and shale. They are on upland till plains, hilltops and valley sides above elevations of 1,800 feet in the upland plateau. Slopes range from 3 to 35 percent.

The Salamanca soils are in a drainage sequence that includes somewhat poorly drained Almond soils. They are associated on the landscape with Yorkshire, Franklinville, Ischua, and Willdin soils. They do not have the fragipan typical of Yorkshire and Willdin soils. They are wetter and finer textured than Franklinville soils, and are deeper over bedrock than Ischua soils. Valois and Chadakoin soils are also on landscapes at lower elevations. Salamanca soils are wetter and have more clay content in the subsoil than Valois and Chadakoin soils.

Typical pedon of Salamanca silt loam, 3 to 8 percent slopes; in the town of Lyndon; one mile east of North Center Road and Porter Road, 400 feet north of Porter Road:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine and medium granular structure; very friable; many fine roots; 10 percent rock fragments, consisting mainly of channers; moderately acid; abrupt smooth boundary.

Bw1—8 to 16 inches; brown (10YR 5/3) silt loam; weak fine subangular blocky structure; very friable; common fine roots; 5 percent rock fragments, consisting mainly of channers; moderately acid; clear smooth boundary.

Bw2—16 to 28 inches; light olive brown (2.5Y 5/4) channery silty clay loam; moderate medium subangular blocky structure; firm; very few roots; light brownish gray (10YR 6/2) ped faces; common medium distinct grayish brown (10YR 5/2) iron depletions and strong brown (7.5YR 5/8) masses of iron accumulation in the lower part; 20 percent rock fragments; strongly acid; clear wavy boundary.

Bw3—28 to 37 inches; light olive brown (2.5Y 5/4) channery silt loam; weak medium subangular blocky structure; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions; 25 percent rock fragments; strongly acid; clear wavy boundary.

C—37 to 72 inches; olive brown (2.5Y 4/4) channery silt loam; massive; firm; common medium distinct grayish brown (10YR 5/2) iron depletions and yellowish brown (10YR 5/6) masses of iron accumulation; 30 percent rock fragments; strongly acid.

The thickness of the solum ranges from 26 to 50 inches. The depth to bedrock is more than 60 inches. The content of rock fragments, consisting mainly of channers and flagstones ranges, by volume, from 5 to 35 percent in the upper part of the solum and from 20 to 50 percent in the lower part of the solum and substratum. Reaction ranges from very strongly acid to moderately acid in the surface layer and subsoil, and from very strongly acid to slightly acid in the substratum.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 1 to 3. The texture is silt loam or loam in the fine earth fraction.

The Bw horizons have hues of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam, loam or silty clay loam in the fine earth fraction. Structure is weak or moderate, fine to coarse, subangular blocky or granular. Consistence ranges from very friable to firm.

The C horizon has hues of 7.5YR to 5Y, values of 3 to 5, and chroma of 1 to 4. The texture is silt loam, loam or silty clay loam in the fine earth fraction.

Saprists

Saprists consist of very deep, very poorly drained organic soils. These soils formed in deposits of well decomposed herbaceous and woody plant remnants. They are ponded with shallow water throughout most of the year and commonly are termed fresh water marsh. They are commonly level, and are in low lying areas adjacent to lakes and streams.

Saprists commonly are near Carlisle, Palms, Canandaigua, Alden, and Wayland soils. Carlisle and Palms soils are generally not permanently ponded. Canandaigua, Alden, and Wayland soils are only ponded or flooded for brief periods of time.

Because of the variability of Saprists, a typical pedon is not provided. Saprists typically have organic deposits 16 to 60 inches thick over mineral soil deposits. The depth to bedrock is more than 60 inches. Woody fragments make up 0 to 20 percent of the organic layers. The soils are very strongly acid to neutral in the organic part of the profile and strongly acid to moderately alkaline in the mineral substratum.

The O layer mainly has hue of 5YR to 10YR or is neutral. It has value of 2 or 3, and chroma of 0 to 2. It consists mainly of well decomposed sapric material.

The mineral 2C horizon has hue of 5YR to 5Y or is neutral. It has value of 1 to 6 and chroma of 0 to 4. It is loamy sand to silty clay or the gravelly and very gravelly analogs of the textures within that range.

Schuyler Series

The Schuyler series consists of very deep, moderately well drained, gently sloping to very steep soils on valley sides and on other side slopes of upland plateaus. These soils formed in glacial till derived from shale, siltstone, and sandstone. Slopes range from 3 to 50 percent.

The Schuyler soils are in a drainage sequence that includes somewhat poorly drained Fremont soils and poorly drained Ashville soils. They are associated with Mardin, Chadakoin, Towerville, and Orpark soils. They are finer textured than Mardin soils, and they do not have the fragipan that is characteristic of Mardin soils. They are deeper over bedrock than Towerville soils, which have bedrock within a depth of 40 inches. They are wetter and contain more clay than the Chadakoin soils, and they are better drained and deeper over bedrock than Orpark soils.

Typical pedon of Schuyler silt loam, 8 to 15 percent slopes; in the town of Franklinville; on Hess road, 1/4 mile west of Allegany County line:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium granular structure; friable; many fine roots; 5 percent rock fragments; strongly acid; clear smooth boundary.

Bw1—6 to 13 inches; light yellowish brown (10YR 6/4) silt loam; weak fine subangular blocky structure; friable; common fine roots; 5 percent rock fragments; very strongly acid; clear smooth boundary.

Bw2—13 to 23 inches; yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and grayish brown (2.5Y 5/2) iron depletions in the lower part; 10 percent rock fragments; very strongly acid; clear smooth boundary.

Bg—23 to 35 inches; light brownish gray (2.5Y 6/2) channery silty clay loam; weak coarse prismatic parting to moderate medium subangular blocky structure; firm; many medium prominent strong brown (7.5YR 5/6) masses of iron accumulation and light olive gray (5Y 6/2) iron depletions; 20 percent rock fragments; strongly acid; clear wavy boundary.

C—35 to 72 inches; olive brown (2.5Y 4/4) channery silty clay loam; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and light olive gray (5Y 6/2) iron depletions; massive; firm; 20 percent rock fragments; strongly acid.

The thickness of the solum ranges from 20 to 48 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 35 percent in the surface and upper subsoil, and from 20 to 60 percent in the lower subsoil and substratum. Reaction ranges from very strongly acid to moderately acid throughout the profile.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 2 to 5, and chroma of 1 to 3. The texture is silt loam, fine sandy loam or loam.

The Bw or Bg horizons have hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture of the fine earth fraction is loam, silt loam, or silty clay loam. Structure is weak or moderate, fine, or medium subangular blocky. Consistence ranges from very friable to firm.

The C horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 1 to 4. The texture of the fine earth fraction is loam, silt loam or silty clay loam. This horizon is massive, or has plate-like divisions.

Scio Series

The Scio series consists of very deep, moderately well drained, nearly level soils on terraces or old alluvial fans. These soils formed in wind or water deposited silt and very fine sand. Slopes range from 0 to 3 percent.

The Scio soils are in a drainage sequence that includes well drained Unadilla soils and the somewhat poorly drained Tonawanda soils. They are associated with Castile, Allard, Olean, and Collamer soils. They have less clay in the subsoil than Collamer and Olean soils, and they do not have the contrasting gravelly deposits that are typical of the Allard and Olean soils. Scio soils do not have the gravelly rock fragments in the upper part of the profile that are associated with Castile soils.

Typical pedon of Scio silt loam, 0 to 3 percent slopes; in the town of Freedom; adjacent to NY Route 98 and about 0.2 miles south of junction with Brown School House Road:

Ap—0 to 9 inches, dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many fine roots; moderately acid (limed); abrupt smooth boundary.

Bw1—9 to 17 inches, yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; common pores; strongly acid; clear wavy boundary.

Bw2—17 to 26 inches, yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; few fine roots; common pores; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and gray (10YR 6/1) iron depletions; strongly acid; clear wavy boundary.

BC—26 to 36 inches, dark yellowish brown (10YR 4/4) silt loam; weak coarse subangular blocky structure; friable; common pores; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions; strongly acid; clear smooth boundary.

C—36 to 50 inches, brown (10YR 5/3) silt loam; weak very coarse plate like divisions; friable; few pores; common medium distinct light brownish gray (2.5Y 6/2) iron depletions; moderately acid; abrupt smooth boundary.

2C—50 to 72 inches, dark brown (10YR 3/3) gravelly loamy sand; single grain; wet non-sticky; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation; 20 percent rock fragments; moderately acid.

The thickness of the solum ranges from 20 to 48 inches. The depth to material that has texture different from the solum is more than 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 5 percent above a depth of 40 inches and from 0 to 60 percent below this depth. Reaction is very strongly acid or strongly acid in the surface layer (unless limed) and upper subsoil, very strongly acid to moderately acid in the lower subsoil, and strongly acid to slightly alkaline in the substratum

The Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3. The texture is silt loam, very fine sandy loam, or fine sandy loam.

The B horizon has hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 3 to 6. It has high and low chroma redoximorphic features. The texture of the fine earth fraction is silt loam or very fine sandy loam. Structure is weak or moderate, fine or medium, subangular blocky or platy. Consistence is very friable or friable.

The C horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 1 to 4. The texture of the fine earth fraction is silt loam or very fine sandy loam to a depth of 40 inches, and can be silt loam to stratified sand and gravel below this depth. These horizons are massive or single grain or have weak plate like divisions. Consistence is friable to firm.

The 2C horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 1 to 4. The texture of the fine earth fraction is silt loam, very fine sandy loam or loamy very fine sand. Below 40 inches, the texture may range from fine sandy loam to very gravelly sand. These horizons are massive or single grain. Consistence is loose to friable.

Shongo Series

The Shongo series consists of very deep, somewhat poorly drained, gently sloping to strongly sloping soils on toeslopes, side slopes, and benches of the unglaciated plateau. These soils formed in colluvium derived from interbedded shale, siltstone and fine-grained sandstone at elevations over 1,800 feet. Slopes range from 3 to 15 percent.

Shongo soils are in a drainage sequence that includes the moderately well drained Onoville soils. They are closely associated with Carrollton, Kinzua, Ivory, and Eldred soils. They are deeper to bedrock than Carrollton soils, and have a fragipan which is lacking in Kinzua, Ivory, and Eldred soils. Additionally, they are wetter than Eldred soils, and have less clay in the subsoil than Ivory soils.

Typical pedon of Shongo silt loam, 3 to 8 percent slopes; in the town of Red House, in Allegany State Park; 150 feet north of Bay State Road and 4,350 feet west of English Stoddard Road:

Ap—0 to 6 inches; dark grayish brown (10YR 4/2) silt loam; moderate fine and medium granular structure; friable; many fine roots; 5 percent rock fragments; very strongly acid; abrupt smooth boundary.

BE—6 to 14 inches; yellowish brown (10YR 5/4) silt loam; moderate medium and fine subangular blocky structure; friable; many fine roots; few fine pores; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation and common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 5 percent rock fragments; very strongly acid; clear wavy boundary.

Bt—14 to 24 inches; brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; friable; few fine roots; common fine pores; light brownish gray (10YR 6/2) ped faces; common clay films on all faces of peds and on surfaces along pores; common medium distinct light brownish gray (10YR 6/2) iron depletions and common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 10 percent rock fragments; strongly acid; clear wavy boundary.

Btx1—24 to 45 inches; grayish brown (2.5Y 5/2) channery silty clay loam; weak very coarse prisms parting to weak medium subangular blocky structure; very firm, brittle; few fine roots along prism faces; common pores; prism faces are 1/8 inch thick and have light brownish gray (10YR 6/2) exteriors with strong brown (7.5YR 5/8) rinds; common thin clay films on all faces of peds and on surfaces along pores; common manganese concretions; common medium prominent yellowish brown (10YR 5/6) masses of iron accumulation and common medium distinct light brownish gray (10YR 6/2) iron depletions in the matrix; 30 percent rock fragments; strongly acid; clear wavy boundary.

Btx2—45 to 56 inches; light olive brown (2.5Y 5/4) channery silty clay loam; weak very coarse prisms parting to weak medium subangular blocky structure; firm, brittle; common pores; prism faces are 1/8 inch thick and have gray (10YR 6/1) exteriors and strong brown (7.5YR 5/6) rinds; common thin clay films on all faces of peds and on surfaces along pores; common manganese concretions; thin stone line in lower part of horizon; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and gray (2.5Y 6/1) iron depletions in the matrix; 30 percent rock fragments; strongly acid; clear wavy boundary.

BC—56 to 72 inches; light olive brown (2.5Y 5/4)very channery silty clay loam; moderate thick platy structure; firm; common manganese stains; 35 percent rock fragments; moderately acid.

The thickness of the solum ranges from 36 to 80 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 35 percent in the surface layer, from 5 to 40 percent in the subsoil, and from 15 to 60 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the solum, and from very strongly acid to slightly acid in the substratum.

The A or Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4 and chroma of 1 to 3. The texture is silt loam or silty clay loam in the fine earth fraction.

The BE horizon has hue of 7.5YR to 5Y, value of 4 to 6 and chroma of 2 to 6. The texture is silt loam, silty clay loam or loam in the fine earth fraction. Structure is weak or moderate subangular blocky or granular. Consistence is very friable or friable.

The Bt horizon has hue of 7.5YR to 5Y, value of 4 to 6 and chroma of 2 to 6. It has low and high chroma redoximorphic features in the upper 10 inches of this horizon. The texture is silt loam, silty clay loam or loam in the fine earth fraction. Structure is weak or moderate subangular blocky. Consistence is friable or firm.

The Btx horizon has hue of 7.5YR to 5Y, value of 4 to 6 and chroma of 2 to 8. The texture is loam, silt loam, silty clay loam, or clay loam in the fine earth fraction. Structure is prismatic parting to blocky. Consistence is firm or very firm.

The BC horizon has hue of 7.5 YR to 5Y, value of 3 to 6, and chroma of 2 to 6. Textures are similar to those of the Btx horizon. Structure is prismatic or platy. Consistence is firm or very firm.

The C horizon has hue of 7.5YR to 5Y, value of 3 to 6, chroma of 2 to 6. The texture is loam, silt loam, silty clay loam, or clay loam in the fine earth fraction. It is massive. Consistence ranges from friable to very firm.

Swormville Series

The Swormville series consists of very deep, somewhat poorly drained, nearly level soils on broad valley flats and lake plains. These soils are formed in silty lacustrine deposits and old alluvial deposits that are high in content of silt and clay and underlain by sandy lake-laid sediment. Slopes range from 0 to 3 percent.

The Swormville soils are in a drainage sequence that includes the well drained Allard soils, the moderately well drained Olean soils, and the poorly drained Getzville soils. They are associated with Tonawanda, Minoa, Niagara and Canandaigua soils. They have more clay in the surface mantle than Tonawanda soils, and they are not so sandy in the upper part of the mantle as Minoa soils. They are better drained than Canandaigua soils. The silty Niagara soils are not underlain by sand within a depth of 40 inches.

Typical pedon of Swormville silt loam; in the town of Leon; 1/4 mile west of Dredge Road and NY Route 62, 100 feet north of Dredge Road:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) silt loam; weak fine subangular blocky structure; friable; many fine roots; less than 2 percent rock fragments; slightly acid; abrupt smooth boundary (6 to 12 inches thick.)

Bt1—8 to 19 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; few fine roots; dark grayish brown (10YR 4/2) worm and root channels; faint clay films on all faces of peds and on surfaces along pores; grayish brown (10YR 5/2) iron depletions on all faces of peds; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions within the matrix; less than 2 percent rock fragments; slightly acid; gradual wavy boundary.

Bt2—19 to 31 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; slightly firm; few fine roots; grayish brown (10YR 5/2) iron depletions on all faces of peds; common distinct clay films on all faces of peds and on surfaces along pores; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and gray (10YR 5/1) iron depletions within the matrix; less than 2 percent rock fragments; slightly acid; gradual wavy boundary (Combined thickness of the Bt horizon is 10 to 35 inches).

BC—31 to 35 inches; grayish brown (10YR 5/2) sandy loam; massive; friable; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation; 5 percent rock fragments; neutral; clear wavy boundary (0 to 7 inches thick).

2C1—35 to 52 inches; grayish brown (10YR 5/2) loamy sand; massive; very friable; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common medium distinct gray (10YR 6/1) iron depletions; 10 percent rock fragments; neutral; clear wavy boundary.
2C2—52 to 72 inches; grayish brown (10YR 5/2) medium sands; massive; loose; 10 percent rock fragments; neutral, slightly alkaline at 65 inches.

Depth to the underlying sandy material ranges from 20 to 38 inches. The thickness of the solum ranges from 25 to 45 inches. Depth to bedrock is greater than 60 inches. Depth to carbonates ranges from 20 to 70 inches. Rock fragments, dominantly gravel, range from 0 to 5 percent in the A and Bt horizons and from 0 to 40 percent in the 2B and 2C horizons. Unless the soil is limed, reaction ranges from strongly acid to neutral in the surface layer, from moderately acid to neutral in the upper part of the subsoil, from slightly acid to slightly alkaline in the lower part of the subsoil, and neutral to moderately alkaline in the substratum.

The Ap or A horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 2 or 3. Texture of the fine-earth fraction is loam, silt loam, clay loam, or silty clay loam. Structure is weak or moderate, granular or subangular blocky. Consistence is friable or very friable. Thickness of the A horizon ranges from 2 to 5 inches thick.

The Bt horizons have hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 2 to 6, with both high and low chroma redoximorphic features. Chroma of 2 or less is dominant on all faces of peds. Texture of the fine-earth fraction is silt loam, clay loam, or silty clay loam. Structure is prismatic, subangular blocky or blocky. Consistence is friable or firm.

A thin BC, 2BC, or 2CB horizon, where present, underlies the Bt horizons with similar colors. Structure is generally of weaker grade. Texture of the fine-earth fraction is loamy fine sand to very fine sandy loam. Consistence is friable, very friable, or loose. Free carbonates are present in these horizons in some pedons.

The 2C horizon has hue of 5YR to 5Y, value of 3 to 5, and chroma of 1 to 4. Texture of the fine-earth fraction ranges from loamy fine sand to sand. It has very friable or loose consistence.

Teel Series

The Teel series consist of very deep, moderately well drained, nearly level soils on flood plains along major streams. These soils formed in silty alluvial sediments. Slopes range from 0 to 3 percent.

Teel soils are in a drainage sequence that includes the well drained Hamlin soils, the somewhat poorly drained Wakeville soils, and the poorly drained Wayland soils. They are associated with Middlebury, Tioga, Tonawanda, Scio and Canandaigua soils. Tonawanda and Scio soils formed in silty lacustrine deposits. Teel soils are better drained and have less clay content in the subsoil than Canandaigua soils. They do not have the content of sand and gravel that is typical of Middlebury and Tioga soils and are more silty.

Typical pedon of Teel silt loam; in the town of Ashford; in a corn field one mile east of Thomas Corners Road, 900 feet north of the junction of Thomas Corners Road and County Route 12:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; moderate medium to fine granular structure; friable; many fine roots; less than 2 percent rock fragments; neutral; abrupt smooth boundary.
Bw1—8 to 22 inches; dark yellowish brown (10YR 4/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; less than 2 percent rock fragments; neutral; clear smooth boundary.

Bw2—22 to 34 inches; brown (10YR 5/3) silt loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix and grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

C1—34 to 56 inches; brown (10YR 4/3) silt loam; massive; friable; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation in the matrix and grayish brown (10YR 5/2) iron depletions in the matrix; neutral; clear wavy boundary.

C2—56 to 72 inches; grayish brown (10YR 5/2) very fine sandy loam; massive; very friable; slightly alkaline.

The thickness of the solum ranges from 24 to 50 inches. The depth to bedrock is more than 60 inches. The content of rock fragments commonly is, by volume, less than 5 percent in the surface layer and subsoil but ranges from 0 to 20 percent in the substratum. Reaction ranges from strongly acid to neutral above a depth of 30 inches and from moderately acid to slightly alkaline below this depth.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 1 to 3. The texture is silt loam or very fine sandy loam.

The B horizon has hue of 5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. The texture is silt loam or very fine sandy loam. Structure is weak or moderate, medium or coarse subangular blocky to prismatic. Consistence is friable or very friable.

The C horizon has hue of 5YR to 2.5Y, value of 3 to 5, and chroma of 1 to 4. The texture is silt loam, very fine sandy loam or fine sandy loam in the fine earth fraction. This horizon is massive or has plate like divisions. Consistence ranges from very friable to firm.

Tioga Series

The Tioga series consists of very deep, well drained nearly level soils on flood plains along major streams and creeks. These soils formed in alluvium derived mainly from parent materials containing sandstone, siltstone and shale. Slopes range from 0 to 3 percent.

Tioga soils are in a drainage sequence that includes the moderately well drained Middlebury soils and the somewhat poorly drained Holderton soils. They are associated with Hamlin, Teel, Chenango, and Unadilla soils. They have a lower silt content than Hamlin and Teel soils, which also occur on flood plains. They contain less silt but more rock fragments than Unadilla soils, which are in the higher positions on terraces. They do not have the high gravel content in the subsoil that is typical of Chenango soils.

Typical pedon of Tioga silt loam; in the town of Allegany; 1/4 mile south of the junction of County Route 19 and County Route 60, and 1,500 feet east of County Route 60:

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

Bw1—8 to 16 inches; brown (10YR 4/3) silt loam; weak medium subangular blocky structure; very friable; many fine roots; moderately acid; clear wavy boundary.

Bw2—16 to 34 inches; brown (10YR 5/3) very fine sandy loam; weak medium subangular blocky structure; very friable; few roots; moderately acid; clear wavy boundary.

C1—34 to 42 inches; yellowish brown (10YR 5/4) very fine sandy loam; massive; very friable; 5 percent rock fragments; moderately acid; clear wavy boundary.

C2—42 to 72 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; loose; 10 percent rock fragments; moderately acid.

The thickness of the solum ranges from 18 to 40 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 35 percent in individual layers of the solum and from 0 to 60 percent in the substratum. Reaction ranges from strongly acid to neutral in the solum and from moderately acid to slightly alkaline in the substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, chroma of 2 to 4. The texture is fine sandy loam to silt loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. The textures range from fine sandy loam to silt loam in the fine earth fraction. Structure is weak or moderate, fine to coarse, subangular blocky, prismatic, or granular. Consistence is very friable or friable.

The BC horizon, where it occurs, has colors and textures similar to those of the B horizon. Structure is weak, subangular blocky, or the material is massive. Consistence is very friable, friable or loose.

The C horizon has hue of 7.5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4. The textures range from loamy sand to silt loam in the fine earth fraction. Consistence ranges from loose to friable.

Tonawanda Series

The Tonawanda series consists of very deep, somewhat poorly drained, nearly level to gently sloping soils on low flats and in basins on former lake plains. These soils formed in lake-laid deposits that have a high content of silt and very fine sand. Slopes range from 0 to 8 percent.

The Tonawanda soils are in a drainage sequence that includes the well drained Unadilla soil, and moderately well drained Scio soils. They are associated with Swormville, Getzville, Lamson, Canandaigua, and Niagara soils. They are better drained than Lamson and Canandaigua soils, are not as sandy as Lamson soils, and have a lower content of clay than Canandaigua soils. They are coarser textured than Niagara soils, and they do not have the fine textured mantle or underlying coarse textured material that is typical of Swormville and Getzville soils.

Typical pedon of Tonawanda silt loam, 0 to 3 percent slopes; in the town of Leon; 100 feet west of Frog Valley Road, 1/2 mile north of Frog Valley Road and Xura Road:

Ap—0 to 9 inches; very dark grayish brown (10YR 3/2) silt loam; moderate medium granular structure; friable; many fine roots; 2 percent rock fragments; neutral; abrupt smooth boundary.

Bw—9 to 14 inches; brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; friable; many fine roots; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and few gray (10YR 6/1) iron depletions; 2 percent rock fragments; slightly acid; gradual wavy boundary.

Bg1—14 to 22 inches; grayish brown (10YR 5/2) silt loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct yellowish brown (10YR 5/6) and strong brown (7.5YR 5/6) masses of iron accumulation, and gray (10YR 6/1) iron depletions; 2 percent rock fragments; slightly acid; gradual wavy boundary.

Bg2—22 to 38 inches; grayish brown (10YR 5/2) silt loam; weak medium subangular blocky structure; friable; common medium distinct yellowish brown (10YR 5/8) and yellowish red (5YR 5/6) masses of iron accumulation, and gray (10YR 6/1) iron depletions; 2 percent rock fragments; slightly acid; clear wavy boundary.

C1—38 to 64 inches; grayish brown (10YR 5/2), yellowish brown (10YR 5/6) and gray (10YR 6/1) silt loam; massive; friable; 5 percent rock fragments; slightly acid; abrupt wavy boundary.

C2—64 to 72 inches; grayish brown (10YR 5/2) stratified loamy fine sand and medium sands; massive; loose; 10 percent rock fragments; slightly acid.

The thickness of the solum ranges from 16 to 40 inches. The depth to bedrock is more than 60 inches. The rock fragment content is usually less than 2 percent throughout the solum, but may range up to 10 percent in the substratum. Reaction ranges from strongly acid to neutral in the surface layer and subsoil and from moderately acid to slightly alkaline in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 2 to 4, and chroma of 1 to 3. The texture is silt loam or very fine sandy loam.

The B horizon has hue of 5YR to 5Y, value of 4 to 6 and chroma of 1 to 4. The texture is silt, silt loam, very fine sandy loam, or loamy very fine sand. Structure is weak or moderate, fine to medium, granular or subangular blocky. Consistence is friable or firm.

The C horizon has colors and textures similar to those of the B horizon. It is massive or has varves that differ from each other in color and texture. Consistence is friable or firm.

Towerville Series

The Towerville series consists of moderately deep, moderately well drained, gently sloping to very steep soils on valley sides and on other side slopes in upland plateaus. These soils formed in a thin mantle of glacial till underlain by siltstone and shale at a depth of 20 to 40 inches. Slopes range from 3 to 50 percent.

The Towerville soils are in a drainage sequence that includes the somewhat poorly drained Orpark soils. They are associated with Hornell, Schuyler, Mardin, Chadakoin, and Fremont soils. They contain less clay than Hornell soils and are not so deep over bedrock as Schuyler soils. They do not have the fragipan that is typical of Mardin soils, have more clay in the subsoil than Chadakoin, and are better drained than Fremont soils.

Typical pedon of Towerville silt loam, 8 to 15 percent slopes; in the town of Lyndon; near Clark Road, about 0.4 mile east of junction with Sabo Road:

Ap—0 to 7 inches, dark grayish brown (10YR 4/2) silt loam; moderate fine granular structure; friable; many fine roots; 10 percent rock fragments; strongly acid; clear smooth boundary.

Bw1—7 to 15 inches, yellowish brown (10YR 5/4) silt loam; moderate medium subangular blocky structure; friable; common fine roots; 5 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—15 to 23 inches, light yellowish brown (10YR 6/4) silt loam; weak fine and medium subangular blocky structure; friable; common fine roots; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation and gray (10YR 6/1) iron depletions; 10 percent rock fragments; strongly acid; clear smooth boundary.

Bw3—23 to 32 inches, brown (10YR 4/3) channery silty clay loam; moderate fine subangular blocky structure; firm, slightly sticky; some remnant shale bedding seams; gray (5Y 6/1) silt coats on all faces of peds; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and dark grayish brown (2.5Y 4/2) iron depletions; 20 percent rock fragments; strongly acid; abrupt smooth boundary.

2R—32 inches, gray sandstone and olive shale layered bedrock.

The thickness of he solum and depth to bedrock ranges from 20 to 40 inches. The content of rock fragments consisting mainly channers and flagstones ranges, by volume, from 5 to 35 percent by volume in the upper part of the solum, and from 10 to 60 percent in the lower part of the solum and substratum. Reaction ranges from very strongly acid to moderately acid in the Ap and Bw horizons. If they occur, reaction ranges from very strongly acid to slightly acid in the BC horizon, and from strongly acid to slightly acid in the C horizon.

The Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 2 to 4. Textures are silt loam or loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. Texture is silt loam, loam, or silty clay loam in the fine earth fraction. Structure is weak to moderate, fine to coarse, subangular blocky. Consistence ranges from very friable to firm.

The BC horizon or C horizon, if it occurs, has hue of 5YR to 5Y, value of 3 to 6, and chroma of 1 to 6. The textures are similar to those of the B horizon but can include the very channery or very gravelly analogs of those textures. Structure is subangular blocky or platy in the BC horizon, but the C horizon is massive.

The R horizon is shale, siltstone, or sandstone that is horizontally bedded and commonly is interbedded.

Udifluvents

Udifluvents consist of deep, moderately well drained soils adjacent to perennial and intermittent streams. These soils are frequently flooded. They formed in recent alluvial deposits and show little or no soil development. Slopes range from 0 to 3 percent.

Udifluvents are mapped with Fluvaquents. They are often near Middlebury, Holderton, Teel, and Wayland soils and occur in areas where adjacent stream frequently shift the soil deposits from place to place by scouring, cutting, and lateral erosion.

Because of the variability of Udifluvents, a typical pedon is not provided. The solum of these soils generally has an A horizon of 0 inch to 9 inches thick. The depth to bedrock is more than 4 feet. Coarse fragments that include gravel, cobblestones, and flagstones, make up 0 to 70 percent, by volume, of some horizons. The soils are very strongly acid to moderately alkaline. The content of organic matter decreases irregularly as depth increases.

The A horizon mainly has hue of 5YR to 2.5Y, value of 3 or 4, and chroma of 2 or 3. The texture is quite variable. It is loamy sand to silt loam or the gravelly or very gravelly analogs of the textures within that range. In some areas the surface is stony.

The C horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 2 to 4. Some pedons have redoximorphic features. The texture is loamy sand to silt loam or gravelly, cobbly, or very gravelly analogs of the textures within that range. Consistence is friable to loose.

Udorthents

Udorthents are deep, excessively drained to somewhat poorly drained soils that show little or no evidence of pedogenic horizons. They occur in areas that have been altered by filling and grading activity associated with landfills, highways, housing developments, industrial sites, and other nonfarm uses. Slopes range from 0 to 35 percent.

Udorthents are in areas near urban development and in some rural areas. They also are in areas of gravelly deposits, where the original soil material has been removed.

Because of the variability of Udorthents, a typical pedon is not provided. Udorthents have a surface layer that ranges from 0 to 36 inches thick. The depth to bedrock is more than 5 feet. The content of coarse fragments, including gravel and cobblestones, ranges from 0 to 65 percent in individual horizons. Reaction ranges from very strongly acid to moderately alkaline.

The A horizon dominantly has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 1 to 4. The texture is loamy sand to silt loam or the gravelly or very gravelly analogs.

The C horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 3 or 4. The texture is loamy sand to silty clay or the gravelly or very gravelly analogs of the textures within that range. Trash and other debris commonly are mixed with the soil material in some areas.

Unadilla Series

The Unadilla series consists of very deep, well drained, nearly level to moderately steep soils on stream terraces. These soils formed in wind and water deposited silt and very fine sand. Slopes range from 0 to 25 percent.

The Unadilla soils are in a drainage sequence that includes the moderately well drained Scio soils and the somewhat poorly drained Tonawanda soils. They are associated with Tioga, Castile, Allard, and Chenango soils. They do not have the contrasting gravelly deposits within a depth of 40 inches that are typical of Allard soils. They do not have the gravelly subsoil associated with Chenango and Castile soils, and they are better drained than Castile soils. They contain more silt than Tioga soils, and they are in higher positions on terraces.

Typical pedon of Unadilla silt loam, 0 to 3 percent slopes; in the town of Allegany; 120 feet south of Two Mile Road and County Route 60:

Ap—0 to 9 inches; brown (10YR 4/3) silt loam; weak medium fine granular structure; very friable; many fine roots; moderately acid; abrupt smooth boundary.

Bw1—9 to 14 inches; yellowish brown (10YR 5/6) silt loam; weak medium subangular blocky structure; very friable; common fine roots; moderately acid; gradual smooth boundary.

Bw2—14 to 33 inches; brown (7.5YR 5/4) silt loam; weak medium subangular blocky structure; friable; few roots; 2 percent rock fragments; strongly acid; gradual smooth boundary.

C—33 to 55 inches; brown (7.5YR 4/4) silt loam; massive; friable; common medium faint yellowish brown (10YR 5/6) masses of iron accumulation; thin lenses of fine sandy loam; weak medium plate like divisions; 2 percent rock fragments; strongly acid; clear wavy boundary.

2C—55 to 72 inches; brown (7.5YR 4/4) gravelly sandy loam; massive; loose; 25 percent rock fragments; strongly acid.

The thickness of the solum ranges from 20 to 50 inches. The depth to bedrock is more than 60 inches. The depth to contrasting material is more than 40 inches. The content of rock fragments ranges, by volume, from 0 to 5 percent in the solum and from 0 to 60 percent in the C or 2C horizons. Reaction ranges from very strongly acid to moderately acid in the surface layer and subsoil, and strongly acid to slightly alkaline in the substratum.

The Ap horizon has hue of 5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 4. The texture is silt loam or very fine sandy loam.

The Bw horizon has hue of 5YR to 2.5Y, value of 3 to 6, and chroma of 3 to 6. The texture is silt loam or very fine sandy loam. Structure is weak or moderate, subangular blocky or prismatic, or the material is massive. Consistence ranges from very friable to firm.

The C and 2C horizon has hue of 7.5YR to 5Y, value of 4 or 5, and chroma of 2 to 6. The texture is silt loam or very fine sandy loam above a depth of 40 inches, and ranges from fine sandy loam to very gravelly sand below this depth. The C horizon is massive or single grain, or has weak or moderate plate like divisions. Consistence ranges from loose to firm.

Valois Series

The Valois series consists of very deep, well drained, gently sloping to very steep soils on reglaciated outwash, and on lateral and recessional moraines. These soils formed in ablated glacial till dominated by material derived from sandstone, siltstone and shale. Slopes range from 3 to 50 percent.

The Valois soils are associated with Chadakoin, Chautauqua, Chenango, Mardin, and Schuyler soils. They have less gravel in the subsoil than Chenango soils. They do not have the fragipan that is typical of Mardin soils, and they contain less clay and are better drained than Schuyler soils. They have more gravel in the substratum than the Chadakoin and Chautauqua soils. Also, they are better drained than Chautauqua soils.

Typical pedon of Valois gravelly silt loam, 8 to 15 percent slopes; in the town of Yorkshire; in an abandoned pit on the east side of Cagwin Road and 0.5 mile north of Lime Lake Road:

Ap—0 to 6 inches; dark grayish brown (10YR4/2) gravelly silt loam; moderate medium granular structure; very friable; many fine roots; 20 percent rock fragments; strongly acid; clear smooth boundary.

Bw1—6 to 17 inches; strong brown (7.5YR 5/6) gravelly silt loam; weak fine subangular blocky structure; very friable; many fine roots; 20 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—17 to 27 inches; yellowish brown (10YR 5/6) gravelly silt loam; weak medium subangular blocky structure; very friable; common fine roots; 15 percent rock fragments; strongly acid; clear wavy boundary.

Bw3—27 to 48 inches; yellowish brown (10YR 5/4) gravelly loam; weak medium subangular blocky structure; friable; few fine roots; 20 percent rock fragments; strongly acid; gradual smooth boundary.

2C—48 to 72 inches; brown (10YR 5/3) very gravelly sandy loam; loose; single grain; 35 percent rock fragments; strongly acid.

The thickness of the solum ranges from 30 to 70 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 5 to 35 percent in the surface layer and the upper part of the subsoil and from 15 to 35 percent in the lower part of the subsoil. Contrasting layers containing 35 to 70 percent rock fragments are common below a depth of 40 inches. Reaction ranges from extremely acid to moderately acid in the solum and from very strongly acid to neutral in the substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 2 to 5, and chroma of 2 or 3. The texture is sandy loam, silt loam, loam, very fine sandy loam, or fine sandy loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 3 to 6. The textures are silt loam, loam, very fine sandy loam, fine sandy loam, or sandy loam or the gravelly analogs of those textures. Structure is weak, fine to medium, granular or subangular blocky. Consistence is very friable or friable.

The 2C horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 to 6. The texture ranges from silt loam to sandy loam and loamy sand or the very gravelly analogs of the textures within that range. It is single grain or massive. Consistence is firm to loose.

Varysburg Series

The Varysburg series consists of very deep, moderately well drained, gently sloping to steep soils on outwash terraces and lateral and recessional moraines. These soils formed in outwash dominated by material derived from sandstone, siltstone and shale, 20 to 35 inches deep over clayey lacustrine material. Slopes range from 3 to 35 percent.

The Varysburg soils are associated with Chenango, Hudson, Dunkirk, Rhinebeck, and Valois soils. They have less gravel in the substratum than Chenango and Valois soils, and both Chenango and Valois soils are not underlain with clayey material. They have more gravel in the subsoil than Hudson, Dunkirk or Rhinebeck soils. Also, they are better drained than Rhinebeck soils.

Typical pedon of Varysburg gravelly silt loam, 15 to 25 percent slopes; in the town of Dayton; south side of Van Etten Road, 200 feet east of NY Route 39 and Van Etten Road:

Ap—0 to 5 inches; dark grayish brown (10YR 4/2) gravelly silt loam; weak fine granular structure; friable; many fine roots; 15 percent rock fragments; moderately acid; abrupt smooth boundary.

BA—5 to 13 inches; yellowish brown (10YR 5/4) gravelly loam; weak fine and medium subangular blocky structure; friable; common fine roots; common dark grayish brown (10YR 4/2) worm channels; 20 percent rock fragments; moderately acid; clear wavy boundary.

B/E—13 to 22 inches; strong brown (7.5YR 5/6) gravelly silt loam; weak fine subangular blocky structure; friable; common fine roots; pale brown (10YR 6/3) material between peds; 30 percent rock fragments; strongly acid; clear wavy boundary.

Bt1—22 to 28 inches; yellowish brown (10YR 5/4) very gravelly loam; weak fine subangular blocky structure; friable; few fine roots; discontinuous clay on surfaces along pores; common medium distinct brown (10YR 5/3) and strong brown (7.5YR 5/8) masses of iron accumulation; 35 percent rock fragments; strongly acid; clear wavy boundary.

Bt2—28 to 33 inches; brown (10YR 4/3) very gravelly loam; weak fine subangular blocky structure; friable; discontinuous clay on surfaces along pores and on surfaces of gravel; 50 percent rock fragments; moderately acid; abrupt smooth boundary.

2Bt3—33 to 38 inches; olive brown (2.5Y 4/4) silty clay loam; moderate coarse prismatic parting to moderate medium subangular blocky structure; firm; common fine pores; distinct clay films on all faces of peds and on surfaces along pores; common medium distinct brown (10YR 5/3) masses of iron accumulation; 2 percent rock fragments; neutral; clear wavy boundary.

2Bt4—38 to 48 inches; olive brown (2.5YR 4/4) silty clay loam; moderate coarse prismatic parting to moderate coarse angular blocky structure; firm; distinct clay films on all faces of peds and on surfaces along pores; slightly effervescent, slightly alkaline; clear wavy boundary.

2C—48 to 72 inches; olive brown (2.5Y 4/4) silty clay; varved with silt and clay; firm; strongly effervescent, moderately alkaline.

The thickness of the solum ranges from 35 to 50 inches. The depth to clayey material ranges from 20 to 35 inches. The depth to carbonates ranges from 35 to 60 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 10 to 40 percent in the surface horizon, increasing with depth to as much as 60 percent in the upper part of the B horizon. There are few or no rock fragments in the 2B and 2C horizons. Reaction of the solum is strongly acid or moderately acid in the upper part and slightly acid to moderately alkaline in the lower part and 2C horizon.

The Ap horizon has hue of 7.5YR or 10YR, value of 3 to 5, and chroma of 2 or 3. The texture ranges from sandy loam to silt loam in the fine earth fraction.

The BA horizon has hue of 7.5YR or 10YR, value of 4 or 5 and chroma of 4 to 6. The textures range from sandy loam through silt loam in the fine earth fraction.

Structure is weak, fine and medium subangular blocky. Consistence is friable or very friable.

The B/E horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 to 6 in the B part; and value of 5 to 7, chroma of 2 or 3 in the E part. The texture is sandy loam, silt loam or loam in the fine earth fraction. Structure is weak or moderate, medium or fine, subangular blocky. Consistence is friable or firm.

The Bt horizon has hue of 7.5YR or 10YR, value of 3 or 5 and chroma of 2 or 4. The texture is sandy loam, loam or sandy clay loam in the fine earth fraction. Structure is weak or moderate, medium or fine, subangular blocky. Consistence is friable or firm.

The 2Bt horizon has hue of 7.5YR or 2.5Y, value of 4 or 5, and chroma of 2 or 4, and may have few or common redoximorphic features. The texture is silty clay loam or silty clay. Structure is moderate or strong, medium to very coarse, angular, or subangular blocky, or medium or coarse, prismatic. Consistence is firm or very firm.

The 2C horizon has colors that are similar to those of the 2Bt horizon. The texture is silty clay, silty clay loam, or clay, and is commonly varved with silt or silt loam.

Volusia Series

The Volusia series consist of very deep, somewhat poorly drained, nearly level to strongly sloping soils on broad divides of the dissected, glaciated upland plateau. These soils formed in firm basal till dominated by material derived from siltstone, sandstone and shale. Slopes range from 0 to 15 percent.

Volusia soils are in a drainage sequence that includes the moderately well drained Mardin soils and the poorly drained Chippewa soils. They are associated with Busti, Erie, Ashville, Fremont, Napoli, and Orpark soils. They have a fragipan that is lacking in Busti and Fremont soils. Volusia soils are deeper over bedrock than Orpark soils. They have lower reaction than Erie soils, and they are better drained than Ashville soils. They occur at lower elevations than Napoli soils.

Typical pedon of Volusia channery silt loam, 3 to 8 percent slopes; in the town of Freedom; 100 feet north of Cheeseman Road and 800 feet west of Cheeseman road and Maple Grove Road:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) channery silt loam; moderate medium subangular blocky structure; friable; common fine and medium roots; many fine and few medium pores; 15 percent rock fragments; very strongly acid; abrupt smooth boundary.

E—7 to 16 inches; light brownish gray (10YR 6/2) channery loam; weak medium to thin platy structure; friable; common fine roots; few coarse vesicular pores; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulations; 25 percent rock fragments; strongly acid; clear wavy boundary.

Bx—16 to 45 inches; brown (10YR 5/3) channery silt loam; massive within weak coarse prismatic structure; very firm, brittle; few fine roots between prisms; few vesicular pores, with few clay films on surfaces along pores; prisms separated by thin light brownish gray (10YR 6/2) wedges with yellowish brown (10YR 5/6) outer borders; common medium distinct yellowish brown (10YR 5/8) masses of iron accumulation and common medium faint grayish brown (2.5Y 5/2) iron depletions in the matrix; 30 percent rock fragments; strongly acid; clear smooth boundary.

C1—45 to 68 inches; brown (10YR 4/3)very channery silt loam; massive; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and light brownish gray (10YR 6/2) iron depletions in the matrix; 35 percent rock fragments; strongly acid, clear wavy boundary.

C2—68 to 72 inches; grayish brown (2.5Y 5/2) very gravelly loam; massive; firm; 45 percent rock fragments; strongly acid.

The thickness of the solum ranges from 40 to 72 inches. The depth to bedrock is more than 60 inches. Depth to the top of the fragipan ranges from 10 to 22 inches. The content of rock fragments ranges, by volume, from 5 to 30 percent above the fragipan and from 5 to 50 percent in the fragipan, and from 10 to 60 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the surface layer, very strongly acid to slightly acid in the subsurface and upper subsoil, strongly acid to slightly acid in the fragipan, and from strongly acid to slightly alkaline in the substratum.

The Ap horizon has hue of 10YR or 2.5Y, value of 3 to 5, and chroma of 2 or 3. The texture is loam or silt loam in the fine earth fraction.

The E horizon has hue of 10YR to 5Y, value of 4 to 6, and chroma of 1 or 2. The texture is loam or silt loam in the fine earth fraction. Structure is weak or moderate, fine or medium subangular blocky, or weak thin or medium platy. Consistence is friable or firm.

The Bx horizon has hue of 10YR to 5Y, value of 3 to 6, and chroma of 2 to 4. The texture is loam or silt loam in the fine earth fraction but ranges to clay loam or silty clay loam. Consistence ranges from firm to extremely firm.

The C horizon has colors and texture similar to those of the Bx horizon, except values range from 3 to 5. The material is massive or has plate like divisions. Consistence is firm or very firm.

Wakeville Series

The Wakeville series consist of very deep, somewhat poorly drained, nearly level soils on flood plains. These soils formed in deposits of recent silty alluvium. Slopes range from 0 to 3 percent.

Wakeville soils are in a drainage sequence that includes the well drained Hamlin soils, the moderately well drained Teel soils, and the poorly drained Wayland soils. Wakeville soils are associated with Unadilla, Scio, Holderton, and Chenango soils. They have less sand and gravel than Holderton soils. They are wetter than Unadilla and Scio soils, which are on the higher terraces. They are wetter and have less sand and gravel than Chenango soils.

Typical pedon of Wakeville silt loam; in the town of Hinsdale; near Oil Creek, 0.6 miles west of Allegany County Line:

Ap—0 to 10 inches; dark grayish brown (10YR 4/2) silt loam; light brownish gray (2.5Y 6/2) dry; moderate modern granular structure; friable; many fine roots; moderately acid; abrupt smooth boundary.

Bw—10 to 16 inches; light olive brown (2.5Y 5/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; many pores; common medium distinct gray (10YR 5/1) iron depletions; moderately acid; clear smooth boundary.

Bg1—16 to 34 inches; grayish brown (2.5Y 5/2) silt loam; weak medium subangular blocky structure; friable; few fine roots; common pores; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and common faint gray (10YR 5/1) iron depletions; moderately acid; gradual smooth boundary.

Bg2—34 to 43 inches; dark grayish brown (10YR 4/2) silt loam; weak medium subangular blocky structure; friable; wet, slightly sticky; common fine distinct brown (2.5YR 4/4) and yellowish brown (10YR 5/6) masses of iron accumulation; slightly acid; clear smooth boundary.

Cg—43 to 52 inches; grayish brown (2.5Y 5/2) to gray (10YR5/1) silt loam; massive; friable; wet, slightly sticky; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation; slightly acid; abrupt smooth boundary.

2Cg—52 to 72 inches; very dark grayish brown (10YR 3/2) very gravelly loamy sand; massive, some stratification; wet non-sticky; 45 percent rock fragments; slightly acid.

The thickness of the solum ranges from 24 to 45 inches. The content of rock fragments, by volume, commonly is less than 5 percent in the surface layer and subsoil and ranges up to 20 percent in the substratum to a depth of 40 inches and up to 45 percent below this depth. The depth to bedrock is more than 60 inches. Reaction ranges from medium acid to neutral to a depth of 40 inches and from moderately acid to slightly alkaline below this depth.

The Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. The texture is silt loam or very fine sandy loam.

The Bw horizon, if it occurs, has hue of 10YR or 2.5Y, value of 4 to 6, chroma of 3 to 6. The texture is silt loam or very fine sandy loam in the fine earth fraction. Structure is weak, fine to medium, subangular blocky or granular. Consistence is friable or very friable.

The Bg horizon has hue of 10YR or 2.5Y, value of 3 to 6, chroma of 1 or 2. The texture is silt loam or very fine sandy loam in the fine earth fraction. Structure is weak, fine to medium, subangular blocky or granular. Consistence is friable or very friable.

The Cg horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 1 to 4. The texture in the fine earth fraction is silt loam or very fine sandy loam to a depth of 40 inches and ranges from loam to loamy sand below this depth. The horizon is massive. Consistence ranges from very friable to firm.

The 2C horizon has hue of 10YR to 5Y, value of 3 to 6, and chroma of 1 to 4. The texture in the fine earth fraction ranges from loam to loamy sand. The horizon is massive or has plate like divisions. Consistence is very friable or friable.

Wallington Series

The Wallington series consists of very deep, somewhat poorly drained, nearly level soils on lacustrine plains or basins. These soils formed in lacustrine deposits that have a high content of silt and very fine sand. Slopes range from 0 to 3 percent.

The Wallington soils are in a drainage sequence that includes the moderately well drained Williamson soils. They are associated with Swormville, Getzville, Lamson, Canandaigua, and Tonawanda soils. Wallington soils have a fragipan that is not typical of Tonawanda soils or any of those associated soils. They are better drained than Lamson, Getzville, and Canandaigua soils. Wallington soils are not as sandy as Lamson soils, and have a lower content of clay than Canandaigua soils. They do not have the finer textured mantle that is typical of Swormville and Getzville soils.

Typical pedon of Wallington silt loam, 0 to 3 percent slopes; in the town of Machias; in cropland on the north side of Tingue Road, about 0.2 miles west of Hoppers Corners Road:

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

E—8 to 14 inches; light brownish gray (10YR 6/2) silt loam; weak medium platy structure; friable; common fine roots; many fine and medium distinct strong brown (7.5YR 5/6) masses of iron accumulation; strongly acid; abrupt irregular boundary.

Bx1—14 to 23 inches; brown (10YR 5/3) silt loam; weak very coarse prismatic structure, parting to weak platy structure; firm, brittle; few roots at top of prisms; coatings of light brownish gray (2.5Y 6/2) silt on prism faces; many medium distinct strong brown (7.5YR 5/6) masses of iron accumulation inside prisms; strongly acid; gradual smooth boundary.

Bx2—23 to 38 inches; brown (10YR 4/3) silt loam; very coarse prismatic structure, massive within; very firm, brittle; few medium pores; some pores coated with thin clay linings; coatings of gray (10YR 6/1) silt on prism faces; many medium distinct yellowish brown (10YR 5/6) masses of iron accumulation within prisms; strongly acid; clear smooth boundary.

C—38 to 72 inches; brown (10YR 5/3) silt loam; massive; firm; some very thin loamy very fine sand lenses; common fine faint gray (10YR 5/1) iron depletions; 5 percent rock fragments; moderately acid.

The thickness of the solum ranges from 30 to 60 inches. The depth to the top of the fragipan ranges from 12 to 24 inches. The depth to bedrock is more than 60 inches. The content of rock fragments, by volume, commonly is less than 3 percent in the solum, and up to 5 percent in the substratum. Reaction ranges from very strongly acid to moderately acid in the surface and subsurface layer, from very strongly acid to neutral in the fragipan and from moderately acid to neutral in the substratum.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 2 or 3. The texture is silt loam or very fine sandy loam.

The E horizon has hue of 7.5YR to 5Y, value of 5 or 6, and chroma of 1 to 3. The texture ranges from silt loam to loamy very fine sand in the fine earth fraction. The horizon is massive, or it has weak platy or subangular blocky structure. Consistence is friable or firm.

The Bx horizon has hue of 5YR to 5Y, value of 4 to 6, and chroma of 2 to 4. The texture is silt loam or very fine sandy loam in the fine earth fraction. Structure is weak or moderate, very coarse prismatic parting to weak platy, or the material within prisms is massive. Consistence is firm or very firm.

The C horizon has colors similar to those of the Bx horizon. The textures range from loamy very fine sand to silt loam in the fine earth fraction. Consistence is friable or firm.

Wayland Series

The Wayland series consists of very deep, poorly drained, nearly level soils that formed in recent alluvium along major streams and their tributaries. These soils are in the lowest positions of the flood plain, commonly in slack water areas farthest from the stream. Slopes range from 0 to 3 percent.

Wayland soils are in a drainage sequence that includes the somewhat poorly drained Wakeville soils, the moderately well drained Teel soils, and the well drained Hamlin soils. They are associated with Canandaigua, Halsey, Holderton and Middlebury soils. They are wetter than Holderton or Middlebury soils and contain more clay in the subsoil. They do not have the sand and gravel content that is typical of Halsey soils, and they are frequently flooded, unlike the silty Canandaigua soils.

Typical pedon of Wayland silt loam; in the town of Machias; in a pastured field southeast of intersection of Reynolds Road and Conrail Railroad:

A—0 to 9 inches; very dark gray (10YR 3/1) silt loam; very dark grayish brown (10YR 3/2) crushed; light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine roots; few fine faint dark brown (10YR 3/3) masses of iron accumulation; slightly acid; clear smooth boundary.

Bg—9 to 25 inches; dark gray (10YR 4/1) silty clay loam; weak medium subangular blocky structure; friable; slightly sticky; many fine roots in upper part; common medium distinct dark yellowish brown (10YR 4/4) masses of iron accumulation; slightly acid; gradual smooth boundary.

Cg1—25 to 51 inches; dark grayish brown (10YR 4/2) silt loam; massive; slightly sticky; common fine roots in upper part, few fine roots in lower part; common medium faint dark brown (10YR 3/3) masses of iron accumulation and gray (10YR 5/1) iron depletions; neutral; clear smooth boundary.

Cg2—51 to 72 inches; dark gray (10YR 4/1) silt loam; massive; slightly sticky; thin fine gravel lenses; 5 percent rock fragments; slightly alkaline, slightly effervescent.

The thickness of the solum ranges from 10 to 30 inches. The depth to bedrock is more than 60 inches. The content of rock fragments commonly is less than 2 percent throughout the profile. Reaction ranges from strongly acid to neutral in the solum, from strongly acid to moderately alkaline in the upper part of the substratum, and from moderately acid to moderately alkaline in the lower part of the substratum.

The A horizon has hue of 10YR or 2.5Y or is neutral in hue. It has value of 2 or 3 and chroma of 0 to 2. The texture is silt loam, fine sandy loam or silty clay loam.

The Bg horizon has hue of 7.5YR to 5Y, value of 3 to 6, and chroma of 0 to 2. The texture is silt loam or silty clay loam. Structure is weak or moderate, fine or medium, subangular blocky, or it is weak or moderate, coarse prismatic. Consistence is friable or firm.

The C horizon has similar colors and textures similar to those of the B horizon. The horizon is massive or has plate like divisions. Consistence is friable or firm.

Willdin Series

The Willdin series consist of very deep, moderately well drained, gently sloping to moderately steep soils on the upland plateau. These soils formed in firm glacial till derived from siltstone, sandstone and brittle shale at elevations above 1,800 feet. Slopes range from 3 to 25 percent.

Willdin soils are associated with Yorkshire, Napoli Franklinville, Ischua, Salamanca, and Valois soils. They have a dense fragipan that is not present in the Salamanca, Franklinville, Ischua, and Valois soils. They are deeper over bedrock than Ischua soils and are wetter than Franklinville and Valois soils. They do not have the clay accumulation in the subsoil that is typical of Yorkshire and Napoli soils and are more acid. Valois soils are commonly on landscapes at lower elevations.

Typical pedon of Willdin channery silt loam, 3 to 8 percent slopes; in the town of Ashford; 50 feet north of Ashford Hollow Road, 100 feet east of the junction of Ashford Hollow Road and Hebdon Road:

Ap—0 to 6 inches; dark brown (10YR 3/3) channery silt loam; moderate fine granular structure; friable; many fine and medium, and few large roots; 20 percent rock fragments; very strongly acid; abrupt smooth boundary.

Bw1—6 to 15 inches; yellowish brown (10YR 5/4) channery silt loam; moderate fine and medium subangular blocky structure; friable; many fine and medium roots; 20 percent rock fragments; very strongly acid; clear wavy boundary.

Bw2—15 to 22 inches; brown (10YR 5/3) channery silt loam; weak medium and coarse subangular blocky structure; friable; common fine roots; 20 percent rock fragments with few pebbles; very strongly acid; clear smooth boundary.

E—22 to 24 inches; pale brown (10YR 6/3) channery silt loam; weak coarse subangular blocky structure; friable; few fine roots; common medium prominent brownish yellow (10YR 6/8) masses of iron accumulation within the matrix; 25 percent rock fragments; very strongly acid; clear wavy boundary.

Bx—24 to 60 inches; dark grayish brown (10YR 4/2) very channery loam; strong very coarse prismatic structure parting to weak coarse subangular blocky; very firm, brittle; few fine roots along prism faces; common fine pores with few faint clay films along surfaces; light brownish gray (10YR 6/2) prism faces with yellowish brown (10YR 5/6) borders; common medium prominent brownish yellow (10YR 6/6) masses of iron accumulation within the matrix; 45 percent rock fragments; strongly acid.

C—60 to 72 inches; light olive brown (2.5Y 5/4) very channery silt loam; massive; firm; 45 percent rock fragments; moderately acid.

The thickness of the solum ranges from 38 to 75 inches. The depth to bedrock is more than 60 inches. The depth to the top of the fragipan ranges from 16 to 26 inches. The content of rock fragments, consisting mainly of channers and flagstones ranges, by volume, from 5 to 35 percent above the fragipan, from 15 to 50 percent in the fragipan, and from 15 to 60 percent in the substratum. Redoximorphic features are present beginning at a depth of 12 to 24 inches. Reaction ranges from very strongly acid to moderately acid in the Ap and Bw horizons, from very strongly acid to slightly acid in the E horizon and fragipan, and from strongly acid to slightly acid in the substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 3 or 4, and chroma of 2 to 4. The texture of the fine earth fraction is silt loam, silty clay loam, or loam.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 8. The texture of the fine earth fraction is silt loam, loam, or fine sandy loam. Structure is weak or moderate subangular blocky. Consistence is friable or very friable.

The E horizon has hue of 7.5YR to 5Y, value of 5 or 6, and chroma of 2 or 3. The texture of the fine earth fraction is silt loam, fine sandy loam, or loam. Structure is weak medium or coarse, platy or subangular blocky. Consistence is friable or firm.

The Bx horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 2 to 4. The texture of the fine earth fraction is silt loam or loam. Structure is coarse or very coarse prismatic with platy, blocky, or massive interiors. It has faint to prominent redoximorphic features. Consistence is firm or very firm, and is brittle.

The C horizon has colors and textures similar to those of the Bx horizon. The material is massive or has plate like divisions. Consistence is firm or very firm.

Williamson Series

The Williamson series consists of very deep, moderately well drained, nearly level to strongly sloping soils on lacustrine plains or basins. These soils formed in silty lacustrine deposits that have a high content of silt and very fine sand. Slopes range from 0 to 15 percent.

The Williamson soils are in a drainage sequence that includes the somewhat poorly drained Wallington soils. They are associated with Swormville, Unadilla, Scio, Elnora, Tonawanda and Canaseraga soils. Williamson soils have a fragipan that is not typical of Swormville, Unadilla, Scio, Elnora or Tonawanda soils. They are better drained than Swormville and Tonawanda soils, and are not so sandy as Elnora soils. They do not have the fine textured mantle that is typical of Swormville soils. They do not have the rock fragments in the substratum that is typical of Canaseraga soils.

Typical pedon of Williamson silt loam, 3 to 8 percent slopes; in the town of Ashford; 650 yards south of Riceville Road and McLaughlin Road, 350 yards west of McLaughlin Road:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) silt loam; weak fine and medium granular structure; very friable; many fine roots; moderately acid; clear smooth boundary.

Bw—8 to 14 inches; yellowish brown (10YR 5/4) silt loam; weak medium subangular blocky structure; friable; common fine roots; many fine pores; strongly acid; clear wavy boundary.

E—14 to 20 inches; pale brown (10YR 6/3) silt loam; weak medium platy structure; friable; few fine roots; common pores; common medium distinct strong brown (7.5YR 5/8) masses of iron accumulation; strongly acid; abrupt wavy boundary.

Bx—20 to 38 inches; dark yellowish brown (10YR 4/4) silt loam; moderate very coarse prismatic structure; very firm, brittle; few roots along upper prism faces; prisms separated by pale brown (10YR 6/3) silt with yellowish brown (10YR 5/6) outer borders; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and grayish brown (10YR 5/2) iron depletions within the matrix; strongly acid; clear smooth boundary.

C1—38 to 54 inches; brown (10YR 5/3) silt loam; weak medium and thick plate like divisions; firm; common medium distinct strong brown (7.5YR 5/6) masses of iron accumulation and grayish brown (2.5Y 5/2) iron depletions within the matrix; moderately acid; clear wavy boundary.

C2—54 to 72 inches; olive brown (2.5Y 4/3) silt loam with varves of very fine sandy loam; massive; firm; moderately acid.

The thickness of solum ranges from 35 to 60 inches. The depth to the top of the fragipan ranges from 15 to 24 inches. The depth to bedrock is more than 60 inches. The content of rock fragments ranges, by volume, from 0 to 5 percent throughout the profile. Reaction ranges from very strongly acid to moderately acid in the solum, and strongly acid to neutral in the substratum.

The Ap horizon has hue of 7.5YR to 2.5Y, value of 3 to 5, and chroma of 2 or 3. The texture is fine sandy loam to silt loam.

The Bw horizon has hue of 5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is very fine sandy loam or silt loam. Structure is very weak to moderate, granular, angular blocky, or subangular blocky. Consistence is friable or very friable.

The E horizon has hue of 5YR to 2.5Y, value of 5 to 7 and chroma of 2 to 4. It has few to many, distinct or prominent redoximorphic features. It is silt loam or very fine sandy loam. The horizon is massive, or has weak or moderate, thin or medium platy structure.

The Bx horizon has hues of 5YR to 2.5Y, values of 4 or 5, and chroma of 2 to 4. It has few or common, medium or coarse, faint to prominent redoximorphic features. The texture is silt loam or very fine sandy loam. Structure is weak or moderate, very coarse prismatic, and parts to platy structure in some pedons. Consistence is firm or very firm and brittle.

The C horizon has hue of 5YR to 2.5Y, value of 4 or 5, and chroma of 2 to 4. The texture is silt loam or very fine sandy loam and is commonly stratified. Some pedons have a texture of loamy very fine sand below depths of 40 inches. The C horizon is massive or has plate like divisions inherited from depositional layers.

Wiscoy Series

The Wiscoy series consists of very deep, somewhat poorly drained, gently sloping to strongly sloping soils on elevated lake plains, and on toeslopes of valley sides. These soils formed in a thin mantle of glacial till underlain with silty lacustrine deposits. They have a fragipan. Slopes range from 3 to 15 percent.

Wiscoy soils are in a drainage sequence that includes the moderately well drained Rushford soils. They are associated with Dalton, Erie, Volusia, Schuyler and Towerville soils. They have a fragipan that is lacking in the Schuyler soils, and are deeper to bedrock than Towerville soils. They do not have a mantle of silty material that is present in Dalton soils. They are underlain with silty lacustrine material that is lacking in Erie and Volusia soils.

Typical pedon of Wiscoy channery silt loam, 3 to 8 percent slopes; in the town of Yorkshire; 50 feet north of Gunbarrel Road, and 0.3 miles east of West Town line Road:

Ap—0 to 7 inches; very dark grayish brown (10YR 3/2) channery silt loam; moderate fine and medium granular structure; friable; many fine and common medium roots; 15 percent rock fragments; slightly acid; abrupt smooth boundary.

Eg—7 to 12 inches; grayish brown (10YR 5/2) silt loam; moderate medium subangular blocky structure; friable; common fine roots; common fine distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; 10 percent rock fragments; slightly acid; clear smooth boundary.

Bx1—12 to 22 inches; brown (10YR 5/3) channery silt loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; firm, brittle; few fine roots along prism faces; prism streaks are 1/4 inch wide and prisms are 6 to 10 inches apart with gray (10YR 5/1) interiors and strong brown (7.5YR 5/6) exterior borders; common fine and medium distinct grayish brown (2.5Y 5/2) iron depletions and common fine and medium prominent strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 15 percent rock fragments; neutral; clear smooth boundary.

Bx2—22 to 36 inches; grayish brown (10YR 5/2) channery silt loam; weak very coarse prismatic structure parting to moderate medium subangular blocky; very firm, brittle; prism faces are 1/4 inch wide and prisms are 14 inches apart with gray (10YR 5/1) interiors and strong brown (7.5YR 5/6) exterior borders; common medium distinct grayish brown (2.5Y 5/2) iron depletions and common medium prominent strong brown (7.5YR 5/8) masses of iron accumulation in the matrix; 20 percent rock fragments; neutral; abrupt smooth boundary.

2C1—36 to 47 inches; brown (10YR 5/3) silt loam; weak medium plate-like divisions; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation and few medium distinct grayish brown (2.5Y 5/2) iron depletions in the matrix; neutral; abrupt smooth boundary.

2C2—47 to 72 inches; dark grayish brown (10YR 4/2) silty clay loam; massive; firm; common medium distinct yellowish brown (10YR 5/6) masses of iron accumulation in the matrix; neutral.

The thickness of the solum ranges from 26 to 40 inches. The depth to bedrock is more than 60 inches. The thickness of the loamy mantle ranges from 20 to 40 inches. The content of rock fragments, consisting of mainly gravel and subrounded channers, ranges by volume, from 10 to 30 percent in the horizons above the lacustrine materials, and from 0 to 5 percent in the horizons within the lacustrine materials. Reaction ranges from very strongly acid to neutral throughout the profile.

The Ap horizon has a hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 or 3. The texture is loam or silt loam in the fine earth fraction.

The Eg horizon has a hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 0 to 2. The texture is loam or silt loam in the fine earth fraction. Structure is platy or blocky. Consistence is friable or firm. It has common or many, distinct or prominent redoximorphic feature.

The Bw or Bg horizon, if it occurs, has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is loam, silt loam or silty clay loam in the fine earth fraction. It has blocky structure. Consistence is friable or firm. It has common or many redoximorphic features.

The Bx horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is loam, silt loam or silty clay loam in the fine earth fraction.

Structure is coarse or very coarse prismatic with platy, blocky or massive interiors. Consistence is firm or very firm, and brittle.

The 2Bx horizon, if it occurs, has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 2 to 6. The texture is loam, silt loam, silty clay loam or silty clay. Consistence is firm or very firm.

The 2C horizon has hue of 7.5YR to 5Y, value of 3 to 5, and chroma of 1 to 4. The texture is loam, silt loam, silt, silty clay loam or silty clay. The horizon has plate-like divisions, or the material is massive. Consistence is firm.

Wyalusing Series

The Wyalusing series consists of very deep, poorly drained, nearly level soils that formed in recent alluvium deposits. The Wyalusing soils are along secondary streams in head waters of the watershed. Slopes range from 0 to 3 percent.

Wyalusing soils are in the lowest positions on the landscape and therefore receive a considerable amount of runoff from the adjacent soils. They are associated with Alden, Ashville, Halsey, Holderton, and Middlebury soils. Wyalusing soils are wetter than Holderton or Middlebury soils and contain more sand in the substratum. They lack the sand and gravel content of the Halsey soils, and Wyalusing soils are frequently flooded unlike the Alden and Ashville soils, which have formed in glacial till.

Typical pedon of Wyalusing silt loam, 0 to 3 percent slopes; in the town of Farmersville; from a stream bottom adjacent to state land parking area; about 1 mile southwest of hamlet of Farmersville along NY Route 98:

A—0 to 6 inches, very dark grayish brown (10YR 3/2) silt loam, light brownish gray (10YR 6/2) dry; moderate medium granular structure; friable; many fine and few medium roots; moderately acid; clear wavy boundary.

Bg1—6 to 18 inches, gray (10YR 5/1) silt loam; moderate medium subangular blocky structure; friable, wet slightly sticky; common fine and medium roots; common medium distinct brown (7.5YR 4/4) masses of iron accumulation; slightly acid; clear smooth boundary.

Bg2—18 to 22 inches; dark grayish brown (10YR 4/2) loam; weak medium subangular blocky structure; wet non-sticky; few fine roots; few medium distinct brown (7.5YR 4/4) masses of iron accumulation in the matrix; 10 percent rock fragments, consisting mainly of fine gravel; slightly acid; abrupt wavy boundary.

Bg3—22 to 27 inches, dark gray (10YR 4/1) gravelly fine sandy loam; weak fine subangular blocky structure; wet non-sticky; 20 percent rock fragments, consisting mainly of gravel; few fine faint brown (10YR 4/3) masses of iron accumulation; slightly acid; abrupt smooth boundary.

2C—27 to 72 inches, dark grayish brown (10YR 4/2) very gravelly loamy sand; massive, with some stratification; wet non-sticky; 50 percent rock fragments, consisting mainly of gravel; slightly acid.

The thickness of the solum and depth to contrasting material ranges from 24 to 36 inches. The depth to bedrock is more than 60 inches. The content of rock fragments, consisting mainly of gravel and cobbles, range by volume, from 0 to 20 percent in the solum and C horizon and from 0 to 70 percent in the 2C horizon. Reaction ranges from strongly acid to slightly acid throughout the profile.

The A horizon has hue of 2.5Y to 10YR, value of 3 to 6, and chroma of 1 or 2. The texture is silt loam, loam or fine sandy loam in the fine earth fraction.

The B horizon has hue of 2.5Y to 10YR, value of 4 to 6, and chroma of 1 or 2. It has many to common redoximorphic features. The texture is silt loam, loam or fine sandy loam in the fine earth fraction. Structure is weak or moderate subangular blocky or prismatic parting to weak, fine subangular blocky.

The C horizon has hue of 5GY to 10YR, value of 4 or 5, and chroma of 0 to 2. This horizon has high and low chroma redoximorphic features. The texture is fine sandy loam or loam in the fine earth fraction.

The 2C horizon has colors similar to those of the C horizon but the texture is loamy sand or sand in the fine earth fraction.

Yorkshire Series

The Yorkshire series consists of very deep, moderately well drained, gently sloping to moderately steep soils on till plains and upland plateau at elevations above 1,800 feet. These soils formed in glacial till derived mainly from siltstone, sandstone, and shale. Slopes range from 3 to 25 percent.

The Yorkshire soils are in a drainage sequence that includes the somewhat poorly drained Napoli soils. They are associated with Almond, Ischua, Gretor, Salamanca, and Willdin soils. They are deeper to bedrock than Ischua and Gretor soils. They have a fragipan that is lacking in Almond and Salamanca soils. They have more clay accumulation in the subsoil than Willdin soils and are not as acid.

Typical pedon of Yorkshire channery silt loam, 8 to 15 percent slope; in the town of Ischua; in a cropped field 50 feet east of Union Hill Road, about 200 feet south of Yankee Hill Road:

Ap—0 to 8 inches; dark grayish brown (10YR 4/2) channery silt loam; moderate fine and medium granular structure; very friable; many fine roots; 20 percent rock fragments; moderately acid; abrupt smooth boundary.

Bw1—8 to 13 inches; yellowish brown (10YR 5/6) channery silt loam; weak fine and medium subangular blocky structure; very friable; common fine roots; 20 percent rock fragments; strongly acid; clear wavy boundary.

Bw2—13 to 17 inches; yellowish brown (10YR 5/4) channery silt loam; weak medium subangular blocky structure; friable; few fine roots; common medium distinct grayish brown (2.5Y 5/2) iron depletions and brown (7.5YR 4/4) masses of iron accumulation in the matrix; 20 percent rock fragments; strongly acid; clear wavy boundary.

E—17 to 19 inches; brown (10YR 5/3) channery loam; weak thin platy structure; friable; common medium faint grayish brown (10YR 5/2) iron depletions in the matrix; 15 percent rock fragments; strongly acid; abrupt irregular boundary.

Btx1—19 to 31 inches; olive brown (2.5Y 4/4) channery silt loam; moderate very coarse prismatic structure that parts to weak medium subangular blocky; firm, brittle; prisms are 16 to 28 inches across; gray (10YR 5/1) faces of prisms and brown (7.5YR 4/4) borders; streaks are 1/4 inch to 1-1/2 inches wide; common fine brown (10YR 4/3) clay films on all faces of peds and on surfaces along pores; distinct very dark gray (10YR 3/1) manganese concretions; common medium distinct grayish brown (10YR 5/2) iron depletions and strong brown (7.5YR 5/6) masses of iron accumulation in the matrix; 25 percent rock fragments; slightly acid; clear wavy boundary.

Btx2—31 to 56 inches; olive brown (2.5Y 4/4) channery silty clay loam; moderate very coarse prismatic structure that parts to weak medium subangular blocky; firm, brittle; prism faces are gray (10YR 5/1) with brown (7.5YR 4/4) borders; common fine brown (10YR 4/3) clay films on all faces of peds and brown (10YR 5/3) clay films on surfaces along tubular pores; distinct very dark gray (10YR 3/1) manganese concretions; common medium distinct yellowish brown (10YR 5/4) masses of iron accumulation and dark grayish brown (10YR 4/2) iron depletions in the matrix; 20 percent rock fragments; slightly acid; clear wavy boundary.

C—56 to 72 inches; olive brown (2.5Y 4/4) channery silt loam; massive; firm; few fine faint grayish brown (10YR 5/2) clay films on surfaces along pores; common medium faint yellowish brown (10YR 5/4) masses of iron accumulation in the matrix; 30 percent rock fragments; moderately acid.

The thickness of the solum ranges from 30 to 60 inches. The depth to bedrock is more than 60 inches. The depth to the top of the fragipan ranges from 16 to 30 inches. The content of rock fragments, consisting mainly of channers and flagstones, ranges, by volume, from 5 to 35 percent in the surface layer and upper part of the subsoil, from 15 to 40 percent in the lower part of the subsoil, and from 20 to 60 percent in the substratum. Reaction ranges from very strongly acid to slightly acid in the surface layer, from very strongly acid to moderately acid in the Bw and E horizons, from very strongly acid to slightly acid in the fragipan, and from strongly acid to neutral in the substratum.

The Ap horizon has hue of 10YR or 7.5YR, value of 3 or 4, and chroma of 1 to 4. The texture is silt loam or silty clay loam in the fine earth fraction.

The Bw horizon has hue of 7.5YR to 2.5Y, value of 4 to 6, and chroma of 3 to 6. The texture is silt loam, loam or silty clay loam in the fine earth fraction. Structure is weak or moderate subangular blocky or granular. Consistence is very friable or friable.

The E horizon has hue of 7.5YR to 2.5Y, value of 5 or 6, and chroma of 2 to 4. The texture is silt loam or loam in the fine earth fraction. Structure is weak or moderate, subangular blocky or platy structure. Consistence is very friable or friable.

The Btx horizon has hue of 7.5YR to 5Y, value of 4 to 6, and chroma of 3 to 5. It has low and high chroma redoximorphic features in the upper 10 inches of the horizon. The texture is silt loam, loam, silty clay loam or clay loam in the fine earth fraction. Structure is prismatic, blocky or platy. Consistence is firm or very firm, and brittle.

The C horizon has hue of 5YR to 5Y, value of 3 to 6, and chroma of 2 to 6. The texture is loam, silt loam, silty clay loam or clay loam in the fine earth fraction. This horizon is massive or has plate- like divisions. Consistence is firm or very firm.

Formation of the Soils

The first part of this section describes the factors of soil formation and relates them to the soils in the survey area. The second part defines the processes of horizon development as they relate to soil formation in the area.

Factors of Soil Formation

Soils are the product of weathering and other physical or chemical processes that act on parent material. The properties of a soil at a given point on the earth's surface depend on a combination of several factors of soil formation: parent material, relief, climate, plant and animal life, and time. The relative influence of each of these factors differs from place to place, and each factor modifies the effect of the others. For example, the impact of climate over a given area is tempered by the nature of the relief or of the parent material. In many areas the influence of a single factor is dominant.

Parent Material

Parent material is the unconsolidated earthy material in which soils form. It influences the physical, chemical, and mineralogical composition of the soils. It also influences the rate at which soil-forming processes take place.

Most of the soils in Cattaraugus County formed in glacial deposits. Glacial till is the most extensive type of parent material in the survey area. Less extensive are deposits of glacial outwash, alluvium, lacustrine material, and organic material (figs. 19 and 20). A small number of unglaciated soils formed in residuum, of material weathered from the underlying interbedded shale, siltstone, and sandstone.

Table 26 shows the relationship between parent material, landscape position, and drainage class of the soils in Cattaraugus County.

Soils that formed in glacial till exhibit a wide range of characteristics as a result of the heterogeneous nature of the till. Some soils that formed in very deep glacial till, such as Mardin and Volusia soils, have a dense substratum. Some soils that formed in very deep, coarser textured till, such as Cattaraugus and Busti soils, do not have a dense layer. In some places the glacial till is moderately deep or shallow over bedrock. Hornell soils are moderately deep over shale and siltstone. Towerville and Orpark soils are moderately deep over interbedded siltstone, shale, and sandstone. Some areas have bedrock exposed at the surface.

As the glacial ice melted, large quantities of meltwater transported and sorted soil material and rock debris. This material, referred to as glacial outwash, was redeposited in layers of sand and gravel on outwash plains, kames, eskers, and valley terraces. The coarse textured Chenango and Colonie soils are examples of soils that formed in this material. Beach ridges along the borders of former glacial lakes were formed as the result of sorting and depositing of soil particles by waves. Chenango soils formed in these medium to coarse textured deposits.

In more recent times, overflowing streams have deposited alluvial material on the flood plains. This material tends to be variable in texture. Examples of soils that

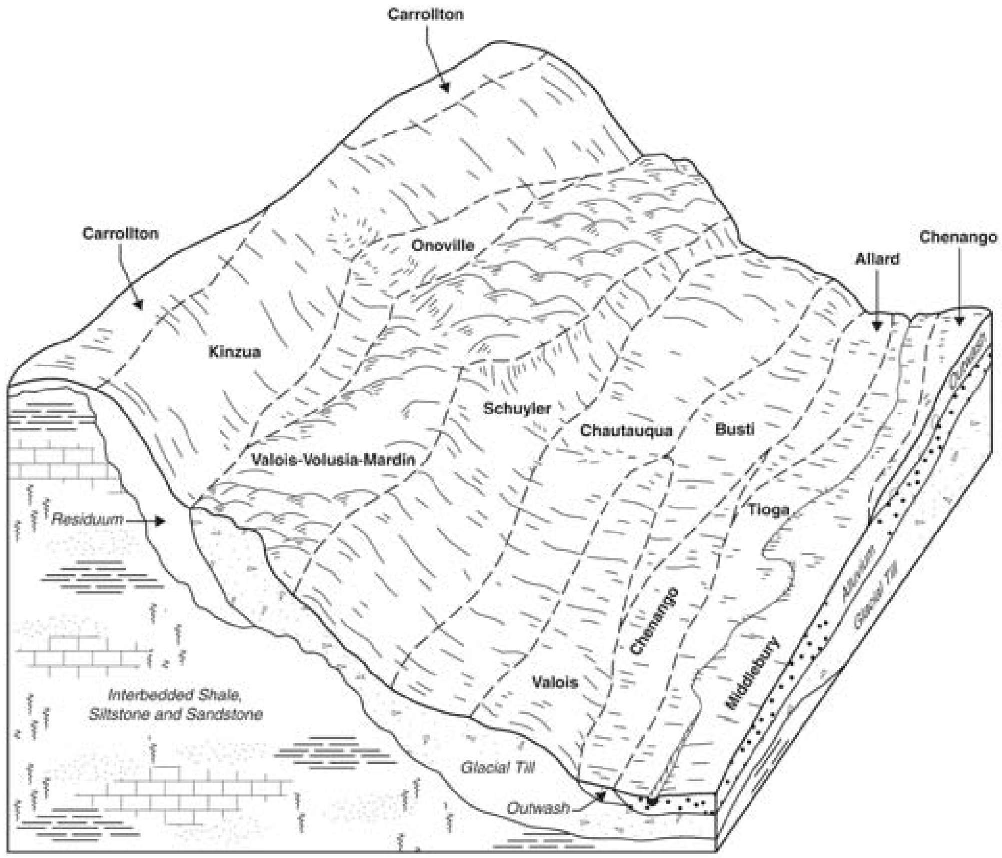

Figure 19.—Representative landscape showing soils that formed in residual material, glacial till, glacial outwash, or alluvium.

formed in this material are Hamlin soils, which formed in moderately fine textured alluvium, and Tioga soils, which formed in coarse textured material.

At one time, many of the larger valleys and the lake plain area in the northwestern part of Cattaraugus County contained glacial lakes in which meltwater was trapped. The bulk of the stone-free sediment that was deposited from this meltwater was clayey or silty lacustrine material. Rhinebeck, Niagara, and Canandaigua soils formed in these fine textured or medium textured deposits.

An area a few square miles in size at elevations between 1,800 and 2,100 feet in the southwest corner of the county is mantled with unglaciated material. This material weathered from the underlying interbedded shale, siltstone, and sandstone. Ivory and Onoville soils formed in the mantle of unglaciated material.

Relief

The shape of the land surface, the slope, and the position of the land surface in relation to the water table have had a great influence on the formation of the soils in the survey area. Soils that formed in convex positions, where little or no runoff accumulates, commonly are well drained and do not have gray mottles in the subsoil. Valois and Chadakoin soils are examples. In the level or slightly depressional areas, the water table usually is closer to the surface for extended periods. The wetness results in the formation of gray mottles close to the surface and commonly in the accumulation of sediment at the surface. Ashville soils are an example.

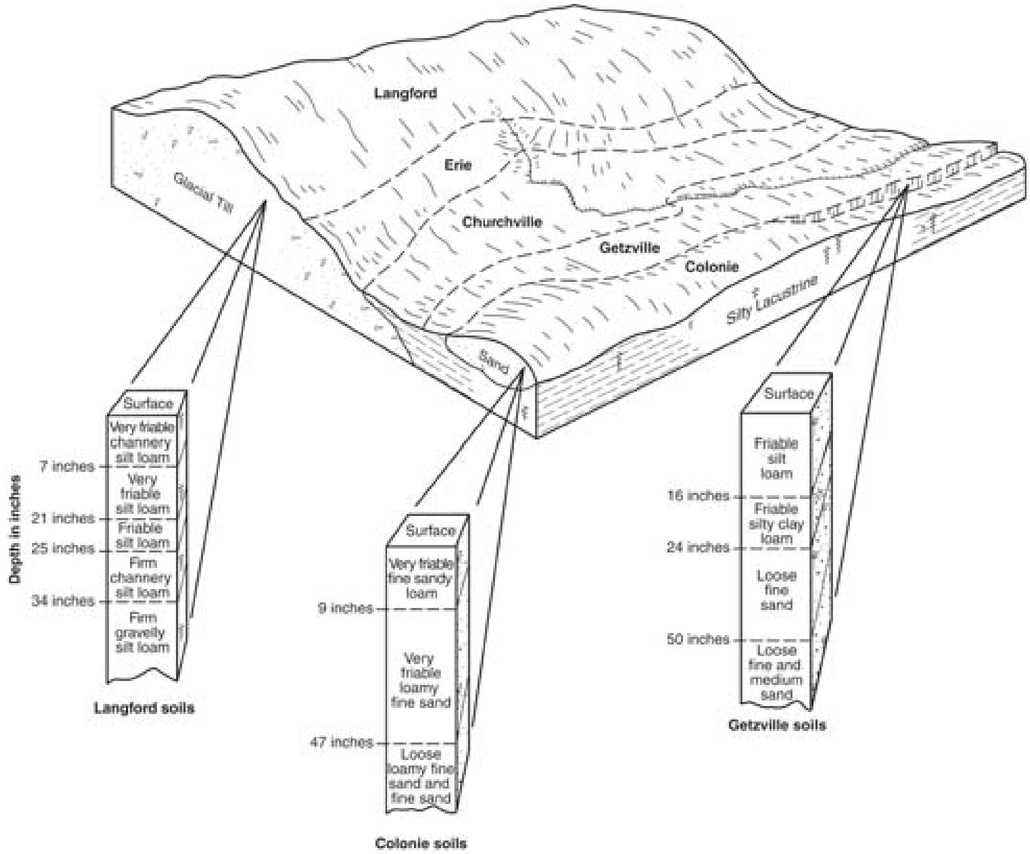

Figure 20.—Representative landscape showing the relationship of some important soils and their parent material. The exaggerated schematics represent some typical soil profiles.

Climate

Climate is one of the most influential soil-forming factors. It determines to a large degree the kind of weathering processes that occur. It also affects the growth and kind of vegetation and the leaching and translocation of weathered material.

Cattaraugus County has a humid, temperate climate that tends to promote the development of moderately weathered, leached soils. More detailed and specific data on the climate of Cattaraugus County is provided in the section "General Nature of the County."

Plant and Animal Life

All living organisms, including plants, animals, bacteria, and fungi, influence soil formation. Vegetation generally is responsible for the amount of organic matter and nutrients in the soil and for the color and structure of the surface layer. Earthworms and burrowing animals help to keep the soil porous and more permeable to air and water. Their waste products cause the aggregation of soil particles and improve soil structure. Bacteria and fungi decompose vegetation, which results in the release of nutrients.

The original vegetation in the survey area was native forest consisting of northern hardwoods and pines. The loss of nutrients through leaching is slow under hardwoods because the trees take up large quantities of nutrients and return much of them to the surface each year as leaf litter. Conifers, such as pines, do not use large amounts of nutrients; therefore, leaching is more rapid under them than it is under hardwoods.

In many of the soils on uplands, the rooting depth is shallow and the trees are susceptible to windthrow. As a result, the soil materials have been mix

Human activity, such as the clearing of trees and the cultivating of land, also has influenced formation of the soils. Nutrients that have been added as fertilizer are applied, plowing has mixed some soil horizons, and erosion has been accelerated in many areas.

Time

The degree of profile development reflects not only the age of a soil but also the influence of other factors. In geological terms, the deposits in which the soils in the survey area formed are relatively young, having been deposited when the last glacier receded about 10,000 to 15,000 years ago.

The soils have not all reached the same stage of soil profile development, because the other soil-forming factors also influence the rate of soil profile development. Since the time factor is constant within the county, differences in appearance and in the depth of the weathering have been mostly influenced by differences in parent material.

An immature soil is one that has not had enough time to develop distinct horizons. Fluvaquents are a good example. These soils formed in recent alluvium that is regularly being flooded and receiving more deposits of sediment. Because the time in which soil development can take place is constantly being interrupted, only thin or irregular soil profiles have developed.

Processes of Soil Formation

The soil-forming processes result in the development of distinct layers, or soil horizons. These horizons can be viewed in a vertical cut of soil, known as a soil profile. The soil profile extends from the surface downward into material that is little altered by the soil-forming processes. Most soils contain three major horizons, called A, B, and C horizons.

Several processes are involved in the formation of soil horizons. These processes include the accumulation of organic material, the leaching of soluble salts and minerals, the translocation of clay minerals, the reduction and transfer of iron, and the formation of dense, compact layers in the subsoil (Grossman, Carlisle; 1969).

The accumulation of organic matter takes place as plant residue decomposes. This process darkens the surface layer and helps to form an A horizon. It takes a long time to replace this organic matter once it has been lost. The organic matter content of the surface layer of the soils in the survey area averages about 5 percent.

For soils to develop a distinct subsoil, some of the lime and other soluble salts must be leached before other soil processes, such as the translocation of clay minerals, can take place. Factors that affect the leaching include the kinds of salts originally present, the rate and depth of percolation, and the texture of the soil.

One of the more important processes of horizon development in some of the soils is the translocation of silicate clay mineral. The amount of clay minerals in a soil is inherent in the parent material, but the content of clay varies from one soil horizon to another. Clay particles are transported (eluviated) downward from the A horizon and redeposited (illuviated) in the B horizon as clay films on the faces of peds, as linings along pores and root channels, and as coatings on some coarse fragments. Darien soils are an example of soils in which the content of clay is higher in the B horizon than in the A horizon because of translocation. In some soils an E horizon has formed below the A horizon as a result of considerable eluviation of clay minerals to the B horizon.

The reduction and transfer of iron compounds occur mainly in the wetter, more poorly drained soils. This process is known as gleying. In poorly drained and very poorly drained soils, such as those of the Alden series, the grayish color of the subsoil indicates that the reduction of iron has taken place. In moderately well drained and somewhat poorly drained soils, such as those of the Chautauqua and Busti series, yellowish brown and reddish brown mottles indicate the segregation of iron compounds. The presence of a bright-colored, unmottled subsoil indicates that the soils are well drained and that no reduction or transfer of iron has taken place. Valois soils, for example, are well drained and do not have mottles in the subsoil.

In some of the soils in Cattaraugus County, a distinct fragipan has developed in the subsoil. The fragipan is very firm and brittle when moist and is very hard when dry. Its swelling and shrinking in alternating wet and dry periods may result in the dense packing of soil particles, the low pore space, and the gross polygonal pattern of vertical cracks that are characteristic of most fragipans (Grossman, Carlisle; 1969). Clay, silica, and oxides of aluminum are the cementing agents that cause brittleness and hardness. Erie, Langford, Mardin, Onoville and Volusia soils have a well expressed fragipan.

Many well drained and moderately well drained soils in the county, such as Chenango and Scio soils, have a strong brown, yellowish brown, or reddish brown subsoil. These colors are mainly caused by thin coatings of iron oxides on the sand and silt particles. The subsoil commonly has subangular blocky structure but contains little or no clay translocated from the surface layer.

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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.

Alkali (sodic) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Alluvial fan. The fanlike deposit of a stream where it issues from a gorge upon a plain or of a tributary stream near or at its junction with its main stream.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

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.

Association, soil. A group of soils or miscellaneous areas geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

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. In most cases the capacity was calculated by using the average value within a range for each horizon in a 40-inch profile, or to a limiting layer, and is expressed as:

Very low	0 to 2.4
Low	2.4 to 3.2
Moderate	3.2 to 5.2
High	greater than 5.2.

Backslope. The position that forms the steepest and generally linear, middle portion of a hillslope. In profile, backslopes are commonly bounded by a convex shoulder above and a concave footslope below.

Basal till. Compact glacial till deposited beneath the ice.

Base saturation. The degree to which material having cation-exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, and K), expressed as a percentage of the total cation-exchange capacity.

Base slope. A geomorphic component of hills consisting of the concave to linear perpendicular to the contour) slope that, regardless of the lateral shape, (forms an apron or wedge at the bottom of a hillside dominated by colluvium and slope-wash sediments (for example, slope alluvium).

Bedding planes. Fine strata, less than 5 millimeters thick, in unconsolidated alluvial, eolian, lacustrine, or marine sediment.

Bedding system. A drainage system made by plowing, grading, or otherwise shaping the surface of a flat field. It consists of a series of low ridges separated by shallow, parallel dead furrows.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

Bedrock-controlled topography. A landscape where the configuration and relief of the landforms are determined or strongly influenced by the underlying bedrock.

Bench terrace. A raised, level or nearly level strip of earth constructed on or nearly on a contour, supported by a barrier of rocks or similar material, and designed to make the soil suitable for tillage and to prevent accelerated erosion.

Bisequum. Two sequences of soil horizons, each of which consists of an illuvial horizon and the overlying eluvial horizons.

Bottom land. The normal flood plain of a stream, subject to flooding.

Boulders. Rock fragments larger than 2 feet (60 centimeters) in diameter.

Breaks. The steep and very steep broken land at the border of an upland summit that is dissected by ravines.

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.

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.

Cement rock. Shaly limestone used in the manufacture of cement.

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.

Claypan. A slowly permeable soil horizon that contains much more clay than the horizons above it. A claypan is commonly hard when dry and plastic or stiff when wet.

Climax plant community. The stabilized plant community on a particular site. The plant cover reproduces itself and does not change so long as the environment remains the same.

Coarse textured soil. Sand or loamy sand. Cobble (or cobblestone). A rounded or partly rounded fragment of rock 3 to 10 inches (7.6 to 25 centimeters) in diameter.

Cobbly soil material. Material that has 15 to 35 percent, by volume, rounded or partially rounded rock fragments 3 to 10 inches (7.6 to 25 centimeters) in diameter. Very cobbly soil material has 35 to 60 percent of these rock fragments, and extremely cobbly soil material has more than 60 percent.

COLE (coefficient of linear extensibility). See Linear extensibility.

Colluvium. 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.

Congeliturbate. Soil material disturbed by frost action.

Conglomerate. A coarse grained, clastic rock composed of rounded or subangular rock fragments more than 2 millimeters in diameter. It commonly has a matrix of sand and finer textured material. Conglomerate is the consolidated equivalent of gravel.

Conservation cropping system. Growing crops in combination with needed cultural and management practices. In a good conservation cropping system, the soil-improving crops and practices more than offset the effects of the soil-depleting crops and practices. Cropping systems are needed on all tilled soils. Soil-improving practices in a conservation cropping system include the use of rotations that contain grasses and legumes and the return of crop residue to the soil. Other practices include the use of green manure crops of grasses and legumes, proper tillage, adequate fertilization, and weed and pest control.

Conservation tillage. A tillage system that does not invert the soil and that leaves a protective amount of crop residue on the surface throughout the year.

Consistence, soil. Refers to the degree of cohesion and adhesion of soil material and its resistance to deformation when ruptured. Consistence includes resistance of soil material to rupture and to penetration; plasticity, toughness, and stickiness of puddled soil material; and the manner in which the soil material behaves when subject to compression. Terms describing consistence are defined in the “Soil Survey Manual.”

Contour stripcropping. Growing crops in strips that follow the contour. Strips of grass or close-growing crops are alternated with strips of clean-tilled crops or summer fallow.

Control section. The part of the soil on which classification is based. The thickness varies among different kinds of soil, but for many it is that part of the soil profile between depths of 10 inches and 40 or 80 inches.

Coprogenous earth (sedimentary peat). 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.

Cropping system. Growing crops according to a planned system of rotation and management practices.

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.

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.

Deferred grazing. Postponing grazing or resting grazing land for a prescribed period.

Dense layer (in tables). A very firm, massive layer that has a bulk density of more than 1.8 grams per cubic centimeter. Such a layer affects the ease of digging and can affect filling and compacting.

Depth, soil. Generally, the thickness of the soil over bedrock. Very deep soils are more than 60 inches deep over bedrock; deep soils, 40 to 60 inches; moderately deep, 20 to 40 inches; shallow, 10 to 20 inches; and very shallow, less than 10 inches.

Diversion (or diversion terrace). A ridge of earth, generally a terrace, built to protect downslope areas by diverting runoff from its natural course.

Drainage class (natural). Refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the “Soil Survey Manual.”

Drainage, surface. Runoff, or surface flow of water, from an area.

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.

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.

Episaturation. A type of saturation indicating a perched water table in a soil in which saturated layers are underlain by one or more unsaturated layers within 2 meters of the surface.

Erosion. The wearing away of the land surface by water, wind, ice, or other geologic agents and by such processes as gravitational creep.

Erosion (geologic). Erosion caused by geologic processes acting over long geologic periods and resulting in the wearing away of mountains and the building up of such landscape features as flood plains and coastal plains. Synonym: natural erosion.

Erosion (accelerated). Erosion much more rapid than geologic erosion, mainly as a result of human or animal activities or of a catastrophe in nature, such as a fire, that exposes the surface.

Escarpment. A relatively continuous and steep slope or cliff breaking the general continuity of more gently sloping land surfaces and resulting from erosion or faulting. Synonym: scarp.

Esker. A narrow, winding ridge of stratified gravelly and sandy drift deposited by a stream flowing in a tunnel beneath a glacier.

Fallow. Cropland left idle in order to restore productivity through accumulation of moisture. Summer fallow is common in regions of limited rainfall where cereal grain is grown. The soil is tilled for at least one growing season for weed control and decomposition of plant residue.

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.

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.

Fluvial. Of or pertaining to rivers; produced by river action, as a fluvial plain.

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.

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.

Hardpan. A hardened or cemented soil horizon, or layer. The soil material is sandy, loamy, or clayey and is cemented by iron oxide, silica, calcium carbonate, or other substance.

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.

Hemic soil material (mucky peat). Organic soil material intermediate in degree of decomposition between the less decomposed fibric material and the more decomposed sapric material.

High-residue crops. Such crops as small grain and corn used for grain. If properly managed, residue from these crops can be used to control erosion until the next crop in the rotation is established. These crops return large amounts of organic matter to the soil.

Horizon, soil. A layer of soil, approximately parallel to the surface, having distinct characteristics produced by soil-forming processes. In the identification of soil horizons, an uppercase letter represents the major horizons. Numbers or lowercase letters that follow represent subdivisions of the major horizons. An explanation of the subdivisions is given in the “Soil Survey Manual.” The major horizons of mineral soil are as follows:

O horizon. An organic layer of fresh and decaying plant residue.

A horizon. The mineral horizon at or near the surface in which an accumulation of humified organic matter is mixed with the mineral material. Also, a plowed surface horizon, most of which was originally part of a B horizon.

E horizon. The mineral horizon in which the main feature is loss of silicate clay, iron, aluminum, or some combination of these.

B horizon. The mineral horizon below an A horizon. The B horizon is in part a layer of transition from the overlying A to the underlying C horizon. The B horizon also has distinctive characteristics, such as (1) accumulation of clay, sesquioxides, humus, or a combination of these; (2) prismatic or blocky structure; (3) redder or browner colors than those in the A horizon; or (4) a combination of these.

C horizon. The mineral horizon or layer, excluding indurated bedrock, that is little affected by soil-forming processes and does not have the properties typical of the overlying soil material. The material of a C horizon may be either like or unlike that in which the solum formed. If the material is known to differ from that in the solum, an Arabic numeral, commonly a 2, precedes the letter C.

Cr horizon. Soft, consolidated bedrock beneath the soil.

R layer. Consolidated bedrock beneath the soil. The bedrock commonly underlies a C horizon, but it can be directly below an A or a B horizon.

Humus. The well decomposed, more or less stable part of the organic matter in mineral soils.

Hydrologic soil groups. Refers to soils grouped according to their runoff potential. The soil properties that influence this potential are those that affect the minimum rate of water infiltration on a bare soil during periods after prolonged wetting when the soil is not frozen. These properties are depth to a seasonal high water table, the infiltration rate and permeability after prolonged wetting, and depth to a very slowly permeable layer. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff.

Igneous rock. Rock formed by solidification from a molten or partially molten state. Major varieties include plutonic and volcanic rock. Examples are andesite, basalt, and granite.

Illuviation. The movement of soil material from one horizon to another in the soil profile. Generally, material is removed from an upper horizon and deposited in a lower horizon.

Impervious soil. A soil through which water, air, or roots penetrate slowly or not at all. No soil is absolutely impervious to air and water all the time.

Infiltration. The downward entry of water into the immediate surface of soil or other material, as contrasted with percolation, which is movement of water through soil layers or material.

Infiltration capacity. The maximum rate at which water can infiltrate into 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

Intermittent stream. A stream, or reach of a stream, that flows for prolonged periods only when it receives ground-water discharge or long, continued contributions from melting snow or other surface and shallow subsurface sources.

Iron 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.

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.

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-residue crops. Such crops as corn used for silage, peas, beans, and potatoes. Residue from these crops is not adequate to control erosion until the next crop in the rotation is established. These crops return little organic matter to the soil.

Low strength. The soil is not strong enough to support loads.

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.)

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.

Natric horizon. A special kind of argillic horizon that contains enough exchangeable sodium to have an adverse effect on the physical condition of the subsoil.

Neutral soil. A soil having a pH value of 6.6 to 7.3. (See Reaction, soil.)

Nodules. 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.

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.

Pan. A compact, dense layer in a soil that impedes the movement of water and the growth of roots. For example, hardpan, fragipan, claypan, plowpan, and traffic pan.

Parent material. The unconsolidated organic and mineral material in which soil forms.

Peat. Unconsolidated material, largely undecomposed organic matter, that has accumulated under excess moisture. (See Fibric soil material.)

Ped. An individual natural soil aggregate, such as a granule, a prism, or a block.

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.

Permafrost. Layers of soil, or even bedrock, occurring in arctic or subarctic regions, in which a temperature below freezing has existed continuously for a long time.

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

Phase, soil. A subdivision of a soil series based on features that affect its use and management, such as slope, stoniness, and flooding.

pH value. A numerical designation of acidity and alkalinity in soil. (See Reaction, soil.)

Piping (in tables). Formation of subsurface tunnels or pipelike cavities by water moving through the soil.

Plasticity index. The numerical difference between the liquid limit and the plastic limit; the range of moisture content within which the soil remains plastic.

Plastic limit. The moisture content at which a soil changes from semisolid to plastic.

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.

Plowpan. A compacted layer formed in the soil directly below the plowed layer.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only lightly by compaction.

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.

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.

Red beds. Sedimentary strata that are mainly red and are made up largely of sandstone and shale.

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.

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.

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.

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.

Silica-sesquioxide ratio. The ratio of the number of molecules of silica to the number of molecules of alumina and iron oxide. The more highly weathered soils or their clay fractions in warm-temperate, humid regions, and especially those in the tropics, generally have a low ratio.

Silt. As a soil separate, individual mineral particles that range in diameter from the upper limit of clay (0.002 millimeter) to the lower limit of very fine sand (0.05 millimeter). As a soil textural class, soil that is 80 percent or more silt and less than 12 percent clay.

Siltstone. 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.

Site index. A designation of the quality of a forest site based on the height of the dominant stand at an arbitrarily chosen age. For example, if the average height attained by dominant and codominant trees in a fully stocked stand at the age of 50 years is 75 feet, the site index is 75.

Slickensides. Polished and grooved surfaces produced by one mass sliding past another. In soils, slickensides may occur at the bases of slip surfaces on the steeper slopes; on faces of blocks, prisms, and columns; and in swelling clayey soils, where there is marked change in moisture content.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance. In this survey, classes for simple slopes are as follows:

Nearly level	0 to 3 percent
Gently sloping	3 to 8 percent
Strongly sloping	8 to 15 percent
Rolling	3 to 15 percent
Moderately steep	15 to 25 percent
Steep	25 to 35 percent
Very steep	35 percent and higher

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.

Sodic (alkali) soil. A soil having so high a degree of alkalinity (pH 8.5 or higher) or so high a percentage of exchangeable sodium (15 percent or more of the total exchangeable bases), or both, that plant growth is restricted.

Sodicity. The degree to which a soil is affected by exchangeable sodium. Sodicity is expressed as a sodium adsorption ratio (SAR) of a saturation extract, or the ratio of Na+ to Ca++ + Mg++. The degrees of sodicity and their respective ratios are:

Slight	less than 13:1
Moderate	13-30:1
Strong	more than 30:1

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 over periods of time.

Soil separates. Mineral particles less than 2 millimeters in equivalent diameter and ranging between specified size limits. The names and sizes, in millimeters, of separates recognized in the United States are as follows:

Very coarse sand	2.0 to 1.0
Coarse sand	1.0 to 0.5
Medium sand	0.5 to 0.25
Fine sand	0.25 to 0.10
Very fine sand	0.10 to 0.05
Silt	0.05 to 0.002
Clay	less than 0.002

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the material below the solum. The living roots and plant and animal activities are largely confined to the solum.

Stone line. A concentration of coarse fragments in a soil. Generally, it is indicative of an old weathered surface. In a cross section, the line may be one fragment or more thick. It generally overlies material that weathered in place and is overlain by recent sediment of variable thickness.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter if rounded or 15 to 24 inches (38 to 60 centimeters) in length if flat.

Stony. Refers to a soil containing stones in numbers that interfere with or prevent tillage.

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.

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

Subsoiling. Tilling a soil below normal plow depth, ordinarily to shatter a hardpan or claypan.

Substratum. The part of the soil below the solum.

Subsurface layer. Any surface soil horizon (A, E, AB, or EB) below the surface layer.

Summer fallow. The tillage of uncropped land during the summer to control weeds and allow storage of moisture in the soil for the growth of a later crop. A practice common in semiarid regions, where annual precipitation is not enough to produce a crop every year. Summer fallow is frequently practiced before planting winter grain.

Summit. The topographically highest position of a hillslope. It has a nearly level (planar or only slightly convex) surface.

Surface layer. The soil ordinarily moved in tillage, or its equivalent in uncultivated soil, ranging in depth from 4 to 10 inches (10 to 25 centimeters). Frequently designated as the “plow layer,” or the “Ap horizon.”

Surface soil. The A, E, AB, and EB horizons, considered collectively. It includes all subdivisions of these horizons.

Talus. Fragments of rock and other soil material accumulated by gravity at the foot of cliffs or steep slopes.

Taxadjuncts. Soils that cannot be classified in a series recognized in the classification system. Such soils are named for a series they strongly resemble and are designated as taxadjuncts to that series because they differ in ways too small to be of consequence in interpreting their use and behavior. Soils are recognized as taxadjuncts only when one or more of their characteristics are slightly outside the range defined for the family of the series for which the soils are named.

Terminal moraine. A belt of thick glacial drift that generally marks the termination of important glacial advances.

Terrace. An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field generally is built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

Terrace (geologic). An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

Texture, soil. The relative proportions of sand, silt, and clay particles in a mass of soil. The basic textural classes, in order of increasing proportion of fine particles, are *sand, loamy sand, sandy loam, loam, silt loam, silt, sandy clay loam, clay* *loam, silty clay loam, sandy clay, silty clay,* and *clay*. The sand, loamy sand, and sandy loam classes may be further divided by specifying "coarse," "fine," or "very fine."

Thin layer (in tables). Otherwise suitable soil material that is too thin for the specified use.

Till 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.

Tuff. A compacted deposit that is 50 percent or more volcanic ash and dust.

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.

Varve. A sedimentary layer or a lamina or sequence of laminae deposited in a body of still water within a year. Specifically, a thin pair of graded glaciolacustrine layers seasonally deposited, usually by meltwater streams, in a glacial lake or other body of still water in front of a glacier.

Water bars. Smooth, shallow ditches or depressional areas that are excavated at an angle across a sloping road. They are used to reduce the downward velocity of water and divert it off and away from the road surface. Water bars can easily be driven over if constructed properly.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an ovendry basis, at which a plant (specifically a sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Windthrow. The uprooting and tipping over of trees by the wind.

Tables

Table 1.—Temperature and Precipitation

(Recorded in the period 1948-1999 at Little Valley, New York

Month	Temperature (Degrees F.): Average daily maximum	Average daily minimum	Average	2 years in 10 will have--: Maximum temperature higher than--	Minimum temperature lower than--	Average number of growing degree days*	Precipitation (Inches): Average	2 years in 10 will have--: 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	Days	In
January---	30.4	13.0	21.7	58	-17	7	3.86	2.70	4.93	12	34.0
February--	32.3	12.6	22.5	59	-16	7	3.15	1.92	4.26	9	25.8
March-----	40.6	20.2	30.4	72	-8	42	3.75	2.43	4.94	10	20.9
April-----	53.8	31.3	42.5	82	11	165	3.98	2.97	4.93	10	6.5
May-------	66.0	40.2	53.1	87	24	408	3.74	2.24	5.08	8	0.3
June------	75.0	49.7	62.3	90	33	667	4.43	2.63	6.04	8	0.0
July------	79.2	54.1	66.6	91	40	824	4.13	2.61	5.50	8	0.0
August----	77.2	52.7	65.0	90	37	776	4.16	2.57	5.58	8	0.0
September-	69.7	46.6	58.2	88	29	543	4.38	2.65	5.92	8	0.0
October---	58.9	36.8	47.9	80	20	269	3.85	1.98	5.49	8	1.2
November--	45.7	29.2	37.4	70	8	79	4.84	3.27	6.27	12	18.0
December--	34.3	19.1	26.7	61	-11	15	4.39	3.35	5.37	13	39.1
Yearly :											
Average-	55.3	33.8	44.5	---	---	---	---	---	---	---	---
Extreme-	96	-28	---	92	-20	---	---	---	---	---	---
Total	---	---	---	---	---	3801	48.65	41.83	53.64	114	145.8

Average # of days per year with at least 1 inch of snow on the ground: 94

* 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 (Threshold : 40.0 deg. F)

Table 2.—Freeze Dates in Spring and Fall

(Recorded in the period 1948 to 1999 at Little Valley, New York.)

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—	May 7	May 21	June 6
2 year in 10 later than—	May 2	May 16	June 2
5 year in 10 later than—	Apr. 23	May 7	May 24
First freezing temperature in fall:			
1 yr in 10 earlier than—	Oct. 8	Sept. 26	Sept. 9
2 yr in 10 earlier than—	Oct. 15	Oct. 2	Sept. 15
5 yr in 10 earlier than—	Oct. 27	Oct. 14	Sept. 26

Table 3.—Growing Season

(Recorded in the period 1948 to 1999 at Little Valley, New York.)

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	166	136	105
8 years in 10	174	144	112
5 years in 10	187	159	125
2 years in 10	201	175	138
1 year in 10	208	183	145

Table 4.—Acreage and Proportionate Extent of the Soils

Map symbol	Soil name	Acres	Percent
1	Udifluvents and Fluvaquents, frequently flooded	6,590	0.8
2	Hamlin silt loam	298	*
3	Tioga silt loam	985	0.1
4	Teel silt loam	1,129	0.1
5	Wayland silt loam	3,361	0.4
6A	Wyalusing silt loam, 0 to 3 percent slopes	2,316	0.3
7A	Philo silt loam, 0 to 3 percent slopes	282	*
8	Middlebury silt loam	3,306	0.4
9	Pawling silt loam	5,371	0.7
10	Atkins silt loam	538	*
11B	Ischua channery silt loam, 3 to 8 percent slopes	10,444	1.3
11C	Ischua channery silt loam, 8 to 15 percent slopes	12,687	1.5
11D	Ischua channery silt loam, 15 to 25 percent slopes	12,875	1.6
11E	Ischua channery silt loam, 25 to 35 percent slopes	9,849	1.2
11F	Ischua channery silt loam, 35 to 50 percent slopes	3,125	0.4
12B	Franklinville channery silt loam, 3 to 8 percent slopes	387	*
12C	Franklinville channery silt loam, 8 to 15 percent slopes	771	*
12D	Franklinville channery silt loam, 15 to 25 percent slopes	1,048	0.1
12E	Franklinville channery silt loam, 25 to 35 percent slopes	1,231	0.1
14B	Hornellsville silt loam, 3 to 8 percent slopes	1,009	0.1
14C	Hornellsville silt loam, 8 to 15 percent slopes	943	0.1
15B	Willdin channery silt loam, 3 to 8 percent slopes	2,677	0.3
15C	Willdin channery silt loam, 8 to 15 percent slopes	3,075	0.4
15D	Willdin channery silt loam, 15 to 25 percent slopes	645	*
16A	Almond silt loam, 0 to 3 percent slopes	1,661	0.2
16B	Almond silt loam, 3 to 8 percent slopes	6,529	0.8
16C	Almond silt loam, 8 to 15 percent slopes	1,518	0.2
17B	Salamanca silt loam, 3 to 8 percent slopes	2,234	0.3
17C	Salamanca silt loam, 8 to 15 percent slopes	4,333	0.5
17D	Salamanca silt loam, 15 to 25 percent slopes	5,319	0.6
17E	Salamanca silt loam, 25 to 35 percent slopes	4,038	0.5
18A	Pope fine sandy loam, 0 to 3 percent slopes	293	*
19A	Olean silt loam, 0 to 3 percent slopes	4,543	0.6
19B	Olean silt loam, 3 to 8 percent slopes	687	*
20A	Unadilla silt loam, 0 to 3 percent slopes	813	*
20B	Unadilla silt loam, 3 to 8 percent slopes	257	*
20C	Unadilla silt loam, 8 to 15 percent slopes	221	*
20D	Unadilla silt loam, 15 to 25 percent slopes	233	*
22A	Allard silt loam, 0 to 3 percent slopes	2,987	0.4
22B	Allard silt loam, 3 to 8 percent slopes	827	0.1
25A	Chenango gravelly silt loam, 0 to 3 percent slopes	7,955	1.0
25B	Chenango gravelly silt loam, 3 to 8 percent slopes	7,355	0.9
25C	Chenango gravelly silt loam, 8 to 15 percent slopes	1,974	0.2
25D	Chenango gravelly silt loam, 15 to 25 percent slopes	669	*
25E	Chenango gravelly silt loam, 25 to 35 percent slopes	725	*
25F	Chenango gravelly silt loam, 35 to 50 percent slopes	333	*
26A	Chenango channery silt loam, fan, 0 to 3 percent slopes	4,704	0.6
26B	Chenango channery silt loam, fan, 3 to 8 percent slopes	8,775	1.1
27A	Castile gravelly silt loam, 0 to 3 percent slopes	5,094	0.6
27B	Castile gravelly silt loam, 3 to 8 percent slopes	1,353	0.2
28A	Scio silt loam, 0 to 3 percent slopes	1,500	0.2
29A	Chenango fine gravelly sandy loam, 0 to 3 percent slopes	551	*
29B	Chenango fine gravelly sandy loam, 3 to 8 percent slopes	2,211	0.3
29C	Chenango fine gravelly sandy loam, 8 to 15 percent slopes	798	*
29D	Chenango fine gravelly sandy loam, 15 to 25 percent slopes	201	*
29E	Chenango fine gravelly sandy loam, 25 to 35 percent slopes	235	*
31B	Collamer silt loam, 3 to 8 percent slopes	679	*
31C	Collamer silt loam, 8 to 15 percent slopes	1,327	0.2
32A	Churchville silt loam, 0 to 3 percent slopes	350	*
32B	Churchville silt loam, 3 to 8 percent slopes	1,178	0.1
33A	Wallington silt loam, 0 to 3 percent slopes	988	0.1
34	Getzville silt loam	2,863	0.3

* See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
35A	Rhinebeck silt loam, 0 to 3 percent slopes	1,982	0.2
35B	Rhinebeck silt loam, 3 to 8 percent slopes	6,062	0.7
35C	Rhinebeck silt loam, 8 to 15 percent slopes	902	0.1
36	Canadice silty clay loam	2,072	0.3
37A	Tonawanda silt loam, 0 to 3 percent slopes	2,919	0.4
37B	Tonawanda silt loam, 3 to 8 percent slopes	465	*
38A	Niagara silt loam, 0 to 3 percent slopes	2,990	0.4
38B	Niagara silt loam, 3 to 8 percent slopes	2,326	0.3
39A	Halsey silt loam, 0 to 3 percent slopes	811	*
40A	Williamson silt loam, 0 to 3 percent slopes	179	*
40B	Williamson silt loam, 3 to 8 percent slopes	215	*
40C	Williamson silt loam, 8 to 15 percent slopes	261	*
41A	Barcelona silt loam, 0 to 3 percent slopes	585	*
41B	Barcelona silt loam, 3 to 8 percent slopes	206	*
42A	Elnora fine sandy loam, 0 to 3 percent slopes	339	*
42B	Elnora fine sandy loam, 3 to 8 percent slopes	279	*
43	Canandaigua silt loam	5,094	0.6
44	Canandaigua mucky silt loam	4,168	0.5
45	Canandaigua silt loam, acid substratum	641	*
46	Swormville silt loam	4,612	0.6
47A	Minoa very fine sandy loam, 0 to 3 percent slopes	1,305	0.2
48A	Colonie fine sandy loam, 0 to 3 percent slopes	101	*
48B	Colonie fine sandy loam, 3 to 8 percent slopes	617	*
48C	Colonie fine sandy loam, 8 to 15 percent slopes	126	*
49A	Red Hook silt loam, 0 to 3 percent slopes	3,204	0.4
50A	Canaseraga silt loam, 0 to 3 percent slopes	416	*
50B	Canaseraga silt loam, 3 to 8 percent slopes	2,029	0.2
50C	Canaseraga silt loam, 8 to 15 percent slopes	1,169	0.1
51B	Chadakoin channery silt loam, 3 to 8 percent slopes	658	*
51C	Chadakoin channery silt loam, 8 to 15 percent slopes	1,860	0.2
51D	Chadakoin channery silt loam, 15 to 25 percent slopes	2,696	0.3
51E	Chadakoin channery silt loam, 25 to 35 percent slopes	7,235	0.9
51F	Chadakoin channery silt loam, 35 to 50 percent slopes	2,548	0.3
52B	Valois gravelly silt loam, 3 to 8 percent slopes	10,775	1.3
52C	Valois gravelly silt loam, 8 to 15 percent slopes	8,693	1.1
52D	Valois gravelly silt loam, 15 to 25 percent slopes	3,247	0.4
52E	Valois gravelly silt loam, 25 to 35 percent slopes	1,766	0.2
52F	Valois gravelly silt loam, 35 to 50 percent slopes	841	0.1
53C	Valois-Volusia-Mardin complex, 3 to 15 percent slopes	17,162	2.1
55A	Darien silt loam, 0 to 3 percent slopes	122	*
55B	Darien silt loam, 3 to 8 percent slopes	1,166	0.1
55C	Darien silt loam, 8 to 15 percent slopes	367	*
56B	Chautauqua silt loam, 3 to 8 percent slopes	7,268	0.9
56C	Chautauqua silt loam, 8 to 15 percent slopes	3,970	0.5
56D	Chautauqua silt loam, 15 to 25 percent slopes	1,024	0.1
57A	Busti silt loam, 0 to 3 percent slopes	2,047	0.2
57B	Busti silt loam, 3 to 8 percent slopes	7,405	0.9
57C	Busti silt loam, 8 to 15 percent slopes	472	*
58B	Rushford channery silt loam, 3 to 8 percent slopes	1,271	0.2
58C	Rushford channery silt loam, 8 to 15 percent slopes	1,597	0.2
59B	Yorkshire channery silt loam, 3 to 8 percent slopes	6,347	0.8
59C	Yorkshire channery silt loam, 8 to 15 percent slopes	17,751	2.2
59D	Yorkshire channery silt loam, 15 to 25 percent slopes	12,959	1.6
60A	Napoli silt loam, 0 to 3 percent slopes	2,530	0.3
60B	Napoli silt loam, 3 to 8 percent slopes	18,616	2.3
60C	Napoli silt loam, 8 to 15 percent slopes	19,406	2.4
60D	Napoli silt loam, 15 to 25 percent slopes	241	*
61B	Schuyler silt loam, 3 to 8 percent slopes	1,052	0.1
61C	Schuyler silt loam, 8 to 15 percent slopes	4,150	0.5
61D	Schuyler silt loam, 15 to 25 percent slopes	7,606	0.9
61E	Schuyler silt loam, 25 to 35 percent slopes	7,534	0.9
61F	Schuyler silt loam, 35 to 50 percent slopes	1,655	0.2
62B	Mardin channery silt loam, 3 to 8 percent slopes	9,089	1.1

* See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
62C	Mardin channery silt loam, 8 to 15 percent slopes	20,476	2.5
62D	Mardin channery silt loam, 15 to 25 percent slopes	18,124	2.2
63B	Langford channery silt loam, 3 to 8 percent slopes	2,318	0.3
63C	Langford channery silt loam, 8 to 15 percent slopes	5,339	0.6
63D	Langford channery silt loam, 15 to 25 percent slopes	2,267	0.3
64C	Mardin channery silt loam, 8 to 15 percent slopes, very stony	221	*
66B	Volusia channery silt loam, 3 to 8 percent slopes, very stony	268	*
67A	Dalton silt loam, 0 to 3 percent slopes	980	0.1
67B	Dalton silt loam, 3 to 8 percent slopes	3,203	0.4
68A	Volusia channery silt loam, 0 to 3 percent slopes	2,926	0.4
68B	Volusia channery silt loam, 3 to 8 percent slopes	24,644	3.0
68C	Volusia channery silt loam, 8 to 15 percent slopes	24,578	3.0
69A	Erie channery silt loam, 0 to 3 percent slopes	938	0.1
69B	Erie channery silt loam, 3 to 8 percent slopes	7,404	0.9
69C	Erie channery silt loam, 8 to 15 percent slopes	2,409	0.3
71E	Mongaup channery silt loam, 25 to 35 percent slopes, very stony	883	0.1
71F	Mongaup channery silt loam, 35 to 70 percent slopes, very stony	1,360	0.2
72B	Towerville silt loam, 3 to 8 percent slopes	1,746	0.2
72C	Towerville silt loam, 8 to 15 percent slopes	2,632	0.3
72D	Towerville silt loam, 15 to 25 percent slopes	3,296	0.4
72E	Towerville silt loam, 25 to 35 percent slopes	5,582	0.7
72F	Towerville silt loam, 35 to 50 percent slopes	3,242	0.4
73B	Gretor channery silt loam, 3 to 8 percent slopes	1,573	0.2
73C	Gretor channery silt loam, 8 to 15 percent slopes	1,030	0.1
74	Ashville silt loam	1,457	0.2
75	Alden mucky silt loam	457	*
76A	Orpark silt loam, 0 to 3 percent slopes	395	*
76B	Orpark silt loam, 3 to 8 percent slopes	1,070	0.1
76C	Orpark silt loam, 8 to 15 percent slopes	402	*
77A	Chippewa silt loam, 0 to 3 percent slopes	584	*
78A	Hornell silt loam, 0 to 3 percent slopes	1,194	0.1
78B	Hornell silt loam, 3 to 8 percent slopes	1,311	0.2
78C	Hornell silt loam, 8 to 15 percent slopes	633	*
78D	Hornell silt loam, 15 to 25 percent slopes	501	*
78F	Hornell and Hudson soils, 35 to 50 percent slopes	494	*
79B	Mongaup channery silt loam, 3 to 8 percent slopes	1,602	0.2
79C	Mongaup channery silt loam, 8 to 15 percent slopes	2,276	0.3
79D	Mongaup channery silt loam, 15 to 25 percent slopes	1,843	0.2
79E	Mongaup channery silt loam, 25 to 35 percent slopes	1,004	0.1
79F	Mongaup channery silt loam, 35 to 70 percent slopes	1,052	0.1
80A	Fremont silt loam, 0 to 3 percent slopes	2,316	0.3
80B	Fremont silt loam, 3 to 8 percent slopes	6,523	0.8
80C	Fremont silt loam, 8 to 15 percent slopes	2,665	0.3
81B	Varysburg gravelly silt loam, 3 to 8 percent slopes	2,088	0.3
81C	Varysburg gravelly silt loam, 8 to 15 percent slopes	798	*
81D	Varysburg gravelly silt loam, 15 to 25 percent slopes	1,463	0.2
81E	Varysburg gravelly silt loam, 25 to 35 percent slopes	653	*
82F	Rock outcrop-Manlius complex, 35 to 70 percent slopes	616	*
84B	Elko silt loam, 3 to 8 percent slopes	802	*
84C	Elko silt loam, 8 to 15 percent slopes	321	*
85B	Onoville silt loam, 3 to 8 percent slopes	812	*
85C	Onoville silt loam, 8 to 15 percent slopes	3,605	0.4
85D	Onoville silt loam, 15 to 25 percent slopes	7,783	0.9
86B	Eldred silt loam, 3 to 8 percent slopes	1,606	0.2
86C	Eldred silt loam, 8 to 15 percent slopes	1,720	0.2
86D	Eldred silt loam, 15 to 25 percent slopes	1,805	0.2
87B	Shongo silt loam, 3 to 8 percent slopes	2,325	0.3
87C	Shongo silt loam, 8 to 15 percent slopes	4,331	0.5
88A	Ivory silt loam, 0 to 3 percent slopes	174	*
88B	Ivory silt loam, 3 to 8 percent slopes	1,057	0.1
88C	Ivory silt loam, 8 to 15 percent slopes	205	*
88D	Ivory silt loam, 15 to 25 percent slopes	8	*
89B	Portville silty clay loam, 3 to 8 percent slopes	4,115	0.5

* See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
89C	Portville silty clay loam, 8 to 15 percent slopes	9,969	1.2
90A	Brinkerton silt loam, 0 to 3 percent slopes	309	*
90B	Brinkerton silt loam, 3 to 8 percent slopes	79	*
91A	Palms muck, 0 to 2 percent slopes	2,544	0.3
92	Carlisle muck	914	0.1
93	Saprists, inundated	1,470	0.2
94B	Frewsburg silt loam, 3 to 8 percent slopes	981	0.1
94C	Frewsburg silt loam, 8 to 15 percent slopes	227	*
95B	Mandy channery silt loam, 3 to 8 percent slopes	3,281	0.4
95C	Mandy channery silt loam, 8 to 15 percent slopes	3,260	0.4
95D	Mandy channery silt loam, 15 to 25 percent slopes	2,177	0.3
95E	Mandy channery silt loam, 25 to 35 percent slopes	3,104	0.4
95F	Mandy channery silt loam, 35 to 50 percent slopes	3,985	0.5
96B	Carrollton channery silt loam, 3 to 8 percent slopes	4,447	0.5
96C	Carrollton channery silt loam, 8 to 15 percent slopes	5,231	0.6
96D	Carrollton channery silt loam, 15 to 25 percent slopes	5,626	0.7
96E	Carrollton channery silt loam, 25 5o 35 percent slopes	10,562	1.3
96F	Carrollton channery silt loam, 35 to 50 percent slopes	4,337	0.5
97B	Kinzua channery silt loam, 3 to 8 percent slopes	435	*
97C	Kinzua channery silt loam, 8 to 15 percent slopes	1,966	0.2
97D	Kinzua channery silt loam, 15 to 25 percent slopes	4,417	0.5
97E	Kinzua channery silt loam, 25 to 35 percent slopes	15,549	1.9
97F	Kinzua channery silt loam, 35 to 60 percent slopes	1,049	0.1
98D	Kinzua channery silt loam, 15 to 25 percent slopes, extremely bouldery	970	0.1
98E	Kinzua channery silt loam, 25 to 35 percent slopes, extremely bouldery	3,132	0.4
99B	Buchanan silt loam, 3 to 8 percent slopes	345	*
99C	Buchanan silt loam, 8 to 15 percent slopes	4,310	0.5
99D	Buchanan silt loam, 15 to 25 percent slopes	11,118	1.4
100	Udorthents, loamy-skeletal	680	*
101	Udorthents, refuse substratum	166	*
102C	Mandy-Rock outcrop complex, 3 to 15 percent slopes	515	*
103C	Knapp Creek-Rock outcrop complex, 3 to 15 percent slopes	728	*
104B	Flatiron loamy fine sand, 3 to 8 percent slopes, extremely bouldery	400	*
104C	Flatiron loamy fine sand, 8 to 15 percent slopes, extremely bouldery	418	*
104D	Flatiron loamy fine sand, 15 to 25 percent slopes, extremely bouldery	282	*
104E	Flatiron loamy fine sand, 25 to 35 percent slopes, extremely bouldery	764	*
108D	Hartleton channery silt loam, 15 to 25 percent slopes	54	*
108E	Hartleton channery silt loam, 25 to 35 percent slopes	467	*
108F	Hartleton channery silt loam, 35 to 50 percent slopes	48	*
131	Lamson very fine sandy loam	1,488	0.2
132B	Wiscoy channery silt loam, 3 to 8 percent slopes	801	*
132C	Wiscoy channery silt loam, 8 to 15 percent slopes	729	*
135C	Hudson silt loam, 8 to 15 percent slopes	794	*
135D	Hudson silt loam, 15 to 25 percent slopes	2,848	0.3
135E	Hudson silt loam, 25 to 35 percent slope	4,809	0.6
140D	Dunkirk silt loam, 15 to 25 percent slopes	1,067	0.1
140E	Dunkirk silt loam, 25 to 35 percent slopes	1,196	0.1
185C	Onoville silt loam, 8 to 15 percent slopes, extremely bouldery	3,550	0.4
185D	Onoville silt loam, 15 to 25 percent slopes, extremely bouldery	4,567	0.6
187B	Shongo silt loam, 3 to 8 percent slopes, extremely bouldery	2,078	0.3
187C	Shongo silt loam, 8 to 15 percent slopes, extremely bouldery	3,002	0.4
188B	Cavode silt loam, 3 to 8 percent slopes	50	*
188C	Cavode silt loam, 8 to 15 percent slopes	89	*
188D	Cavode silt loam, 15 to 25 percent slopes	252	*
189B	Portville silty clay loam, 3 to 8 percent slopes, extremely bouldery	1,901	0.2
189C	Portville silty clay loam, 8 to 15 percent slopes, extremely bouldery	3,741	0.5
195C	Mandy channery silt loam, 3 to 15 percent slopes, extremely bouldery	1,568	0.2
195D	Mandy channery silt loam, 15 to 25 percent slopes, extremely bouldery	1,016	0.1
195E	Mandy channery silt loam, 25 to 50 percent slopes, extremely bouldery	388	*
199C	Buchanan silt loam, 8 to 15 percent slopes, extremely bouldery	3,185	0.4
199D	Buchanan silt loam, 15 to 25 percent slopes, extremely bouldery	3,403	0.4
289B	Ceres channery silt loam, 3 to 8 percent slopes	180	*
289C	Ceres channery silt loam, 8 to 15 percent slopes	206	*

* See footnote at end of table.

Table 4.—Acreage and Proportionate Extent of the Soils—Continued

Map symbol	Soil name	Acres	Percent
289D	Ceres channery silt loam, 15 to 25 percent slopes	350	*
289E	Ceres channery silt loam, 25 to 35 percent slopes	494	*
289F	Ceres channery silt loam, 35 to 50 percent slopes	386	*
400	Wakeville silt loam	3,661	0.4
496B	Gilpin channery silt loam, 3 to 8 percent slopes	145	*
496C	Gilpin channery silt loam, 8 to 15 percent slopes	496	*
496D	Gilpin channery silt loam, 15 to 25 percent slopes	1,469	0.2
496E	Gilpin channery silt loam, 25 to 35 percent slopes	4,562	0.6
496F	Gilpin channery silt loam, 35 to 50 percent slopes	2,747	0.3
497D	Rayne channery silt loam, 15 to 25 percent slopes	2,762	0.3
497E	Rayne channery silt loam, 25 to 35 percent slopes	14,371	1.7
497F	Rayne channery silt loam, 35 to 50 percent slopes	1,113	0.1
498E	Rayne channery silt loam, 25 to 35 percent slopes, extremely bouldery	750	*
800	Holderton silt loam	4,648	0.6
PG	Pits, gravel	1,596	0.2
Ur	Urban land	369	*
W	Water	14,898	1.8
	Total	822,000	100.0

* Less than 0.1 percent.

Table 5.—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
2	Hamlin silt loam
3	Tioga silt loam
4	Teel silt loam
7A	Philo silt loam, 0 to 3 percent slopes
8	Middlebury silt loam
9	Pawling silt loam
11B	Ischua channery silt loam, 3 to 8 percent slopes
12B	Franklinville channery silt loam, 3 to 8 percent slopes
16A	Almond silt loam, 0 to 3 percent slopes (Prime farmland if drained)
17B	Salamanca silt loam, 3 to 8 percent slopes
18A	Pope fine sandy loam, 0 to 3 percent slopes
19A	Olean silt loam, 0 to 3 percent slopes
19B	Olean silt loam, 3 to 8 percent slopes
20A	Unadilla silt loam, 0 to 3 percent slopes
20B	Unadilla silt loam, 3 to 8 percent slopes
22A	Allard silt loam, 0 to 3 percent slopes
22B	Allard silt loam, 3 to 8 percent slopes
25A	Chenango gravelly silt loam, 0 to 3 percent slopes
25B	Chenango gravelly silt loam, 3 to 8 percent slopes
26A	Chenango channery silt loam, fan, 0 to 3 percent slopes
26B	Chenango channery silt loam, fan, 3 to 8 percent slopes
27A	Castile gravelly silt loam, 0 to 3 percent slopes
27B	Castile gravelly silt loam, 3 to 8 percent slopes
28A	Scio silt loam, 0 to 3 percent slopes
29A	Chenango fine gravelly sandy loam, 0 to 3 percent slopes
29B	Chenango fine gravelly sandy loam, 3 to 8 percent slopes
31B	Collamer silt loam, 3 to 8 percent slopes
32A	Churchville silt loam, 0 to 3 percent slopes (Prime farmland if drained)
32B	Churchville silt loam, 3 to 8 percent slopes (Prime farmland if drained)
33A	Wallington silt loam, 0 to 3 percent slopes (Prime farmland if drained)
35A	Rhinebeck silt loam, 0 to 3 percent slopes (Prime farmland if drained)
35B	Rhinebeck silt loam, 3 to 8 percent slopes (Prime farmland if drained)
37A	Tonawanda silt loam, 0 to 3 percent slopes (Prime farmland if drained)
37B	Tonawanda silt loam, 3 to 8 percent slopes (Prime farmland if drained)
38A	Niagara silt loam, 0 to 3 percent slopes (Prime farmland if drained)
38B	Niagara silt loam, 3 to 8 percent slopes (Prime farmland if drained)
40A	Williamson silt loam, 0 to 3 percent slopes
40B	Williamson silt loam, 3 to 8 percent slopes
41A	Barcelona silt loam, 0 to 3 percent slopes (Prime farmland if drained)
41B	Barcelona silt loam, 3 to 8 percent slopes (Prime farmland if drained)
42A	Elnora fine sandy loam, 0 to 3 percent slopes
42B	Elnora fine sandy loam, 3 to 8 percent slopes
46	Swormville silt loam (Prime farmland if drained)
47A	Minoa very fine sandy loam, 0 to 3 percent slopes (Prime farmland if drained)
48A	Colonie fine sandy loam, 0 to 3 percent slopes
48B	Colonie fine sandy loam, 3 to 8 percent slopes
49A	Red Hook silt loam, 0 to 3 percent slopes (Prime farmland if drained)
50A	Canaseraga silt loam, 0 to 3 percent slopes
51B	Chadakoin channery silt loam, 3 to 8 percent slopes
52B	Valois gravelly silt loam, 3 to 8 percent slopes
55A	Darien silt loam, 0 to 3 percent slopes (Prime farmland if drained)
55B	Darien silt loam, 3 to 8 percent slopes (Prime farmland if drained)
56B	Chautauqua silt loam, 3 to 8 percent slopes
57A	Busti silt loam, 0 to 3 percent slopes (Prime farmland if drained)
57B	Busti silt loam, 3 to 8 percent slopes (Prime farmland if drained)
61B	Schuyler silt loam, 3 to 8 percent slopes
72B	Towerville silt loam, 3 to 8 percent slopes
73B	Gretor channery silt loam, 3 to 8 percent slopes (Prime farmland if drained)
76A	Orpark silt loam, 0 to 3 percent slopes (Prime farmland if drained)
76B	Orpark silt loam, 3 to 8 percent slopes (Prime farmland if drained)

Table 5.—Prime Farmland—Continued

Map symbol	Soil name
78A	Hornell silt loam, 0 to 3 percent slopes (Prime farmland if drained)
79B	Mongaup channery silt loam, 3 to 8 percent slopes
80A	Fremont silt loam, 0 to 3 percent slopes (Prime farmland if drained)
81B	Varysburg gravelly silt loam, 3 to 8 percent slopes
88A	Ivory silt loam, 0 to 3 percent slopes (Prime farmland if drained)
94B	Frewsburg silt loam, 3 to 8 percent slopes (Prime farmland if drained)
96B	Carrollton channery silt loam, 3 to 8 percent slopes
97B	Kinzua channery silt loam, 3 to 8 percent slopes
289B	Ceres channery silt loam, 3 to 8 percent slopes
400	Wakeville silt loam (Prime farmland if drained)
496B	Gilpin channery silt loam, 3 to 8 percent slopes
800	Holderton silt loam (Prime farmland if drained)

Table 6.—Land Capability and Yields per Acre of Crops and Pasture

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

Map symbol and soil name	Land capa-bility	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
1:								
Udifluvents-------	5w	---	---	---	---	---	---	2.00
Fluvaquents-------	5w	---	---	---	---	---	---	2.00
2:								
Hamlin------------	1	6.00	120.00	24.00	4.00	5.00	90.00	8.50
3:								
Tioga-------------	1	6.00	120.00	24.00	4.00	5.00	90.00	8.50
4:								
Teel--------------	2w	5.00	115.00	23.00	4.00	4.50	80.00	7.50
5:								
Wayland-----------	5w	---	---	---	---	---	---	3.00
6A:								
Wyalusing---------	5w	---	---	---	---	---	---	2.50
7A:								
Philo-------------	2w	5.00	115.00	23.00	4.00	4.50	80.00	7.50
8:								
Middlebury--------	2w	5.00	115.00	23.00	4.00	4.50	80.00	7.50
9:								
Pawling-----------	2w	5.00	115.00	23.00	4.00	4.50	80.00	7.50
10:								
Atkins------------	5w	---	---	---	---	---	---	2.50
11B:								
Ischua------------	2e	3.50	80.00	16.00	3.00	3.50	65.00	7.00
11C:								
Ischua------------	3e	3.50	75.00	16.00	3.00	3.50	60.00	7.00
11D:								
Ischua------------	4e	3.00	65.00	15.00	2.50	3.00	50.00	5.50
11E:								
Ischua------------	6e	---	---	---	---	---	---	5.00
11F:								
Ischua------------	7e	---	---	---	---	---	---	---
12B:								
Franklinville-----	2e	4.50	85.00	16.00	3.00	3.50	65.00	7.00
12C:								
Franklinville-----	3e	4.00	80.00	16.00	3.00	3.50	60.00	7.00
12D:								
Franklinville-----	4e	3.00	75.00	15.00	2.50	3.00	50.00	6.00
12E:								
Franklinville-----	6e	---	---	---	---	---	---	5.50
14B:								
Hornellsville-----	3w	3.00	70.00	14.00	2.50	2.50	60.00	5.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
14C: Hornellsville-----	3e	3.00	65.00	13.00	2.50	3.00	55.00	5.50
15B: Willdin-----------	2w	4.50	80.00	16.00	3.00	3.50	65.00	7.00
15C: Willdin-----------	3e	4.50	75.00	15.00	3.00	3.50	60.00	6.50
15D: Willdin-----------	4e	3.00	70.00	14.00	2.50	3.00	50.00	6.00
16A: Almond------------	3w	2.50	70.00	15.00	3.00	3.00	60.00	5.50
16B: Almond------------	3w	3.00	70.00	15.00	3.00	3.50	60.00	5.50
16C: Almond------------	3e	3.00	60.00	12.00	2.50	3.00	60.00	5.50
17B: Salamanca---------	2e	4.50	80.00	16.00	3.00	3.50	60.00	7.50
17C: Salamanca---------	3e	3.50	75.00	15.00	3.00	3.50	55.00	6.50
17D: Salamanca---------	4e	3.00	65.00	13.00	2.50	3.00	50.00	6.50
17E: Salamanca---------	6e	---	---	---	---	---	---	5.50
18A: Pope--------------	1	6.00	120.00	24.00	4.00	5.00	90.00	8.50
19A: Olean-------------	2w	5.00	115.00	23.00	4.00	4.50	85.00	7.50
19B: Olean-------------	2e	5.00	115.00	23.00	4.00	4.50	85.00	7.50
20A: Unadilla----------	1	6.00	120.00	24.00	4.00	5.00	90.00	8.50
20B: Unadilla----------	2e	6.00	120.00	24.00	4.00	5.00	90.00	8.50
20C: Unadilla----------	3e	4.50	100.00	20.00	3.50	4.00	75.00	7.50
20D: Unadilla----------	4e	3.50	85.00	17.00	3.00	3.50	70.00	7.00
22A: Allard------------	1	6.00	120.00	24.00	4.00	5.00	90.00	8.50
22B: Allard------------	2e	6.00	120.00	24.00	4.00	5.00	90.00	8.50
25A: Chenango----------	2s	6.00	105.00	21.00	4.00	5.00	80.00	8.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
25B:								
Chenango----------	2s	6.00	105.00	21.00	4.00	5.00	80.00	8.50
25C:								
Chenango----------	3e	5.50	95.00	19.00	3.50	4.50	75.00	7.50
25D:								
Chenango----------	4e	4.00	80.00	16.00	3.00	4.00	65.00	7.00
25E:								
Chenango----------	6e	---	---	---	---	---	---	5.50
25F:								
Chenango----------	7e	---	---	---	---	---	---	---
26A:								
Chenango----------	2s	6.00	100.00	20.00	4.00	5.00	80.00	8.50
26B:								
Chenango----------	2s	6.00	100.00	20.00	4.00	5.00	80.00	8.50
27A:								
Castile-----------	2w	5.50	115.00	23.00	4.00	4.50	85.00	7.50
27B:								
Castile-----------	2w	5.50	115.00	23.00	4.00	4.50	85.00	7.50
28A:								
Scio--------------	2w	5.00	110.00	22.00	4.00	4.50	85.00	7.50
29A:								
Chenango----------	2s	5.50	100.00	20.00	4.00	4.50	80.00	8.50
29B:								
Chenango----------	2s	5.50	100.00	20.00	4.00	4.50	80.00	8.50
29C:								
Chenango----------	3e	4.50	90.00	18.00	3.00	4.00	75.00	7.50
29D:								
Chenango----------	4e	4.00	80.00	16.00	3.00	4.00	65.00	7.00
29E:								
Chenango----------	6e	---	---	---	---	---	---	5.50
31B:								
Collamer----------	2e	5.00	115.00	23.00	4.00	4.50	85.00	7.50
31C:								
Collamer----------	3e	4.50	100.00	20.00	3.50	4.00	75.00	7.00
32A:								
Churchville-------	3w	2.50	80.00	16.00	3.00	3.50	60.00	6.00
32B:								
Churchville-------	3w	3.00	85.00	17.00	3.00	3.50	65.00	6.00
33A:								
Wallington--------	3w	2.50	80.00	16.00	3.00	2.50	60.00	6.50
34:								
Getzville---------	4w	---	70.00	14.00	3.00	2.50	55.00	5.00

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
35A: Rhinebeck---------	3w	2.50	80.00	16.00	3.00	3.50	60.00	6.00
35B: Rhinebeck---------	3w	3.00	85.00	17.00	3.00	3.50	65.00	6.50
35C: Rhinebeck---------	3e	3.00	80.00	16.00	3.00	3.50	60.00	6.00
36: Canadice----------	4w	---	65.00	13.00	3.00	2.50	50.00	5.00
37A: Tonawanda---------	3w	2.50	90.00	18.00	3.50	3.00	70.00	6.50
37B: Tonawanda---------	3w	3.00	95.00	19.00	3.50	3.50	75.00	7.00
38A: Niagara-----------	3w	2.50	95.00	19.00	3.50	3.50	70.00	6.50
38B: Niagara-----------	3w	3.00	100.00	20.00	3.50	3.50	70.00	6.50
39A: Halsey------------	5w	---	---	---	---	---	---	2.00
40A: Williamson--------	2w	5.00	90.00	18.00	3.50	4.00	75.00	7.00
40B: Williamson--------	2e	5.00	95.00	19.00	3.50	4.00	80.00	7.50
40C: Williamson--------	3e	4.00	85.00	17.00	3.00	3.50	70.00	7.00
41A: Barcelona---------	3w	2.50	90.00	18.00	3.50	3.50	65.00	6.50
41B: Barcelona---------	3w	3.00	85.00	17.00	3.50	3.50	65.00	6.50
42A: Elnora------------	2w	5.00	95.00	19.00	3.50	4.00	70.00	6.50
42B: Elnora------------	2w	5.00	95.00	19.00	3.50	4.00	70.00	6.50
43: Canandaigua-------	4w	---	70.00	14.00	3.00	2.50	55.00	5.00
44: Canandaigua-------	5w	---	---	---	---	---	---	4.50
45: Canandaigua-------	4w	---	70.00	14.00	3.00	3.50	55.00	5.00
46: Swormville--------	3w	3.00	95.00	19.00	3.50	3.50	70.00	6.50
47A: Minoa-------------	3w	3.00	90.00	18.00	3.50	3.50	70.00	6.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
48A:								
Colonie-----------	2s	5.00	95.00	19.00	4.00	4.50	80.00	7.00
48B:								
Colonie-----------	2s	5.00	95.00	19.00	4.00	4.50	80.00	7.00
48C:								
Colonie-----------	3e	4.00	75.00	15.00	3.00	3.50	70.00	6.00
49A:								
Red Hook----------	3w	3.00	90.00	18.00	3.50	3.50	70.00	6.50
50A:								
Canaseraga--------	2w	4.50	90.00	18.00	3.50	3.50	70.00	7.00
50B:								
Canaseraga--------	2e	4.50	90.00	18.00	3.50	3.50	70.00	7.00
50C:								
Canaseraga--------	3e	4.00	85.00	17.00	3.00	3.00	65.00	6.00
51B:								
Chadakoin---------	2e	5.50	110.00	22.00	4.00	5.00	75.00	8.50
51C:								
Chadakoin---------	3e	4.50	95.00	19.00	3.50	4.50	70.00	7.50
51D:								
Chadakoin---------	4e	4.00	80.00	16.00	3.00	4.00	65.00	7.00
51E:								
Chadakoin---------	6e	---	---	---	---	---	---	5.50
51F:								
Chadakoin---------	7e	---	---	---	---	---	---	---
52B:								
Valois------------	2e	5.50	110.00	22.00	4.00	4.50	75.00	7.50
52C:								
Valois------------	3e	4.50	95.00	19.00	3.50	4.50	70.00	7.50
52D:								
Valois------------	4e	4.00	80.00	16.00	3.00	4.00	65.00	7.00
52E:								
Valois------------	6e	---	---	---	---	---	---	5.50
52F:								
Valois------------	7e	---	---	---	---	---	---	---
53C:								
Valois------------	3e	4.50	95.00	19.00	4.00	4.50	70.00	7.50
Volusia-----------	3e	3.00	75.00	15.00	3.50	3.00	65.00	6.00
Mardin------------	3e	4.50	80.00	16.00	3.50	3.50	65.00	7.00
55A:								
Darien------------	3w	3.00	90.00	18.00	3.50	3.00	70.00	6.50
55B:								
Darien------------	3w	3.00	95.00	19.00	3.50	3.50	75.00	7.00

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
55C: Darien	3e	3.00	80.00	16.00	3.50	3.50	60.00	6.50
56B: Chautauqua	2w	5.00	100.00	20.00	4.00	4.50	75.00	7.50
56C: Chautauqua	3e	4.50	90.00	18.00	3.50	4.00	65.00	7.00
56D: Chautauqua	4e	3.50	80.00	16.00	3.00	3.50	60.00	6.50
57A: Busti	3w	3.00	85.00	17.00	3.50	3.00	65.00	6.50
57B: Busti	3w	3.50	90.00	18.00	3.50	3.50	70.00	7.00
57C: Busti	3e	3.50	80.00	16.00	3.50	3.50	60.00	6.50
58B: Rushford	2w	4.50	95.00	19.00	3.50	4.00	70.00	7.50
58C: Rushford	3e	4.00	90.00	18.00	3.00	3.50	65.00	7.00
59B: Yorkshire	2w	4.50	80.00	16.00	3.00	3.50	60.00	7.00
59C: Yorkshire	3e	4.00	75.00	15.00	3.00	3.50	65.00	7.00
59D: Yorkshire	4e	3.50	65.00	13.00	3.00	3.00	50.00	6.50
60A: Napoli	3w	3.00	70.00	14.00	3.50	2.50	55.00	6.50
60B: Napoli	3w	3.00	75.00	15.00	3.50	2.50	60.00	6.50
60C: Napoli	3e	3.00	65.00	13.00	3.00	2.50	55.00	6.00
60D: Napoli	4e	3.00	55.00	11.00	3.00	2.50	50.00	5.50
61B: Schuyler	2w	4.50	90.00	18.00	4.00	4.50	70.00	7.50
61C: Schuyler	3e	4.00	85.00	17.00	3.50	3.50	65.00	7.00
61D: Schuyler	4e	3.50	80.00	16.00	3.00	3.50	60.00	6.50
61E: Schuyler	6e	---	---	---	---	---	---	5.50
61F: Schuyler	7e	---	---	---	---	---	---	---
62B: Mardin	2w	4.50	90.00	18.00	4.00	4.50	70.00	7.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capa- bility	Alfalfa hay	Corn	Corn silage	Grass hay	Grass- legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
62C:								
Mardin------------	3e	4.00	80.00	16.00	3.50	3.50	65.00	7.00
62D:								
Mardin------------	4e	3.50	70.00	14.00	3.00	3.50	60.00	6.50
63B:								
Langford----------	2w	5.00	95.00	19.00	4.00	4.50	70.00	7.50
63C:								
Langford----------	3e	4.50	85.00	17.00	4.00	4.50	65.00	7.50
63D:								
Langford----------	4e	4.00	80.00	16.00	3.50	4.00	65.00	6.50
64C:								
Mardin------------	6s	---	---	---	---	---	---	5.50
66B:								
Volusia-----------	6s	---	---	---	---	---	---	5.00
67A:								
Dalton------------	3w	3.00	75.00	15.00	3.50	3.00	65.00	6.50
67B:								
Dalton------------	3w	3.00	80.00	16.00	3.50	3.00	65.00	6.50
68A:								
Volusia-----------	3w	3.00	75.00	15.00	3.50	3.00	65.00	6.50
68B:								
Volusia-----------	3w	3.00	80.00	16.00	3.50	3.00	65.00	6.50
68C:								
Volusia-----------	3e	2.50	70.00	14.00	3.50	3.00	60.00	6.00
69A:								
Erie--------------	3w	3.00	80.00	16.00	3.50	3.00	65.00	6.50
69B:								
Erie--------------	3w	3.50	85.00	17.00	3.50	3.50	65.00	7.00
69C:								
Erie--------------	3e	3.00	75.00	15.00	3.50	3.00	60.00	6.50
71E:								
Mongaup-----------	7s	---	---	---	---	---	---	4.50
71F:								
Mongaup-----------	7s	---	---	---	---	---	---	---
72B:								
Towerville--------	2e	4.50	85.00	17.00	4.00	4.50	70.00	7.50
72C:								
Towerville--------	3e	4.00	80.00	16.00	3.50	3.50	65.00	7.50
72D:								
Towerville--------	4e	3.50	75.00	15.00	3.00	3.50	60.00	6.50
72E:								
Towerville--------	6e	---	---	---	---	---	---	5.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
72F:								
Towerville--------	7e	---	---	---	---	---	---	---
73B:								
Gretor------------	3w	3.00	70.00	14.00	3.50	3.00	60.00	6.00
73C:								
Gretor------------	3e	3.00	65.00	13.00	3.50	3.00	55.00	6.00
74:								
Ashville----------	4w	---	70.00	14.00	3.00	2.50	55.00	5.00
75:								
Alden-------------	5w	---	---	---	---	---	---	---
76A:								
Orpark------------	3w	2.50	70.00	14.00	3.50	3.00	60.00	6.00
76B:								
Orpark------------	3w	3.00	75.00	15.00	3.50	3.00	65.00	6.50
76C:								
Orpark------------	3e	3.00	75.00	15.00	3.50	3.00	60.00	6.50
77A:								
Chippewa----------	4w	---	65.00	13.00	2.50	2.00	50.00	4.50
78A:								
Hornell-----------	3w	2.50	75.00	15.00	3.00	2.50	65.00	6.00
78B:								
Hornell-----------	3w	3.00	75.00	15.00	3.50	3.00	65.00	6.00
78C:								
Hornell-----------	3e	3.00	65.00	13.00	3.00	3.00	65.00	6.00
78D:								
Hornell-----------	4e	2.50	60.00	12.00	3.00	3.00	60.00	5.50
78F:								
Hornell-----------	7e	---	---	---	---	---	---	---
Hudson------------	7e	---	---	---	---	---	---	---
79B:								
Mongaup-----------	2e	4.50	80.00	16.00	3.50	4.00	70.00	7.00
79C:								
Mongaup-----------	3e	4.50	75.00	15.00	3.50	4.00	65.00	7.00
79D:								
Mongaup-----------	4e	3.00	70.00	14.00	3.00	3.50	60.00	6.00
79E:								
Mongaup-----------	6e	---	---	---	---	---	---	5.50
79F:								
Mongaup-----------	7e	---	---	---	---	---	---	---
80A:								
Fremont-----------	3w	3.00	75.00	15.00	3.50	3.00	65.00	6.50
80B:								
Fremont-----------	3w	3.00	80.00	16.00	3.50	3.00	65.00	6.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
80C:								
Fremont-----------	3e	3.00	70.00	14.00	3.50	3.00	60.00	6.00
81B:								
Varysburg---------	2w	5.50	115.00	23.00	4.00	4.50	85.00	8.50
81C:								
Varysburg---------	3e	4.50	95.00	19.00	4.00	4.50	75.00	8.50
81D:								
Varysburg---------	4e	4.00	80.00	16.00	3.00	4.00	65.00	7.00
81E:								
Varysburg---------	6e	---	---	---	---	---	---	5.50
82F:								
Rock outcrop------	7s	---	---	---	---	---	---	---
Manlius-----------	7s	---	---	---	---	---	---	---
84B:								
Elko--------------	2e	4.50	80.00	16.00	3.00	3.50	65.00	7.00
84C:								
Elko--------------	3e	4.50	75.00	15.00	3.00	3.50	60.00	7.00
85B:								
Onoville----------	2e	4.50	80.00	16.00	3.00	3.50	65.00	7.00
85C:								
Onoville----------	3e	4.50	75.00	15.00	3.00	3.50	60.00	7.00
85D:								
Onoville----------	4e	3.50	70.00	14.00	2.50	3.00	55.00	6.50
86B:								
Eldred------------	2e	4.50	80.00	16.00	3.00	3.50	65.00	7.00
86C:								
Eldred------------	3e	4.50	75.00	15.00	3.00	3.50	60.00	7.00
86D:								
Eldred------------	4e	3.50	70.00	14.00	2.50	3.00	55.00	6.50
87B:								
Shongo------------	3w	3.00	75.00	15.00	3.50	3.00	60.00	6.50
87C:								
Shongo------------	3e	3.00	70.00	14.00	3.00	2.50	55.00	6.00
88A:								
Ivory-------------	3w	2.50	65.00	13.00	3.00	2.50	60.00	6.00
88B:								
Ivory-------------	3w	3.00	65.00	13.00	3.00	3.00	60.00	6.00
88C:								
Ivory-------------	3e	3.00	60.00	12.00	3.00	3.00	55.00	6.00
88D:								
Ivory-------------	4e	2.50	55.00	12.00	3.00	2.50	45.00	5.00

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capa- bility	Alfalfa hay	Corn	Corn silage	Grass hay	Grass- legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
89B: Portville---------	3w	3.00	85.00	17.00	3.50	3.00	65.00	6.50
89C: Portville---------	3e	3.00	75.00	15.00	3.50	3.00	60.00	6.50
90A: Brinkerton--------	4w	---	70.00	14.00	3.00	2.50	55.00	5.00
90B: Brinkerton--------	4w	---	70.00	14.00	3.00	2.50	55.00	5.00
91A: Palms-------------	5w	---	---	---	---	---	---	---
92: Carlisle----------	5w	---	---	---	---	---	---	---
93: Saprists, inundate	8w	---	---	---	---	---	---	---
94B: Frewsburg---------	3w	3.00	70.00	14.00	3.50	3.00	60.00	6.50
94C: Frewsburg---------	3e	3.00	65.00	13.00	3.50	3.00	55.00	6.00
95B: Mandy-------------	2e	4.50	80.00	16.00	3.50	4.00	70.00	7.00
95C: Mandy-------------	3e	4.50	75.00	15.00	3.50	4.00	65.00	7.00
95D: Mandy-------------	4e	3.00	65.00	13.00	3.00	3.50	60.00	6.00
95E: Mandy-------------	6e	---	---	---	---	---	---	5.50
95F: Mandy-------------	7e	---	---	---	---	---	---	---
96B: Carrollton--------	2e	4.50	80.00	16.00	3.50	4.00	65.00	7.00
96C: Carrollton--------	3e	4.50	75.00	15.00	3.50	4.00	60.00	7.00
96D: Carrollton--------	4e	3.50	65.00	13.00	3.00	3.50	55.00	6.50
96E: Carrollton--------	6e	---	---	---	---	---	---	5.50
96F: Carrollton--------	7e	---	---	---	---	---	---	---
97B: Kinzua------------	2e	4.50	90.00	18.00	3.50	4.50	70.00	7.50
97C: Kinzua------------	3e	4.50	85.00	17.00	3.50	4.50	65.00	7.50
97D: Kinzua------------	4e	4.00	75.00	15.00	3.00	3.50	60.00	6.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
97E:								
Kinzua------------	6e	---	---	---	---	---	---	5.50
97F:								
Kinzua------------	7e	---	---	---	---	---	---	---
98D:								
Kinzua------------	6s	---	---	---	---	---	---	5.00
98E:								
Kinzua------------	7s	---	---	---	---	---	---	4.00
99B:								
Buchanan----------	2w	4.50	90.00	18.00	4.00	4.50	75.00	7.50
99C:								
Buchanan----------	3e	4.00	80.00	16.00	4.00	4.00	65.00	7.50
99D:								
Buchanan----------	4e	3.50	70.00	14.00	3.50	3.50	60.00	6.50
100:								
Udorthents--------	---	---	---	---	---	---	---	---
101:								
Udorthents, refuse substratum-------	---	---	---	---	---	---	---	---
102C:								
Mandy-------------	7s	---	---	---	---	---	---	6.00
Rock outcrop------	---	---	---	---	---	---	---	---
103C:								
Knapp Creek-------	7s	---	---	---	---	---	---	6.00
Rock outcrop------	---	---	---	---	---	---	---	---
104B:								
Flatiron----------	7s	4.50	85.00	17.00	3.50	4.00	75.00	7.50
104C:								
Flatiron----------	7s	4.50	80.00	16.00	3.50	4.00	75.00	7.50
104D:								
Flatiron----------	7s	3.50	70.00	14.00	3.00	3.50	70.00	6.50
104E:								
Flatiron----------	7s	---	---	---	---	---	---	5.50
108D:								
Hartleton---------	4e	3.50	70.00	14.00	3.00	3.50	60.00	6.00
108E:								
Hartleton---------	6e	---	---	---	---	---	---	5.50
108F:								
Hartleton---------	7e	---	---	---	---	---	---	---
131:								
Lamson------------	4w	---	70.00	14.00	3.00	2.50	55.00	5.00

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capa-bility	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
132B:								
Wiscoy------------	3w	3.00	80.00	16.00	3.50	3.00	65.00	6.50
132C:								
Wiscoy------------	3e	2.50	70.00	14.00	3.50	3.00	60.00	6.00
135C:								
Hudson------------	3e	4.50	80.00	16.00	4.00	4.00	65.00	8.00
135D:								
Hudson------------	4e	4.00	75.00	15.00	3.50	4.00	60.00	7.00
135E:								
Hudson------------	6e	---	---	---	---	---	---	5.50
140D:								
Dunkirk-----------	4e	4.50	80.00	16.00	4.00	4.50	60.00	7.50
140E:								
Dunkirk-----------	6e	---	---	---	---	---	---	5.50
185C:								
Onoville----------	7s	---	---	---	---	---	---	6.00
185D:								
Onoville----------	7s	---	---	---	---	---	---	5.50
187B:								
Shongo------------	7s	---	---	---	---	---	---	5.50
187C:								
Shongo------------	7s	---	---	---	---	---	---	5.50
188B:								
Cavode------------	3w	3.00	60.00	12.00	3.00	3.00	60.00	6.00
188C:								
Cavode------------	3e	3.00	55.00	12.00	3.00	3.00	55.00	6.00
188D:								
Cavode------------	4e	2.50	55.00	12.00	3.00	2.50	45.00	5.00
189B:								
Portville---------	7s	---	---	---	---	---	---	5.50
189C:								
Portville---------	7s	---	---	---	---	---	---	5.50
195C:								
Mandy-------------	7s	---	---	---	---	---	---	6.00
195D:								
Mandy-------------	7s	---	---	---	---	---	---	5.50
195E:								
Mandy-------------	7s	---	---	---	---	---	---	4.50
199C:								
Buchanan----------	7s	---	---	---	---	---	---	6.00
199D:								
Buchanan----------	7s	---	---	---	---	---	---	5.50
289B:								
Ceres-------------	2e	4.50	90.00	18.00	3.50	4.50	70.00	7.50

Table 6.—Land Capability and Yields per Acre of Crops and Pasture—Continued

Map symbol and soil name	Land capability	Alfalfa hay	Corn	Corn silage	Grass hay	Grass-legume hay	Oats	Pasture
		Tons	Bu	Tons	Tons	Tons	Bu	AUM
289C:								
Ceres-------------	3e	4.50	85.00	17.00	3.50	4.50	65.00	7.50
289D:								
Ceres-------------	4e	4.00	75.00	15.00	3.00	3.50	60.00	6.00
289E:								
Ceres-------------	6e	---	---	---	---	---	---	5.50
289F:								
Ceres-------------	7e	---	---	---	---	---	---	---
400:								
Wakeville---------	3w	3.00	85.00	17.00	3.50	3.00	65.00	6.00
496B:								
Gilpin------------	2e	4.50	90.00	18.00	3.50	4.50	70.00	7.50
496C:								
Gilpin------------	3e	4.50	85.00	17.00	3.50	4.50	65.00	7.50
496D:								
Gilpin------------	4e	4.00	80.00	16.00	3.00	3.50	60.00	6.50
496E:								
Gilpin------------	6e	---	---	---	---	---	---	5.50
496F:								
Gilpin------------	7e	---	---	---	---	---	---	---
497D:								
Rayne-------------	4e	4.00	80.00	16.00	3.00	3.50	60.00	6.50
497E:								
Rayne-------------	6e	---	---	---	---	---	---	5.50
497F:								
Rayne-------------	7e	---	---	---	---	---	---	---
498E:								
Rayne-------------	7s	---	---	---	---	---	---	4.50
800:								
Holderton---------	3w	3.00	85.00	17.00	3.50	3.00	65.00	6.00
PG:								
Pits, gravel------	---	---	---	---	---	---	---	---
Ur:								
Urban land--------	---	---	---	---	---	---	---	---
W:								
Water-------------	---	---	---	---	---	---	---	---

Table 7.—Acreage of Map Unit Major Components by Capability Class and Subclass

Capability class	Capability subclass	Acreage
Unclassified	---	17,731
1	---	4,570
2	e	37,189
2	w	47,299
2	s	26,719
3	e	169,014
3	w	115,038
4	e	98,813
4	w	11,660
5	w	17,785
6	e	78,492
6	s	1,227
7	e	22,471
7	s	30,760
8	w	1,250
8	s	308

Table 8.—Forestland Productivity

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
1:				
Udifluvents	---	---	---	---
Fluvaquents	---	---	---	---
2:				
Hamlin	sugar maple	70	43	black locust, black walnut, eastern white pine, Norway spruce
	white ash	85	57	
	white oak	85	72	
3:				
Tioga	sugar maple	67	43	black walnut, eastern white pine, Norway spruce
	white ash	85	57	
	white oak	85	72	
4:				
Teel	sugar maple	70	43	black walnut, eastern white pine, Norway spruce
	white ash	85	57	
	white oak	85	72	
5:				
Wayland	red maple	65	43	white spruce
6A:				
Wyalusing	red maple	60	43	eastern white pine, white spruce
7A:				
Philo	sugar maple	67	43	black walnut, eastern white pine, Norway spruce, white spruce
	white ash	85	72	
	white oak	85	72	
8:				
Middlebury	sugar maple	70	43	black walnut, eastern white pine, Norway spruce, white spruce
	white ash	85	57	
	white oak	85	72	
9:				
Pawling	sugar maple	70	43	black cherry, black walnut, eastern white pine, Norway spruce
	white ash	85	57	
	white oak	85	72	
10:				
Atkins	red maple	50	29	white spruce
11B:				
Ischua	black cherry	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak	65	57	
	sugar maple	60	43	
	white ash	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
11C:				
Ischua------------------	black cherry--------	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak----	65	57	
	sugar maple---------	60	43	
	white ash-----------	70	43	
11D:				
Ischua------------------	black cherry--------	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak----	65	57	
	sugar maple---------	60	43	
	white ash-----------	70	43	
11E:				
Ischua------------------	black cherry--------	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak----	65	43	
	sugar maple---------	60	43	
	white ash-----------	70	43	
11F:				
Ischua------------------	black cherry--------	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak----	65	57	
	sugar maple---------	60	43	
	white ash-----------	70	43	
12B:				
Franklinville-----------	black cherry--------	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak----	70	57	
	sugar maple---------	65	43	
	white ash-----------	70	43	
12C:				
Franklinville-----------	black cherry--------	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak----	70	57	
	sugar maple---------	65	43	
	white ash-----------	70	43	
12D:				
Franklinville-----------	black cherry--------	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak----	70	57	
	sugar maple---------	65	43	
	white ash-----------	70	43	
12E:				
Franklinville-----------	black cherry--------	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak----	70	57	
	sugar maple---------	65	43	
	white ash-----------	70	43	
14B:				
Hornellsville-----------	northern red oak----	70	57	eastern white pine, European larch, Norway spruce, white spruce
	sugar maple---------	60	43	
	white ash-----------	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
14C:				
Hornellsville-----------	northern red oak----	70	57	eastern white pine, European larch, Norway spruce, white spruce
	sugar maple---------	60	43	
	white ash-----------	70	43	
15B:				
Willdin-----------------	American beech------	---	---	black locust, eastern white pine, European larch, Norway spruce, white spruce
	black cherry--------	70	43	
	northern red oak----	60	43	
	sugar maple---------	60	43	
	white ash-----------	70	43	
15C:				
Willdin-----------------	American beech------	---	---	black locust, eastern white pine, European larch, Norway spruce, white spruce
	black cherry--------	70	43	
	northern red oak----	60	43	
	sugar maple---------	60	43	
	white ash-----------	70	43	
15D:				
Willdin-----------------	American beech------	---	---	black locust, eastern white pine, European larch, Norway spruce, white spruce
	black cherry--------	70	43	
	northern red oak----	60	43	
	sugar maple---------	60	43	
	white ash-----------	70	43	
16A:				
Almond------------------	northern red oak----	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple-----------	70	43	
	sugar maple---------	65	43	
	white ash-----------	70	43	
16B:				
Almond------------------	northern red oak----	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple-----------	70	43	
	sugar maple---------	65	43	
	white ash-----------	70	43	
16C:				
Almond------------------	northern red oak----	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple-----------	70	43	
	sugar maple---------	65	43	
	white ash-----------	70	43	
17B:				
Salamanca---------------	black cherry--------	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak----	65	43	
	sugar maple---------	60	43	
	white ash-----------	70	43	
17C:				
Salamanca---------------	black cherry--------	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak----	65	43	
	sugar maple---------	60	43	
	white ash-----------	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
17D:				
Salamanca	black cherry	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak	65	43	
	sugar maple	60	43	
	white ash	70	43	
17E:				
Salamanca	black cherry	70	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak	65	43	
	sugar maple	60	43	
	white ash	70	43	
18A:				
Pope	sugar maple	67	43	black walnut, eastern white pine, Norway spruce, white spruce
	white ash	85	57	
	white oak	85	72	
19A:				
Olean	black cherry	80	57	black cherry, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak	75	57	
	sugar maple	70	43	
	white ash	85	57	
19B:				
Olean	black cherry	80	57	black cherry, eastern white pine, European larch, Norway spruce, white spruce
	northern red oak	75	57	
	sugar maple	70	43	
	white ash	85	57	
20A:				
Unadilla	black cherry	80	57	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	eastern white pine	85	143	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	95	72	
20B:				
Unadilla	black cherry	80	57	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	eastern white pine	85	143	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	95	72	
20C:				
Unadilla	black cherry	80	57	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	eastern white pine	85	143	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	95	72	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
20D:				
Unadilla	black cherry	80	57	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	eastern white pine	85	143	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	95	72	
22A:				
Allard	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	black cherry	70	43	
	eastern white pine	75	143	
	sugar maple	63	43	
	white ash	76	43	
22B:				
Allard	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	black cherry	70	43	
	eastern white pine	75	143	
	sugar maple	63	43	
	white ash	76	43	
25A:				
Chenango	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	76	43	
25B:				
Chenango	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	76	43	
25C:				
Chenango	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	76	43	
25D:				
Chenango	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	76	43	
25E:				
Chenango	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	76	43	
25F:				
Chenango	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	76	43	
26A:				
Chenango, fan	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	76	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
26B:				
Chenango, fan-----------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	76	43	
27A:				
Castile-----------------	black cherry--------	70	43	eastern white pine, Norway spruce, red pine, white spruce
	northern red oak----	70	57	
	sugar maple---------	63	43	
	white ash-----------	85	57	
27B:				
Castile-----------------	black cherry--------	70	43	eastern white pine, Norway spruce, red pine, white spruce
	northern red oak----	70	57	
	sugar maple---------	63	43	
	white ash-----------	85	57	
28A:				
Scio--------------------	black cherry--------	80	57	eastern white pine, European larch, Norway spruce, red pine, white spruce
	eastern white pine--	85	143	
	northern red oak----	75	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
29A:				
Chenango----------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	76	43	
29B:				
Chenango----------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	76	43	
29C:				
Chenango----------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	76	43	
29D:				
Chenango----------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	76	43	
29E:				
Chenango----------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	76	43	
31B:				
Collamer----------------	black cherry--------	80	57	eastern white pine, European larch, Norway spruce, white spruce
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
31C:				
Collamer----------------	black cherry--------	80	57	eastern white pine,
	northern red oak----	80	57	European larch,
	sugar maple---------	70	43	Norway spruce,
	white ash-----------	85	57	white spruce
32A:				
Churchville-------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	60	43	Norway spruce,
	white ash-----------	75	43	white spruce
32B:				
Churchville-------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	60	43	Norway spruce,
	white ash-----------	75	43	white spruce
33A:				
Wallington--------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	65	43	Norway spruce,
	white ash-----------	75	43	white spruce
34:				
Getzville---------------	eastern white pine--	65	114	eastern white pine,
	red maple-----------	65	43	white spruce
35A:				
Rhinebeck---------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	65	43	European larch,
	white ash-----------	75	43	Norway spruce,
				white spruce
35B:				
Rhinebeck---------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	65	43	European larch,
	white ash-----------	75	43	Norway spruce,
				white spruce
35C:				
Rhinebeck---------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	65	43	European larch,
	white ash-----------	75	43	Norway spruce,
				white spruce
36:				
Canadice----------------	eastern white pine--	55	86	eastern white pine,
	red maple-----------	50	29	white spruce
37A:				
Tonawanda---------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	60	43	European larch,
	white ash-----------	75	43	Norway spruce,
				white spruce
37B:				
Tonawanda---------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	60	43	European larch,
	white ash-----------	75	43	Norway spruce,
				white spruce
38A:				
Niagara-----------------	red maple-----------	70	43	eastern white pine,
	sugar maple---------	60	43	European larch,
	white ash-----------	75	43	white spruce

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
			cu ft/ac	
38B:				
Niagara	red maple	70	43	eastern white pine, European larch, Norway spruce, white spruce
	sugar maple	60	43	
	white ash	75	43	
39A:				
Halsey	eastern hemlock	70	---	eastern white pine, white spruce
	red maple	65	29	
40A:				
Williamson	black cherry	80	57	black locust, eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
40B:				
Williamson	black cherry	80	57	black locust, eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
40C:				
Williamson	black cherry	80	57	black locust, eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
41A:				
Barcelona	American beech	---	---	eastern white pine, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	70	43	
	white ash	75	43	
41B:				
Barcelona	American beech	---	---	eastern white pine, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	70	43	
	white ash	75	43	
42A:				
Elnora	black cherry	80	57	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
42B:				
Elnora	black cherry	80	57	eastern white pine, European larch, Norway spruce, red pine
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
43:				
Canandaigua, silt loam	eastern white pine	65	114	eastern white pine, white spruce
	red maple	65	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
44:				
Canandaigua, mucky silt loam-------------------	eastern white pine--	55	114	eastern white pine, white spruce
	red maple-----------	55	43	
45:				
Canandaigua, acid substratum-------------	eastern white pine--	65	114	eastern white pine, white spruce
	red maple-----------	65	43	
46:				
Swormville--------------	red maple-----------	70	43	eastern white pine, Norway spruce, white spruce
	sugar maple---------	60	43	
	white ash-----------	75	43	
47A:				
Minoa-------------------	red maple-----------	70	43	eastern white pine, European larch, Norway spruce, white spruce
	sugar maple---------	60	43	
	white ash-----------	75	43	
48A:				
Colonie-----------------	black cherry--------	80	57	eastern white pine, European larch, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
48B:				
Colonie-----------------	black cherry--------	80	57	eastern white pine, European larch, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
48C:				
Colonie-----------------	black cherry--------	80	57	eastern white pine, European larch, red pine
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
49A:				
Red Hook----------------	red maple-----------	70	43	eastern white pine, Norway spruce, white spruce
	sugar maple---------	60	43	
	white ash-----------	75	43	
50A:				
Canaseraga--------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
50B:				
Canaseraga--------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
50C:				
Canaseraga--------------	American beech------	---	---	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
51B:				
Chadakoin----------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
51C:				
Chadakoin----------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
51D:				
Chadakoin----------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
51E:				
Chadakoin----------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
51F:				
Chadakoin----------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
52B:				
Valois-------------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
52C:				
Valois-------------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
52D:				
Valois-------------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	
52E:				
Valois-------------------	American beech------	---	---	eastern white pine,
	black cherry--------	80	57	European larch,
	northern red oak----	80	57	Norway spruce, red
	sugar maple---------	70	43	pine, white spruce
	white ash-----------	85	57	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
52F:				
Valois	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
53C:				
Valois	American beech	---	---	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
Volusia	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	60	43	
	white ash	75	43	
Mardin	black cherry	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	northern red oak	63	43	
	sugar maple	60	43	
	white ash	70	43	
55A:				
Darien	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
55B:				
Darien	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
55C:				
Darien	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
56B:				
Chautauqua	American beech	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	65	43	
	white ash	70	43	
56C:				
Chautauqua	American beech	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	65	43	
	white ash	70	43	
56D:				
Chautauqua	American beech	70	43	eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	65	43	
	white ash	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
57A:				
Busti	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
57B:				
Busti	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
57C:				
Busti	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
58B:				
Rushford	black cherry	65	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	65	43	
	white ash	75	43	
58C:				
Rushford	black cherry	65	43	black locust, eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	65	43	
	white ash	75	43	
59B:				
Yorkshire	American beech	70	43	black locust, eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
59C:				
Yorkshire	American beech	70	43	black locust, eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
59D:				
Yorkshire	American beech	70	43	black locust, eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
60A:				
Napoli	American beech	65	43	eastern white pine, European larch, Norway spruce, white spruce
	black cherry	65	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
60B:				
Napoli	American beech	65	43	eastern white pine,
	black cherry	65	43	European larch,
	northern red oak	70	57	Norway spruce,
	sugar maple	60	43	white spruce
	white ash	70	43	
60C:				
Napoli	American beech	65	43	eastern white pine,
	black cherry	65	43	European larch,
	northern red oak	70	57	Norway spruce,
	sugar maple	60	43	white spruce
	white ash	70	43	
60D:				
Napoli	American beech	65	43	eastern white pine,
	black cherry	65	43	European larch,
	northern red oak	70	57	Norway spruce,
	sugar maple	60	43	white spruce
	white ash	70	43	
61B:				
Schuyler	American beech	70	43	eastern white pine,
	black cherry	70	43	European larch,
	northern red oak	70	57	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	75	47	
61C:				
Schuyler	American beech	70	43	eastern white pine,
	black cherry	70	43	European larch,
	northern red oak	70	57	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	75	47	
61D:				
Schuyler	American beech	70	43	eastern white pine,
	black cherry	70	43	European larch,
	northern red oak	70	57	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	75	47	
61E:				
Schuyler	American beech	70	43	eastern white pine,
	black cherry	70	43	European larch,
	northern red oak	70	57	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	75	47	
61F:				
Schuyler	American beech	70	43	eastern white pine,
	black cherry	70	43	European larch,
	northern red oak	70	57	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	75	47	
62B:				
Mardin	black cherry	70	43	eastern white pine,
	northern red oak	63	43	European larch,
	sugar maple	60	43	Norway spruce, red
	white ash	70	43	pine, white spruce

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
62C:				
Mardin	black cherry	70	43	eastern white pine,
	northern red oak	63	43	European larch,
	sugar maple	60	43	Norway spruce, red
	white ash	70	43	pine, white spruce
62D:				
Mardin	black cherry	70	43	eastern white pine,
	northern red oak	63	43	European larch,
	sugar maple	60	43	Norway spruce, red
	white ash	70	43	pine, white spruce
63B:				
Langford	American beech	70	43	eastern white pine,
	black cherry	75	43	European larch,
	northern red oak	65	43	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	70	43	
63C:				
Langford	American beech	70	43	eastern white pine,
	black cherry	75	43	European larch,
	northern red oak	65	43	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	70	43	
63D:				
Langford	American beech	70	43	eastern white pine,
	black cherry	75	43	European larch,
	northern red oak	65	43	Norway spruce, red
	sugar maple	60	43	pine, white spruce
	white ash	70	43	
64C:				
Mardin	black cherry	70	43	eastern white pine,
	northern red oak	63	43	European larch,
	sugar maple	60	43	Norway spruce, red
	white ash	70	43	pine, white spruce
66B:				
Volusia	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	60	43	Norway spruce,
	white ash	75	43	white spruce
67A:				
Dalton	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce
67B:				
Dalton	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce
68A:				
Volusia	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	60	43	Norway spruce,
	white ash	75	43	white spruce

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
68B:				
Volusia	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	60	43	
	white ash	75	43	
68C:				
Volusia	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	60	43	
	white ash	75	43	
69A:				
Erie	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
69B:				
Erie	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
69C:				
Erie	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
71E:				
Mongaup	American beech	70	43	European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
71F:				
Mongaup	American beech	70	43	European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
72B:				
Towerville	American beech	70	43	eastern white pine, European larch, Norway spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
72C:				
Towerville	American beech	70	43	eastern white pine, European larch, Norway spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
72D:				
Towerville	American beech	70	43	eastern white pine, European larch, Norway spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
72E:				
Towerville	American beech	70	43	eastern white pine,
	black cherry	70	43	European larch,
	northern red oak	70	57	Norway spruce
	sugar maple	60	43	
	white ash	75	47	
72F:				
Towerville	American beech	70	43	eastern white pine,
	black cherry	70	43	European larch,
	northern red oak	70	57	Norway spruce
	sugar maple	60	43	
	white ash	75	47	
73B:				
Gretor	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce
73C:				
Gretor	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce
74:				
Ashville	red maple	55	29	eastern white pine,
	sugar maple	60	43	white spruce
75:				
Alden	red maple	50	29	white spruce
76A:				
Orpark	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce
76B:				
Orpark	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce
76C:				
Orpark	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce
77A:				
Chippewa	red maple	50	29	white spruce
78A:				
Hornell	black cherry	65	43	eastern white pine,
	red maple	70	43	European larch,
	sugar maple	64	43	Norway spruce,
	white ash	75	43	white spruce

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
78B:				
Hornell	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
78C:				
Hornell	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
78D:				
Hornell	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
78F:				
Hornell	American beech	70	43	eastern white pine, European larch, Norway spruce, white spruce
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
Hudson	American beech	70	43	black cherry, black walnut, eastern white pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
79B:				
Mongaup	American beech	70	43	European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
79C:				
Mongaup	American beech	70	43	European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
79D:				
Mongaup	American beech	70	43	European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
79E:				
Mongaup	American beech	70	43	European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
79F:				
Mongaup	American beech	70	43	European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	70	57	
	sugar maple	60	43	
	white ash	75	47	
80A:				
Fremont	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
80B:				
Fremont	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
80C:				
Fremont	black cherry	65	43	eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
81B:				
Varysburg	American beech	70	43	eastern white pine, European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
81C:				
Varysburg	American beech	70	43	eastern white pine, European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
81D:				
Varysburg	American beech	70	43	eastern white pine, European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
81E:				
Varysburg	American beech	70	43	eastern white pine, European larch, Norway spruce, red pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
82F:				
Rock outcrop	---	---	---	---
Manlius	black cherry	70	43	black cherry, eastern white pine, European larch, Norway spruce, red pine
	northern red oak	70	57	
	sugar maple	70	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
84B:				
Elko	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
84C:				
Elko	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
85B:				
Onoville	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
85C:				
Onoville	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
85D:				
Onoville	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
86B:				
Eldred	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
86C:				
Eldred	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
86D:				
Eldred	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
87B:				
Shongo------------------	black cherry--------	65	43	European larch,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	sugar maple, white
	white ash-----------	75	43	ash
87C:				
Shongo------------------	black cherry--------	65	43	European larch,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	sugar maple, white
	white ash-----------	75	43	ash
88A:				
Ivory-------------------	black cherry--------	65	43	eastern white pine,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	white spruce
	white ash-----------	75	43	
88B:				
Ivory-------------------	black cherry--------	65	43	eastern white pine,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	white spruce
	white ash-----------	75	43	
88C:				
Ivory-------------------	black cherry--------	65	43	eastern white pine,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	white spruce
	white ash-----------	75	43	
88D:				
Ivory-------------------	black cherry--------	65	43	eastern white pine,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	white spruce
	white ash-----------	75	43	
89B:				
Portville---------------	black cherry--------	65	43	European larch,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	sugar maple, white
	white ash-----------	75	43	ash
89C:				
Portville---------------	black cherry--------	65	43	European larch,
	northern red oak----	65	43	Norway spruce,
	sugar maple---------	65	43	sugar maple, white
	white ash-----------	75	43	ash
90A:				
Brinkerton--------------	red maple-----------	50	29	white spruce
90B:				
Brinkerton--------------	red maple-----------	50	29	white spruce
91A:				
Palms-------------------	quaking aspen-------	---	0	tamarack
	red maple-----------	55	29	
	silver maple--------	80	29	
	tamarack------------	61	57	
	white ash-----------	---	0	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
92:				
Carlisle----------------	green ash-----------	---	0	tamarack
	quaking aspen-------	---	0	
	red maple-----------	56	29	
	silver maple--------	82	29	
	swamp white oak-----	---	0	
	white ash-----------	---	0	
93:				
Saprists, inundated-----	---	---	---	---
94B:				
Frewsburg---------------	black cherry--------	65	43	eastern white pine, Japanese larch, Norway spruce, white spruce
	northern red oak----	65	43	
	sugar maple---------	65	43	
	white ash-----------	75	43	
94C:				
Frewsburg---------------	black cherry--------	65	43	eastern white pine, Japanese larch, Norway spruce, white spruce
	northern red oak----	65	43	
	sugar maple---------	65	43	
	white ash-----------	75	43	
95B:				
Mandy-------------------	American beech------	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
	white oak-----------	---	---	
95C:				
Mandy-------------------	American beech------	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
	white oak-----------	---	---	
95D:				
Mandy-------------------	American beech------	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
	white oak-----------	---	---	
95E:				
Mandy-------------------	American beech------	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
	white oak-----------	---	---	
95F:				
Mandy-------------------	American beech------	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry--------	80	57	
	northern red oak----	80	57	
	sugar maple---------	70	43	
	white ash-----------	85	57	
	white oak-----------	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
96B:				
Carrollton	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
96C:				
Carrollton	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
96D:				
Carrollton	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
96E:				
Carrollton	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
96F:				
Carrollton	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
97B:				
Kinzua	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
97C:				
Kinzua	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
97D:				
Kinzua	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
97E:				
Kinzua	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
97F:				
Kinzua	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
98D:				
Kinzua	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
98E:				
Kinzua	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
99B:				
Buchanan	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
99C:				
Buchanan	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
99D:				
Buchanan	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
100:				
Udorthents	---	---	---	---

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
101: Udorthents, refuse substratum	---	---	---	---
102C: Mandy	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
Rock outcrop	---	---	---	---
103C: Knapp Creek	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
Rock outcrop	---	---	---	---
104B: Flatiron	American beech	70	43	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
104C: Flatiron	American beech	70	43	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
104D: Flatiron	American beech	70	43	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
104E: Flatiron	American beech	70	43	black cherry, eastern white pine, European larch, Norway spruce, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
108D: Hartleton	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
108E:				
Hartleton	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
108F:				
Hartleton	American beech	70	43	eastern white pine, European larch, red pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
131:				
Lamson	eastern white pine	65	114	eastern white pine
	red maple	65	43	
	swamp white oak	---	---	
132B:				
Wiscoy	black cherry	65	43	black cherry, eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
132C:				
Wiscoy	black cherry	65	43	black cherry, eastern white pine, European larch, Norway spruce, white spruce
	red maple	70	43	
	sugar maple	64	43	
	white ash	75	43	
135C:				
Hudson	American beech	70	43	black cherry, black walnut, eastern white pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
135D:				
Hudson	American beech	70	43	black cherry, black walnut, eastern white pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
135E:				
Hudson	American beech	70	43	black cherry, black walnut, eastern white pine
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
140D:				
Dunkirk	American beech	70	43	European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
140E:				
Dunkirk	American beech	70	43	European larch, Norway spruce, red pine, white spruce
	black cherry	70	43	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
185C:				
Onoville	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
185D:				
Onoville	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
187B:				
Shongo	black cherry	65	43	European larch, Norway spruce, sugar maple, white ash
	northern red oak	65	43	
	sugar maple	65	43	
	white ash	75	43	
187C:				
Shongo	black cherry	65	43	European larch, Norway spruce, sugar maple, white ash
	northern red oak	65	43	
	sugar maple	65	43	
	white ash	75	43	
188B:				
Cavode	black cherry	65	43	eastern white pine, Norway spruce, white spruce
	northern red oak	65	43	
	sugar maple	65	43	
	white ash	75	43	
188C:				
Cavode	black cherry	65	43	eastern white pine, Norway spruce, white spruce
	northern red oak	65	43	
	sugar maple	65	43	
	white ash	75	43	
188D:				
Cavode	black cherry	65	43	eastern white pine, Norway spruce, white spruce
	northern red oak	65	43	
	sugar maple	65	43	
	white ash	75	43	
189B:				
Portville	black cherry	65	43	European larch, Norway spruce, sugar maple, white ash
	northern red oak	65	43	
	sugar maple	65	43	
	white ash	75	43	
189C:				
Portville	black cherry	65	43	European larch, Norway spruce, sugar maple, white ash
	northern red oak	65	43	
	sugar maple	65	43	
	white ash	75	43	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
195C:				
Mandy	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
195D:				
Mandy	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
195E:				
Mandy	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
199C:				
Buchanan	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
199D:				
Buchanan	American beech	70	43	eastern white pine, larch, Norway spruce, white spruce
	black cherry	80	57	
	northern red oak	75	47	
	sugar maple	70	43	
	white ash	80	47	
	white oak	---	---	
289B:				
Ceres	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
289C:				
Ceres	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
289D:				
Ceres	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
289E:				
Ceres	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
289F:				
Ceres	American beech	70	43	black cherry, eastern white pine, larch, red pine, white spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
400:				
Wakeville	red maple	70	43	eastern white pine, European larch, Norway spruce, white spruce
	sugar maple	60	43	
	white ash	75	43	
496B:				
Gilpin	American beech	70	43	black cherry, eastern white pine, Japanese larch, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
496C:				
Gilpin	American beech	70	43	black cherry, eastern white pine, Japanese larch, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
496D:				
Gilpin	American beech	70	43	black cherry, eastern white pine, Japanese larch, tuliptree, Virginia pine
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
496E:				
Gilpin	American beech	70	43	black cherry, eastern white pine, Japanese larch, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
496F:				
Gilpin	American beech	70	43	black cherry, eastern white pine, Japanese larch, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	

Table 8.—Forestland Productivity—Continued

Map symbol and soil name	Potential productivity: Common trees	Site index	Volume of wood fiber	Trees to manage
			cu ft/ac	
497D:				
Rayne	American beech	70	43	black cherry, eastern white pine, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
497E:				
Rayne	American beech	70	43	black cherry, eastern white pine, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
497F:				
Rayne	American beech	70	43	black cherry, eastern white pine, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
498E:				
Rayne	American beech	70	43	black cherry, eastern white pine, Norway spruce
	black cherry	80	57	
	northern red oak	80	57	
	sugar maple	70	43	
	white ash	85	57	
	white oak	---	---	
800:				
Holderton	red maple	70	43	eastern white pine, European larch, Norway spruce, white spruce
	sugar maple	60	43	
	white ash	75	43	
PG:				
Pits, gravel	---	---	---	---
Ur:				
Urban land	---	---	---	---
W:				
Water	---	---	---	---

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland

(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	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Udifluvents	40	Slight		Slight		Poorly suited	
						Flooding	1.00
						Sandiness	0.50
Fluvaquents	35	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
2:							
Hamlin	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
3:							
Tioga	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
4:							
Teel	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Wetness	0.50
5:							
Wayland	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
6A:							
Wyalusing	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
7A:							
Philo	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Wetness	0.50
8:							
Middlebury	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Wetness	0.50
9:							
Pawling	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
10:							
Atkins	85	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	1.00
						Low strength	0.50
11B:							
Ischua	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
11C:							
Ischua	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
11D:							
Ischua	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
11E:							
Ischua	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
11F:							
Ischua	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
12B:							
Franklinville	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
12C:							
Franklinville	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
12D:							
Franklinville	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
12E:							
Franklinville	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
14B:							
Hornellsville	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
						Slope	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
14C:							
Hornellsville-------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
15B:							
Willdin-------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
15C:							
Willdin-------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
15D:							
Willdin-------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
16A:							
Almond--------------	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
16B:							
Almond--------------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
						Slope	0.50
16C:							
Almond--------------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Wetness	0.50
						Low strength	0.50
17B:							
Salamanca-----------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
17C:							
Salamanca-----------	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
17D:							
Salamanca-----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
17E:							
Salamanca-----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
18A:							
Pope----------------	85	Slight		Slight		Poorly suited	
						Flooding	1.00
19A:							
Olean---------------	85	Slight		Slight		Moderately suited	
						Sandiness	0.50
						Low strength	0.50
						Wetness	0.50
19B:							
Olean---------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Sandiness	0.50
						Low strength	0.50
						Wetness	0.50
20A:							
Unadilla------------	85	Slight		Slight		Moderately suited	
						Low strength	0.50
20B:							
Unadilla------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
20C:							
Unadilla------------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
20D:							
Unadilla------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
22A:							
Allard--------------	85	Slight		Slight		Moderately suited	
						Low strength	0.50
22B:							
Allard--------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
25A:							
Chenango------------	85	Slight		Slight		Moderately suited	
						Low strength	0.50
25B:							
Chenango------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
25C:							
Chenango------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
25D:							
Chenango	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
25E:							
Chenango	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
25F:							
Chenango	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
26A:							
Chenango, fan	80	Slight		Slight		Well suited	
26B:							
Chenango, fan	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
27A:							
Castile	85	Slight		Slight		Moderately suited	
						Wetness	0.50
27B:							
Castile	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Wetness	0.50
28A:							
Scio	85	Slight		Slight		Moderately suited	
						Low strength	0.50
						Wetness	0.50
29A:							
Chenango	85	Slight		Slight		Well suited	
29B:							
Chenango	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
29C:							
Chenango	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
29D:							
Chenango	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
29E:							
Chenango	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
31B:							
Collamer	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
31C:							
Collamer------------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
32A:							
Churchville---------	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
32B:							
Churchville---------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
33A:							
Wallington----------	85	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
34:							
Getzville-----------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
35A:							
Rhinebeck-----------	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
35B:							
Rhinebeck-----------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
35C:							
Rhinebeck-----------	80	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
36:							
Canadice------------	75	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
37A:							
Tonawanda-----------	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
37B:							
Tonawanda-----------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
38A:							
Niagara-------------	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
38B:							
Niagara-------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
39A:							
Halsey--------------	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Wetness	1.00
						Low strength	0.50
40A:							
Williamson----------	85	Slight		Slight		Moderately suited	
						Low strength	0.50
						Wetness	0.50
40B:							
Williamson----------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
40C:							
Williamson----------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
41A:							
Barcelona-----------	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
41B:							
Barcelona-----------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
42A:							
Elnora--------------	80	Slight		Slight		Moderately suited	
						Wetness	0.50
42B:							
Elnora--------------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
						Wetness	0.50
43:							
Canandaigua, silt loam---------------	80	Slight		Slight		Poorly suited	
						Ponding	1.00
						Wetness	1.00
						Low strength	0.50
44:							
Canandaigua, mucky silt loam----------	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Low strength	1.00
						Wetness	1.00

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
45:							
Canandaigua, acid substratum	80	Slight		Slight		Poorly suited	
						Ponding	1.00
						Wetness	1.00
						Low strength	0.50
46:							
Swormville	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Sandiness	0.50
						Low strength	0.50
47A:							
Minoa	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
48A:							
Colonie	80	Slight		Slight		Well suited	
48B:							
Colonie	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
48C:							
Colonie	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
49A:							
Red Hook	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
50A:							
Canaseraga	85	Slight		Slight		Moderately suited	
						Low strength	0.50
						Wetness	0.50
50B:							
Canaseraga	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
						Slope	0.50
50C:							
Canaseraga	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
51B:							
Chadakoin	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
51C:							
Chadakoin	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
51D:							
Chadakoin-----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
51E:							
Chadakoin-----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
51F:							
Chadakoin-----------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
52B:							
Valois--------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Sandiness	0.50
						Low strength	0.50
						Slope	0.50
52C:							
Valois--------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Sandiness	0.50
						Low strength	0.50
52D:							
Valois--------------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
52E:							
Valois--------------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
52F:							
Valois--------------	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Sandiness	0.50
						Low strength	0.50
53C:							
Valois--------------	30	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Sandiness	0.50
						Low strength	0.50
Volusia-------------	25	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
						Low strength	0.50
Mardin--------------	20	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
55A:							
Darien	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
55B:							
Darien	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
55C:							
Darien	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
56B:							
Chautauqua	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
56C:							
Chautauqua	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
56D:							
Chautauqua	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
57A:							
Busti	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
57B:							
Busti	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
						Slope	0.50
57C:							
Busti	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
58B:							
Rushford	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
58C:							
Rushford	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
59B:							
Yorkshire-----------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
59C:							
Yorkshire-----------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
59D:							
Yorkshire-----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
60A:							
Napoli--------------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
60B:							
Napoli--------------	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
60C:							
Napoli--------------	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
						Low strength	0.50
60D:							
Napoli--------------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Wetness	1.00
						Low strength	0.50
61B:							
Schuyler------------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
61C:							
Schuyler------------	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
61D:							
Schuyler------------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
61E:							
Schuyler------------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
61F:							
Schuyler------------	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
62B:							
Mardin--------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
62C:							
Mardin--------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
62D:							
Mardin--------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
63B:							
Langford------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
63C:							
Langford------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
63D:							
Langford------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
64C:							
Mardin--------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
66B:							
Volusia-------------	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
67A:							
Dalton--------------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
67B:							
Dalton	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
68A:							
Volusia	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
68B:							
Volusia	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
68C:							
Volusia	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
						Low strength	0.50
69A:							
Erie	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
69B:							
Erie	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
69C:							
Erie	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
						Low strength	0.50
71E:							
Mongaup	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
71F:							
Mongaup	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
72B:							
Towerville	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Wetness	0.50
72C:							
Towerville	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
72D:							
Towerville----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
72E:							
Towerville----------	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
72F:							
Towerville----------	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
73B:							
Gretor--------------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Slope	0.50
73C:							
Gretor--------------	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
74:							
Ashville------------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
75:							
Alden---------------	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Low strength	1.00
						Wetness	1.00
76A:							
Orpark--------------	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
76B:							
Orpark--------------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
76C:							
Orpark--------------	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
77A:							
Chippewa------------	80	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
78A:							
Hornell	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
78B:							
Hornell	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
						Slope	0.50
78C:							
Hornell	80	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
78D:							
Hornell	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Wetness	0.50
						Low strength	0.50
78F:							
Hornell	40	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Wetness	0.50
						Low strength	0.50
Hudson	35	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
79B:							
Mongaup	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
79C:							
Mongaup	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
79D:							
Mongaup	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
79E:							
Mongaup	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
79F:							
Mongaup	85	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
80A:							
Fremont-------------	80	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
80B:							
Fremont-------------	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
						Slope	0.50
80C:							
Fremont-------------	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
81B:							
Varysburg-----------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
81C:							
Varysburg-----------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
81D:							
Varysburg-----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
81E:							
Varysburg-----------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
82F:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Manlius-------------	30	Very severe		Severe		Poorly suited	
		Slope/erodibility	0.95	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
84B:							
Elko----------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
84C:							
Elko----------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
85B:							
Onoville------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
85C:							
Onoville------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
85D:							
Onoville------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
86B:							
Eldred--------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
86C:							
Eldred--------------	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
86D:							
Eldred--------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
87B:							
Shongo--------------	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
87C:							
Shongo--------------	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
						Low strength	0.50
88A:							
Ivory---------------	85	Slight		Slight		Moderately suited	
						Wetness	0.50
						Low strength	0.50
88B:							
Ivory---------------	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
						Slope	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
88C:							
Ivory	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
88D:							
Ivory	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Wetness	0.50
						Low strength	0.50
89B:							
Portville	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
89C:							
Portville	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
						Low strength	0.50
90A:							
Brinkerton	85	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50
90B:							
Brinkerton	85	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
91A:							
Palms	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Low strength	1.00
						Wetness	1.00
92:							
Carlisle	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Low strength	1.00
						Wetness	1.00
93:							
Saprists, inundated	85	Slight		Slight		Poorly suited	
						Ponding	1.00
						Low strength	1.00
						Wetness	1.00
94B:							
Frewsburg	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
94C:							
Frewsburg	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
95B:							
Mandy	85	Slight		Slight		Moderately suited	
						Slope	0.50
95C:							
Mandy	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Slope	0.50
95D:							
Mandy	85	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
95E:							
Mandy	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
95F:							
Mandy	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
96B:							
Carrollton	80	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
96C:							
Carrollton	80	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
96D:							
Carrollton	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
96E:							
Carrollton	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
96F:							
Carrollton	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
97B:							
Kinzua	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
97C:							
Kinzua	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
97D:							
Kinzua	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
97E:							
Kinzua	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
97F:							
Kinzua	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
98D:							
Kinzua	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Low strength	0.50
98E:							
Kinzua	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Low strength	0.50
99B:							
Buchanan	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
						Wetness	0.50
99C:							
Buchanan	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
99D:							
Buchanan	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
100:							
Udorthents	85	Not rated		Not rated		Not rated	
		Not rated		Not rated		Not rated	
		Not rated		Not rated			
		Not Rated		Not rated			
				Not rated			
				Not Rated			
101:							
Udorthents, refuse substratum	90	Not rated		Not rated		Not rated	
		Not rated		Not rated		Not rated	
		Not rated		Not rated			
		Not Rated		Not rated			
				Not rated			
				Not Rated			

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
102C:							
Mandy	40	Slight		Slight		Moderately suited	
						Slope	0.50
Rock outcrop	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek	40	Slight		Slight		Moderately suited	
						Slope	0.50
						Sandiness	0.50
Rock outcrop	35	Not rated		Not rated		Not rated	
104B:							
Flatiron	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Rock fragments	1.00
						Slope	0.50
104C:							
Flatiron	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Rock fragments	1.00
						Slope	0.50
104D:							
Flatiron	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
104E:							
Flatiron	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
108D:							
Hartleton	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
108E:							
Hartleton	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
108F:							
Hartleton	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
131:							
Lamson	85	Slight		Slight		Poorly suited	
						Wetness	1.00
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
132B:							
Wiscoy--------------	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Wetness	1.00
						Low strength	0.50
						Slope	0.50
132C:							
Wiscoy--------------	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Wetness	1.00
						Slope	0.50
						Low strength	0.50
135C:							
Hudson--------------	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
						Wetness	0.50
135D:							
Hudson--------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
135E:							
Hudson--------------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
						Wetness	0.50
140D:							
Dunkirk-------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
140E:							
Dunkirk-------------	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
185C:							
Onoville------------	85	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Rock fragments	1.00
						Slope	0.50
						Low strength	0.50
						Wetness	0.50
185D:							
Onoville------------	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Low strength	0.50
						Wetness	0.50
187B:							
Shongo--------------	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Rock fragments	1.00
						Wetness	1.00
						Low strength	0.50
						Slope	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion: Rating class and limiting features	Value	Hazard of erosion on roads and trails: Rating class and limiting features	Value	Suitability for roads (natural surface): Rating class and limiting features	Value
187C:							
Shongo	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Rock fragments	1.00
						Wetness	1.00
						Slope	0.50
						Low strength	0.50
188B:							
Cavode	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Wetness	0.50
						Low strength	0.50
						Slope	0.50
188C:							
Cavode	85	Moderate		Severe		Moderately suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	0.50
						Wetness	0.50
						Low strength	0.50
188D:							
Cavode	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Wetness	0.50
						Low strength	0.50
189B:							
Portville	80	Slight		Moderate		Poorly suited	
				Slope/erodibility	0.50	Rock fragments	1.00
						Wetness	1.00
						Low strength	0.50
						Slope	0.50
189C:							
Portville	80	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Rock fragments	1.00
						Wetness	1.00
						Slope	0.50
						Low strength	0.50
195C:							
Mandy	85	Slight		Slight		Poorly suited	
						Rock fragments	1.00
						Slope	0.50
195D:							
Mandy	85	Moderate		Moderate		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.50	Slope	1.00
						Rock fragments	1.00
195E:							
Mandy	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
199C:							
Buchanan	85	Slight		Severe		Poorly suited	
				Slope/erodibility	0.95	Rock fragments	1.00
						Slope	0.50
						Low strength	0.50
						Wetness	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
199D:							
Buchanan	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Low strength	0.50
						Wetness	0.50
289B:							
Ceres	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
289C:							
Ceres	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
289D:							
Ceres	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
289E:							
Ceres	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
289F:							
Ceres	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
400:							
Wakeville	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Sandiness	0.50
						Low strength	0.50
496B:							
Gilpin	85	Slight		Moderate		Moderately suited	
				Slope/erodibility	0.50	Low strength	0.50
						Slope	0.50
496C:							
Gilpin	85	Slight		Severe		Moderately suited	
				Slope/erodibility	0.95	Slope	0.50
						Low strength	0.50
496D:							
Gilpin	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
496E:							
Gilpin	85	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50

Table 9.—Hazard of Erosion and Suitability for Roads on Forestland—Continued

Map symbol and soil name	Pct. of map unit	Hazard of off-road or off-trail erosion		Hazard of erosion on roads and trails		Suitability for roads (natural surface)	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
496F:							
Gilpin	85	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
497D:							
Rayne	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
497E:							
Rayne	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
497F:							
Rayne	80	Severe		Severe		Poorly suited	
		Slope/erodibility	0.75	Slope/erodibility	0.95	Slope	1.00
						Low strength	0.50
498E:							
Rayne	80	Moderate		Severe		Poorly suited	
		Slope/erodibility	0.50	Slope/erodibility	0.95	Slope	1.00
						Rock fragments	1.00
						Low strength	0.50
800:							
Holderton	80	Slight		Slight		Poorly suited	
						Flooding	1.00
						Wetness	0.50
						Low strength	0.50
PG:							
Pits, gravel	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	85	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 10.—Forestland Planting

(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	Suitability for hand planting		Suitability for mechanical planting		Potential for seedling mortality	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
1:							
Udifluvents	40	Moderately suited		Moderately suited		Low	
		Sandiness	0.50	Rock fragments	0.50		
				Sandiness	0.50		
Fluvaquents	35	Moderately suited		Poorly suited		High	
		Wetness	0.50	Wetness	0.75	Wetness	1.00
				Rock fragments	0.50		
2:							
Hamlin	85	Well suited		Well suited		Low	
3:							
Tioga	85	Well suited		Well suited		Low	
4:							
Teel	85	Well suited		Well suited		Low	
5:							
Wayland	85	Well suited		Well suited		High	
						Wetness	1.00
6A:							
Wyalusing	85	Well suited		Well suited		High	
						Wetness	1.00
7A:							
Philo	85	Well suited		Well suited		Low	
8:							
Middlebury	85	Well suited		Well suited		Low	
9:							
Pawling	85	Well suited		Well suited		Low	
10:							
Atkins	85	Well suited		Well suited		High	
						Wetness	1.00
11B:							
Ischua	85	Well suited		Moderately suited		Low	
				Slope	0.50		
11C:							
Ischua	85	Well suited		Moderately suited		Low	
				Slope	0.50		
11D:							
Ischua	85	Well suited		Poorly suited		Low	
				Slope	0.75		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
11E:							
Ischua----------------	85	Well suited		Unsuited		Low	
				Slope	1.00		
11F:							
Ischua----------------	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
12B:							
Franklinville--------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		
12C:							
Franklinville--------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		
12D:							
Franklinville--------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
12E:							
Franklinville--------	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
14B:							
Hornellsville--------	85	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Slope	0.50	Wetness	1.00
				Stickiness; high plasticity index	0.50		
14C:							
Hornellsville--------	85	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Slope	0.50	Wetness	1.00
				Stickiness; high plasticity index	0.50		
15B:							
Willdin---------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
15C:							
Willdin---------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
15D:							
Willdin---------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
16A:							
Almond----------------	80	Well suited		Well suited		High	
						Wetness	1.00

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
16B:							
Almond	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
16C:							
Almond	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
17B:							
Salamanca	80	Well suited		Moderately suited		Low	
				Slope	0.50		
17C:							
Salamanca	80	Well suited		Moderately suited		Low	
				Slope	0.50		
17D:							
Salamanca	80	Well suited		Poorly suited		Low	
				Slope	0.75		
17E:							
Salamanca	80	Well suited		Unsuited		Low	
				Slope	1.00		
18A:							
Pope	85	Well suited		Well suited		Low	
19A:							
Olean	85	Moderately suited		Moderately suited		Low	
		Sandiness	0.50	Sandiness	0.50		
19B:							
Olean	85	Moderately suited		Moderately suited		Low	
		Sandiness	0.50	Sandiness	0.50		
20A:							
Unadilla	85	Well suited		Well suited		Low	
20B:							
Unadilla	85	Well suited		Well suited		Low	
20C:							
Unadilla	85	Well suited		Moderately suited		Low	
				Slope	0.50		
20D:							
Unadilla	85	Well suited		Poorly suited		Low	
				Slope	0.75		
22A:							
Allard	85	Well suited		Well suited		Low	
22B:							
Allard	85	Well suited		Well suited		Low	
25A:							
Chenango	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
25B:							
Chenango------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
25C:							
Chenango------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
25D:							
Chenango------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
25E:							
Chenango------------	80	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
25F:							
Chenango------------	80	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
26A:							
Chenango, fan-------	80	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
26B:							
Chenango, fan-------	80	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
27A:							
Castile-------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
27B:							
Castile-------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
28A:							
Scio----------------	85	Well suited		Well suited		Low	
29A:							
Chenango------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
29B:							
Chenango------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
29C:							
Chenango------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
29D:							
Chenango------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
29E:							
Chenango------------	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
31B:							
Collamer------------	85	Well suited		Well suited		Low	
31C:							
Collamer------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
32A:							
Churchville---------	85	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
32B:							
Churchville---------	85	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
33A:							
Wallington----------	85	Well suited		Well suited		High	
						Wetness	1.00
34:							
Getzville-----------	80	Well suited		Well suited		High	
						Wetness	1.00
35A:							
Rhinebeck-----------	80	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
35B:							
Rhinebeck-----------	80	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
35C:							
Rhinebeck-----------	80	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Slope	0.50	Wetness	1.00
				Stickiness; high plasticity index	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
36:							
Canadice	75	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
37A:							
Tonawanda	80	Well suited		Well suited		High	
						Wetness	1.00
37B:							
Tonawanda	80	Well suited		Well suited		High	
						Wetness	1.00
38A:							
Niagara	85	Well suited		Well suited		High	
						Wetness	1.00
38B:							
Niagara	85	Well suited		Well suited		High	
						Wetness	1.00
39A:							
Halsey	85	Well suited		Well suited		High	
						Wetness	1.00
40A:							
Williamson	85	Well suited		Well suited		Low	
40B:							
Williamson	85	Well suited		Well suited		Low	
40C:							
Williamson	85	Well suited		Moderately suited		Low	
				Slope	0.50		
41A:							
Barcelona	85	Well suited		Well suited		High	
						Wetness	1.00
41B:							
Barcelona	85	Well suited		Well suited		High	
						Wetness	1.00
42A:							
Elnora	80	Well suited		Well suited		Low	
42B:							
Elnora	80	Well suited		Moderately suited		Low	
				Slope	0.50		
43:							
Canandaigua, silt loam	80	Well suited		Well suited		High	
						Wetness	1.00
44:							
Canandaigua, mucky silt loam	85	Poorly suited		Poorly suited		High	
		Wetness	0.75	Wetness	0.75	Wetness	1.00

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
45:							
Canandaigua, acid substratum	80	Well suited		Well suited		High	
						Wetness	1.00
46:							
Swormville	85	Moderately suited		Moderately suited		High	
		Sandiness	0.50	Sandiness	0.50	Wetness	1.00
47A:							
Minoa	80	Well suited		Well suited		High	
						Wetness	1.00
48A:							
Colonie	80	Well suited		Well suited		Low	
48B:							
Colonie	80	Well suited		Moderately suited		Low	
				Slope	0.50		
48C:							
Colonie	80	Well suited		Moderately suited		Low	
				Slope	0.50		
49A:							
Red Hook	85	Well suited		Well suited		High	
						Wetness	1.00
50A:							
Canaseraga	85	Well suited		Well suited		Low	
50B:							
Canaseraga	85	Well suited		Moderately suited		Low	
				Slope	0.50		
50C:							
Canaseraga	85	Well suited		Moderately suited		Low	
				Slope	0.50		
51B:							
Chadakoin	85	Well suited		Moderately suited		Low	
				Slope	0.50		
51C:							
Chadakoin	85	Well suited		Moderately suited		Low	
				Slope	0.50		
51D:							
Chadakoin	85	Well suited		Poorly suited		Low	
				Slope	0.75		
51E:							
Chadakoin	85	Well suited		Unsuited		Low	
				Slope	1.00		
51F:							
Chadakoin	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
52B:							
Valois	85	Moderately suited		Moderately suited		Low	
		Sandiness	0.50	Sandiness	0.50		
				Slope	0.50		
52C:							
Valois	85	Moderately suited		Moderately suited		Low	
		Sandiness	0.50	Slope	0.50		
				Sandiness	0.50		
52D:							
Valois	80	Moderately suited		Poorly suited		Low	
		Sandiness	0.50	Slope	0.75		
				Sandiness	0.50		
52E:							
Valois	80	Moderately suited		Unsuited		Low	
		Sandiness	0.50	Slope	1.00		
				Sandiness	0.50		
52F:							
Valois	80	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
		Sandiness	0.50	Sandiness	0.50		
53C:							
Valois	30	Moderately suited		Moderately suited		Low	
		Sandiness	0.50	Sandiness	0.50		
				Slope	0.50		
Volusia	25	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		
Mardin	20	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
55A:							
Darien	85	Well suited		Well suited		High	
						Wetness	1.00
55B:							
Darien	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
55C:							
Darien	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
56B:							
Chautauqua	80	Well suited		Moderately suited		Low	
				Slope	0.50		
56C:							
Chautauqua	80	Well suited		Moderately suited		Low	
				Slope	0.50		
56D:							
Chautauqua	80	Well suited		Poorly suited		Low	
				Slope	0.75		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
57A:							
Busti	80	Well suited		Well suited		High	
						Wetness	1.00
57B:							
Busti	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
57C:							
Busti	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
58B:							
Rushford	80	Well suited		Moderately suited		Low	
				Slope	0.50		
58C:							
Rushford	80	Well suited		Moderately suited		Low	
				Slope	0.50		
59B:							
Yorkshire	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
59C:							
Yorkshire	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
59D:							
Yorkshire	85	Well suited		Poorly suited		High	
				Slope	0.75	Wetness	1.00
60A:							
Napoli	80	Well suited		Well suited		High	
						Wetness	1.00
60B:							
Napoli	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
60C:							
Napoli	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
60D:							
Napoli	80	Well suited		Poorly suited		High	
				Slope	0.75	Wetness	1.00
61B:							
Schuyler	80	Well suited		Moderately suited		Low	
				Slope	0.50		
61C:							
Schuyler	80	Well suited		Moderately suited		Low	
				Slope	0.50		
61D:							
Schuyler	80	Well suited		Poorly suited		Low	
				Slope	0.75		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
61E:							
Schuyler	80	Well suited		Unsuited		Low	
				Slope	1.00		
61F:							
Schuyler	80	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
62B:							
Mardin	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
62C:							
Mardin	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
62D:							
Mardin	85	Well suited		Poorly suited		High	
				Slope	0.75	Wetness	1.00
63B:							
Langford	85	Well suited		Moderately suited		Low	
				Slope	0.50		
63C:							
Langford	85	Well suited		Moderately suited		Low	
				Slope	0.50		
63D:							
Langford	85	Well suited		Poorly suited		Low	
				Slope	0.75		
64C:							
Mardin	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		
66B:							
Volusia	80	Well suited		Moderately suited		High	
				Rock fragments	0.50	Wetness	1.00
				Slope	0.50		
67A:							
Dalton	80	Well suited		Well suited		High	
						Wetness	1.00
67B:							
Dalton	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
68A:							
Volusia	80	Well suited		Moderately suited		High	
				Rock fragments	0.50	Wetness	1.00
68B:							
Volusia	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
68C:							
Volusia-------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		
69A:							
Erie----------------	80	Well suited		Well suited		High	
						Wetness	1.00
69B:							
Erie----------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
69C:							
Erie----------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
71E:							
Mongaup-------------	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
71F:							
Mongaup-------------	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
72B:							
Towerville----------	80	Well suited		Moderately suited		Low	
				Slope	0.50		
72C:							
Towerville----------	80	Well suited		Moderately suited		Low	
				Slope	0.50		
72D:							
Towerville----------	80	Well suited		Poorly suited		Low	
				Slope	0.75		
72E:							
Towerville----------	80	Well suited		Unsuited		Low	
				Slope	1.00		
72F:							
Towerville----------	80	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
73B:							
Gretor--------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		
73C:							
Gretor--------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		
74:							
Ashville------------	80	Well suited		Well suited		High	
						Wetness	1.00

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
75:							
Alden	85	Poorly suited		Poorly suited		High	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
76A:							
Orpark	80	Well suited		Well suited		High	
						Wetness	1.00
76B:							
Orpark	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
76C:							
Orpark	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
77A:							
Chippewa	80	Well suited		Well suited		High	
						Wetness	1.00
78A:							
Hornell	80	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50	Wetness	1.00
78B:							
Hornell	80	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Slope	0.50	Wetness	1.00
				Stickiness; high plasticity index	0.50		
78C:							
Hornell	80	Moderately suited		Moderately suited		High	
		Stickiness; high plasticity index	0.50	Slope	0.50	Wetness	1.00
				Stickiness; high plasticity index	0.50		
78D:							
Hornell	80	Moderately suited		Poorly suited		High	
		Stickiness; high plasticity index	0.50	Slope	0.75	Wetness	1.00
				Stickiness; high plasticity index	0.50		
78F:							
Hornell	40	Moderately suited		Unsuited		High	
		Slope	0.50	Slope	1.00	Wetness	1.00
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
Hudson	35	Moderately suited		Unsuited		Low	
		Stickiness; high plasticity index	0.50	Slope	1.00		
		Slope	0.50	Stickiness; high plasticity index	0.50		
79B:							
Mongaup	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
79C:							
Mongaup-------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		
79D:							
Mongaup-------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
79E:							
Mongaup-------------	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
79F:							
Mongaup-------------	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
80A:							
Fremont-------------	80	Well suited		Well suited		High	
						Wetness	1.00
80B:							
Fremont-------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
80C:							
Fremont-------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
81B:							
Varysburg-----------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
81C:							
Varysburg-----------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
81D:							
Varysburg-----------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
81E:							
Varysburg-----------	85	Well suited		Unsuited		Low	
				Slope	1.00		
82F:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Manlius-------------	30	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
84B:							
Elko----------------	85	Well suited		Moderately suited		Moderate	
				Slope	0.50	Soil reaction	0.50

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
84C:							
Elko----------------	85	Well suited		Moderately suited		Moderate	
				Slope	0.50	Soil reaction	0.50
85B:							
Onoville------------	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
85C:							
Onoville------------	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
85D:							
Onoville------------	85	Well suited		Poorly suited		High	
				Slope	0.75	Wetness	1.00
86B:							
Eldred--------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
86C:							
Eldred--------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
86D:							
Eldred--------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
87B:							
Shongo--------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
87C:							
Shongo--------------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
88A:							
Ivory---------------	85	Well suited		Moderately suited		High	
				Rock fragments	0.50	Wetness	1.00
88B:							
Ivory---------------	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		
88C:							
Ivory---------------	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
				Rock fragments	0.50		
88D:							
Ivory---------------	85	Well suited		Poorly suited		High	
				Slope	0.75	Wetness	1.00
				Rock fragments	0.50		
89B:							
Portville-----------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
89C:							
Portville-----------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
90A:							
Brinkerton----------	85	Well suited		Well suited		High	
						Wetness	1.00
90B:							
Brinkerton----------	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
91A:							
Palms---------------	85	Poorly suited		Poorly suited		High	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
92:							
Carlisle------------	85	Poorly suited		Poorly suited		High	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
93:							
Saprists, inundated-	85	Poorly suited		Poorly suited		High	
		Wetness	0.75	Wetness	0.75	Wetness	1.00
94B:							
Frewsburg-----------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
94C:							
Frewsburg-----------	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
95B:							
Mandy---------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
95C:							
Mandy---------------	85	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
95D:							
Mandy---------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
95E:							
Mandy---------------	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
95F:							
Mandy---------------	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
96B:							
Carrollton----------	80	Well suited		Moderately suited		Low	
				Slope	0.50		
96C:							
Carrollton----------	80	Well suited		Moderately suited		Low	
				Slope	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
96D:							
Carrollton----------	80	Well suited		Poorly suited		Low	
				Slope	0.75		
96E:							
Carrollton----------	80	Well suited		Unsuited		Low	
				Slope	1.00		
96F:							
Carrollton----------	80	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
97B:							
Kinzua--------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
97C:							
Kinzua--------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
97D:							
Kinzua--------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
97E:							
Kinzua--------------	85	Well suited		Unsuited		Low	
				Slope	1.00		
97F:							
Kinzua--------------	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
98D:							
Kinzua--------------	85	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Slope	0.75		
				Rock fragments	0.75		
98E:							
Kinzua--------------	85	Moderately suited		Unsuited		Low	
		Rock fragments	0.50	Slope	1.00		
				Rock fragments	0.75		
99B:							
Buchanan------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
99C:							
Buchanan------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
99D:							
Buchanan------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
100:							
Udorthents----------	85	Not rated		Not rated		Not rated	
		Not rated		Not rated		Not rated	
				Rock fragments	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
101:							
Udorthents, refuse substratum	90	Not rated		Not rated		Not rated	
		Not rated		Not rated		Not rated	
102C:							
Mandy	40	Well suited		Moderately suited		Low	
				Rock fragments	0.50		
				Slope	0.50		
Rock outcrop	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek	40	Moderately suited		Moderately suited		Moderate	
		Sandiness	0.50	Rock fragments	0.50	Soil reaction	0.50
				Sandiness	0.50		
				Slope	0.50		
Rock outcrop	35	Not rated		Not rated		Not rated	
104B:							
Flatiron	80	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
104C:							
Flatiron	80	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
104D:							
Flatiron	80	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Slope	0.75		
				Rock fragments	0.75		
104E:							
Flatiron	80	Moderately suited		Unsuited		Low	
		Rock fragments	0.50	Slope	1.00		
				Rock fragments	0.75		
108D:							
Hartleton	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
108E:							
Hartleton	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
108F:							
Hartleton	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
131:							
Lamson	85	Well suited		Well suited		High	
						Wetness	1.00

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
132B:							
Wiscoy	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
132C:							
Wiscoy	80	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
135C:							
Hudson	85	Moderately suited		Moderately suited		Low	
		Stickiness; high plasticity index	0.50	Stickiness; high plasticity index	0.50		
				Slope	0.50		
135D:							
Hudson	85	Moderately suited		Poorly suited		Low	
		Stickiness; high plasticity index	0.50	Slope	0.75		
				Stickiness; high plasticity index	0.50		
135E:							
Hudson	85	Moderately suited		Unsuited		Low	
		Stickiness; high plasticity index	0.50	Slope	1.00		
				Stickiness; high plasticity index	0.50		
140D:							
Dunkirk	85	Well suited		Poorly suited		Low	
				Slope	0.75		
140E:							
Dunkirk	85	Well suited		Unsuited		Low	
				Slope	1.00		
185C:							
Onoville	85	Moderately suited		Poorly suited		High	
		Rock fragments	0.50	Rock fragments	0.75	Wetness	1.00
				Slope	0.50		
185D:							
Onoville	85	Moderately suited		Poorly suited		High	
		Rock fragments	0.50	Slope	0.75	Wetness	1.00
				Rock fragments	0.75		
187B:							
Shongo	80	Moderately suited		Poorly suited		High	
		Rock fragments	0.50	Rock fragments	0.75	Wetness	1.00
				Slope	0.50		
187C:							
Shongo	80	Moderately suited		Poorly suited		High	
		Rock fragments	0.50	Rock fragments	0.75	Wetness	1.00
				Slope	0.50		
188B:							
Cavode	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
188C:							
Cavode--------------	85	Well suited		Moderately suited		High	
				Slope	0.50	Wetness	1.00
188D:							
Cavode--------------	85	Well suited		Poorly suited		High	
				Slope	0.75	Wetness	1.00
189B:							
Portville-----------	80	Moderately suited		Poorly suited		High	
		Rock fragments	0.50	Rock fragments	0.75	Wetness	1.00
				Slope	0.50		
189C:							
Portville-----------	80	Moderately suited		Poorly suited		High	
		Rock fragments	0.50	Rock fragments	0.75	Wetness	1.00
				Slope	0.50		
195C:							
Mandy---------------	85	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
195D:							
Mandy---------------	85	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Slope	0.75		
				Rock fragments	0.75		
195E:							
Mandy---------------	85	Moderately suited		Unsuited		Low	
		Rock fragments	0.50	Slope	1.00		
		Slope	0.50	Rock fragments	0.75		
199C:							
Buchanan------------	85	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Rock fragments	0.75		
				Slope	0.50		
199D:							
Buchanan------------	85	Moderately suited		Poorly suited		Low	
		Rock fragments	0.50	Slope	0.75		
				Rock fragments	0.75		
289B:							
Ceres---------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		
289C:							
Ceres---------------	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		
289D:							
Ceres---------------	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
289E:							
Ceres---------------	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Value	Suitability for mechanical planting: Rating class and limiting features	Value	Potential for seedling mortality: Rating class and limiting features	Value
289F:							
Ceres	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
400:							
Wakeville	80	Moderately suited		Moderately suited		High	
		Sandiness	0.50	Sandiness	0.50	Wetness	1.00
496B:							
Gilpin	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		
496C:							
Gilpin	85	Well suited		Moderately suited		Low	
				Slope	0.50		
				Rock fragments	0.50		
496D:							
Gilpin	85	Well suited		Poorly suited		Low	
				Slope	0.75		
				Rock fragments	0.50		
496E:							
Gilpin	85	Well suited		Unsuited		Low	
				Slope	1.00		
				Rock fragments	0.50		
496F:							
Gilpin	85	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
				Rock fragments	0.50		
497D:							
Rayne	80	Well suited		Poorly suited		Low	
				Slope	0.75		
497E:							
Rayne	80	Well suited		Unsuited		Low	
				Slope	1.00		
497F:							
Rayne	80	Moderately suited		Unsuited		Low	
		Slope	0.50	Slope	1.00		
498E:							
Rayne	80	Moderately suited		Unsuited		Low	
		Rock fragments	0.50	Slope	1.00		
				Rock fragments	0.75		
800:							
Holderton	80	Well suited		Well suited		High	
						Wetness	1.00

Table 10.—Forestland Planting—Continued

Map symbol and soil name	Pct. of map unit	Suitability for hand planting: Rating class and limiting features	Suitability for hand planting: Value	Suitability for mechanical planting: Rating class and limiting features	Suitability for mechanical planting: Value	Potential for seedling mortality: Rating class and limiting features	Potential for seedling mortality: Value
PG:							
Pits, gravel	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	85	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 11.—Camp Areas, Picnic Areas, and Playgrounds

(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
1:							
Udifluvents---------	40	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Too sandy	0.50	Flooding	1.00
		Too sandy	0.50	Flooding	0.40	Gravel content	1.00
		Gravel content	0.22	Gravel content	0.22	Too sandy	0.50
						Large stones content	0.01
Fluvaquents---------	35	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	0.27	Gravel content	0.27	Gravel content	1.00
		Too sandy	0.02	Too sandy	0.02	Too sandy	0.02
2:							
Hamlin--------------	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
3:							
Tioga---------------	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
4:							
Teel----------------	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Depth to saturated zone	0.77			Flooding	0.60
5:							
Wayland-------------	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	Slow water movement	0.96	Flooding	1.00
		Slow water movement	0.96	Flooding	0.40	Slow water movement	0.96
6A:							
Wyalusing-----------	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
7A:							
Philo---------------	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Depth to saturated zone	0.77			Flooding	0.60

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
8:							
Middlebury----------	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Depth to saturated zone	0.77			Flooding	0.60
9:							
Pawling------------	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Depth to saturated zone	0.77			Flooding	0.60
10:							
Atkins--------------	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
11B:							
Ischua--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slow water movement	0.49	Slope	1.00
		Slow water movement	0.49	Depth to saturated zone	0.43	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Depth to saturated zone	0.77
						Depth to bedrock	0.65
						Slow water movement	0.49
11C:							
Ischua--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slope	0.63	Slope	1.00
		Slope	0.63	Slow water movement	0.49	Gravel content	1.00
		Slow water movement	0.49	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Gravel content	0.01	Gravel content	0.01	Depth to bedrock	0.65
						Slow water movement	0.49
11D:							
Ischua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Gravel content	1.00
		Slow water movement	0.49	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Gravel content	0.01	Gravel content	0.01	Depth to bedrock	0.65
						Slow water movement	0.49

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
11E:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Gravel content	1.00
		Slow water movement	0.49	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Gravel content	0.01	Gravel content	0.01	Depth to bedrock	0.65
						Slow water movement	0.49
11F:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Gravel content	1.00
		Slow water movement	0.49	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Gravel content	0.01	Gravel content	0.01	Depth to bedrock	0.65
						Slow water movement	0.49
12B:							
Franklinville	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.01	Gravel content	0.01	Slope	1.00
						Gravel content	1.00
12C:							
Franklinville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
12D:							
Franklinville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
12E:							
Franklinville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
14B:							
Hornellsville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
						Slow water movement	0.99
						Depth to bedrock	0.16
14C:							
Hornellsville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.99
						Depth to bedrock	0.16

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
15B:							
Willdin	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.95	Depth to saturated zone	0.68	Gravel content	1.00
		Gravel content	0.04	Gravel content	0.04	Slow water movement	0.99
						Depth to saturated zone	0.95
						Large stones content	0.01
15C:							
Willdin	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.95	Depth to saturated zone	0.68	Gravel content	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.99
		Gravel content	0.04	Gravel content	0.04	Depth to saturated zone	0.95
						Large stones content	0.01
15D:							
Willdin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.99	Slow water movement	0.99	Gravel content	1.00
		Depth to saturated zone	0.95	Depth to saturated zone	0.68	Slow water movement	0.99
		Gravel content	0.04	Gravel content	0.04	Depth to saturated zone	0.95
						Large stones content	0.01
16A:							
Almond	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
						Gravel content	0.20
16B:							
Almond	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
						Slow water movement	0.99
						Gravel content	0.20

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
16C:							
Almond	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.99
						Gravel content	0.20
17B:							
Salamanca	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Slow water movement	0.60	Slope	0.88
		Slow water movement	0.60	Depth to saturated zone	0.43	Depth to saturated zone	0.77
						Slow water movement	0.60
						Gravel content	0.22
17C:							
Salamanca	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slope	0.63	Slope	1.00
		Slope	0.63	Slow water movement	0.60	Depth to saturated zone	0.77
		Slow water movement	0.60	Depth to saturated zone	0.43	Slow water movement	0.60
						Gravel content	0.22
17D:							
Salamanca	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.60	Depth to saturated zone	0.77
		Slow water movement	0.60	Depth to saturated zone	0.43	Slow water movement	0.60
						Gravel content	0.22
17E:							
Salamanca	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.60	Depth to saturated zone	0.77
		Slow water movement	0.60	Depth to saturated zone	0.43	Slow water movement	0.60
						Gravel content	0.22
18A:							
Pope	85	Very limited		Not limited		Somewhat limited	
		Flooding	1.00			Flooding	0.60
19A:							
Olean	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Depth to saturated zone	0.77
19B:							
Olean	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Depth to saturated zone	0.77
						Slope	0.50

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
20A:							
Unadilla------------	85	Not limited		Not limited		Not limited	
20B:							
Unadilla------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
20C:							
Unadilla------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
20D:							
Unadilla------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
22A:							
Allard--------------	85	Not limited		Not limited		Not limited	
22B:							
Allard--------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
25A:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
25B:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.06	Gravel content	0.06	Slope	1.00
						Gravel content	1.00
25C:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
25D:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
25E:							
Chenango------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
25F:							
Chenango------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
26A:							
Chenango, fan-------	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Gravel content	0.27	Gravel content	1.00
		Gravel content	0.27				
26B:							
Chenango, fan-------	80	Very limited		Somewhat limited		Very limited	
		Flooding	1.00	Gravel content	0.27	Gravel content	1.00
		Gravel content	0.27			Slope	1.00

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
27A:							
Castile-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Gravel content	0.68	Gravel content	1.00
		Gravel content	0.68	Depth to saturated zone	0.43	Depth to saturated zone	0.77
27B:							
Castile-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Gravel content	0.68	Gravel content	1.00
		Gravel content	0.68	Depth to saturated zone	0.43	Slope	1.00
						Depth to saturated zone	0.77
28A:							
Scio----------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Depth to saturated zone	0.77
29A:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
29B:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
						Slope	1.00
29C:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
29D:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
29E:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
31B:							
Collamer------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slope	0.50
						Slow water movement	0.49
31C:							
Collamer------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slope	0.63	Slope	1.00
		Slope	0.63	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
32A:							
Churchville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
32B:							
Churchville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
						Slope	0.50
33A:							
Wallington	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
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
34:							
Getzville	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
35A:							
Rhinebeck	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
35B:							
Rhinebeck	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Slope	0.50
35C:							
Rhinebeck	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.96
36:							
Canadice	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
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
37A:							
Tonawanda	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
37B:							
Tonawanda	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slope	0.50
						Slow water movement	0.49
38A:							
Niagara	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
38B:							
Niagara	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slope	0.50
						Slow water movement	0.49
39A:							
Halsey	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
						Gravel content	0.22
40A:							
Williamson	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
		Depth to saturated zone	0.90	Depth to saturated zone	0.60	Depth to saturated zone	0.90
40B:							
Williamson	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
		Depth to saturated zone	0.90	Depth to saturated zone	0.60	Depth to saturated zone	0.90
						Slope	0.50

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
40C:							
Williamson	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.90	Slope	0.63	Slow water movement	0.99
		Slope	0.63	Depth to saturated zone	0.60	Depth to saturated zone	0.90
41A:							
Barcelona	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
41B:							
Barcelona	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slope	0.50
						Slow water movement	0.26
42A:							
Elnora	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Depth to saturated zone	0.77
42B:							
Elnora	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Slope	1.00
						Depth to saturated zone	0.77
43:							
Canandaigua, silt loam	80	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
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
44:							
Canandaigua, mucky silt loam	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
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
45:							
Canandaigua, acid substratum	80	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
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
46:							
Swormville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
47A:							
Minoa	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
48A:							
Colonie	80	Not limited		Not limited		Not limited	
48B:							
Colonie	80	Not limited		Not limited		Very limited	
						Slope	1.00
48C:							
Colonie	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
49A:							
Red Hook	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
						Gravel content	0.22
50A:							
Canaseraga	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Depth to saturated zone	0.98
50B:							
Canaseraga	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Slow water movement	0.99
						Depth to saturated zone	0.98

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
50C:							
Canaseraga----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.98	Depth to saturated zone	0.75	Slow water movement	0.99
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.98
51B:							
Chadakoin-----------	85	Not limited		Not limited		Very limited	
						Slope	1.00
						Gravel content	0.99
51C:							
Chadakoin-----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
						Gravel content	0.99
51D:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.99
51E:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.99
51F:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.99
52B:							
Valois--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.06	Gravel content	0.06	Slope	1.00
						Gravel content	1.00
52C:							
Valois--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
52D:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
52E:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
52F:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
53C:							
Valois	30	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.06	Gravel content	0.06	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
Volusia	25	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.99
Mardin	20	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Depth to saturated zone	0.96	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	0.99
						Slow water movement	0.99
55A:							
Darien	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
55B:							
Darien	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Slope	0.88
55C:							
Darien	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.96
56B:							
Chautauqua	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Depth to saturated zone	0.77
						Slow water movement	0.26
						Gravel content	0.22

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
56C:							
Chautauqua	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slope	0.63	Slope	1.00
		Slope	0.63	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Gravel content	0.22
56D:							
Chautauqua	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Gravel content	0.22
57A:							
Busti	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
						Gravel content	0.22
57B:							
Busti	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slope	1.00
						Slow water movement	0.49
						Gravel content	0.22
57C:							
Busti	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
						Gravel content	0.22
58B:							
Rushford	80	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Gravel content	1.00
		Depth to saturated zone	0.84	Depth to saturated zone	0.52	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.99
						Depth to saturated zone	0.84

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
58C:							
Rushford------------	80	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.84	Slope	0.63	Gravel content	1.00
		Slope	0.63	Depth to saturated zone	0.52	Slow water movement	0.99
		Gravel content	0.01	Gravel content	0.01	Depth to saturated zone	0.84
59B:							
Yorkshire-----------	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
		Slow water movement	0.96	Depth to saturated zone	0.83	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
						Slow water movement	0.96
59C:							
Yorkshire-----------	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	0.96	Depth to saturated zone	1.00
		Slow water movement	0.96	Depth to saturated zone	0.83	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	1.00
		Gravel content	0.08	Gravel content	0.08	Slow water movement	0.96
59D:							
Yorkshire-----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Slow water movement	0.96	Slope	1.00
		Slow water movement	0.96	Depth to saturated zone	0.83	Gravel content	1.00
		Gravel content	0.08	Gravel content	0.08	Slow water movement	0.96
60A:							
Napoli--------------	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
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
						Gravel content	0.22
60B:							
Napoli--------------	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
		Slow water movement	0.49	Slow water movement	0.49	Slope	0.88
						Slow water movement	0.49

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
60C:							
Napoli--------------	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
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
						Gravel content	0.22
60D:							
Napoli--------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
						Gravel content	0.22
61B:							
Schuyler------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Slow water movement	0.49	Slope	0.88
		Slow water movement	0.49	Depth to saturated zone	0.43	Depth to saturated zone	0.77
						Slow water movement	0.49
61C:							
Schuyler------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slope	0.63	Slope	1.00
		Slope	0.63	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49
61D:							
Schuyler------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49
61E:							
Schuyler------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49
61F:							
Schuyler------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
62B:							
Mardin	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Depth to saturated zone	0.96	Slope	1.00
						Gravel content	0.99
						Slow water movement	0.99
62C:							
Mardin	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Depth to saturated zone	0.96	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	0.99
						Slow water movement	0.99
62D:							
Mardin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Slow water movement	0.99	Slope	1.00
		Slow water movement	0.99	Depth to saturated zone	0.96	Gravel content	0.99
						Slow water movement	0.99
63B:							
Langford	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.81	Depth to saturated zone	0.48	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.99
						Depth to saturated zone	0.81
63C:							
Langford	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Depth to saturated zone	0.81	Slope	0.63	Gravel content	1.00
		Slope	0.63	Depth to saturated zone	0.48	Slow water movement	0.99
		Gravel content	0.01	Gravel content	0.01	Depth to saturated zone	0.81
63D:							
Langford	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.99	Slow water movement	0.99	Gravel content	1.00
		Depth to saturated zone	0.81	Depth to saturated zone	0.48	Slow water movement	0.99
		Gravel content	0.01	Gravel content	0.01	Depth to saturated zone	0.81

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
64C:							
Mardin	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Slow water movement	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Depth to saturated zone	0.96	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	0.99
		Large stones content	0.53	Large stones content	0.53	Slow water movement	0.99
						Large stones content	0.53
66B:							
Volusia	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
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.99
						Large stones content	0.53
67A:							
Dalton	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
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
67B:							
Dalton	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
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
						Slow water movement	0.99
68A:							
Volusia	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
		Slow water movement	0.99	Slow water movement	0.99	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.99
68B:							
Volusia	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
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Slow water movement	0.99

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
68C:							
Volusia	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
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.99
69A:							
Erie	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
		Slow water movement	0.96	Slow water movement	0.96	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.96
69B:							
Erie	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
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Slow water movement	0.96
69C:							
Erie	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
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Slow water movement	0.96
71E:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.04	Gravel content	0.04	Depth to bedrock	0.71
						Large stones content	0.53
						Large stones content	0.01
71F:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Gravel content	1.00
		Gravel content	0.04	Gravel content	0.04	Depth to bedrock	0.71
						Large stones content	0.53
						Large stones content	0.01

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
72B:							
Towerville----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.77	Slow water movement	0.49	Slope	0.88
		Slow water movement	0.49	Depth to saturated zone	0.43	Depth to saturated zone	0.77
						Slow water movement	0.49
						Depth to bedrock	0.29
						Gravel content	0.22
72C:							
Towerville----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slope	0.63	Slope	1.00
		Slope	0.63	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49
						Depth to bedrock	0.29
						Gravel content	0.22
72D:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49
						Depth to bedrock	0.29
						Gravel content	0.22
72E:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49
						Depth to bedrock	0.29
						Gravel content	0.22
72F:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Slow water movement	0.49	Depth to saturated zone	0.77
		Slow water movement	0.49	Depth to saturated zone	0.43	Slow water movement	0.49
						Depth to bedrock	0.29
						Gravel content	0.22
73B:							
Gretor--------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slope	1.00
		Gravel content	0.25	Gravel content	0.25	Gravel content	1.00
						Depth to bedrock	0.84
						Slow water movement	0.26

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
73C:							
Gretor	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Gravel content	1.00
		Gravel content	0.25	Gravel content	0.25	Depth to bedrock	0.84
						Slow water movement	0.26
74:							
Ashville	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
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
75:							
Alden	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
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
76A:							
Orpark	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
76B:							
Orpark	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
						Slope	0.88
						Depth to bedrock	0.80
76C:							
Orpark	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.99
						Depth to bedrock	0.80
77A:							
Chippewa	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
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
78A:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
78B:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
						Slow water movement	0.99
						Depth to bedrock	0.16
78C:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.99
						Depth to bedrock	0.16
78D:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	0.99	Slope	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
						Depth to bedrock	0.16
78F:							
Hornell	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	0.99	Slope	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
						Depth to bedrock	0.16
Hudson	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
79B:							
Mongaup	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.06	Gravel content	0.06	Slope	1.00
						Gravel content	1.00
						Depth to bedrock	0.71

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
79C:							
Mongaup	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.71
79D:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.71
79E:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.71
79F:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.71
80A:							
Fremont	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slow water movement	0.99
						Gravel content	0.22
80B:							
Fremont	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
						Slow water movement	0.99
						Gravel content	0.22
80C:							
Fremont	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.99
						Gravel content	0.22
81B:							
Varysburg	85	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.20	Depth to saturated zone	0.10	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to saturated zone	0.20

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
81C:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Slow water movement	1.00	Slow water movement	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	1.00
		Depth to saturated zone	0.20	Depth to saturated zone	0.10	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Depth to saturated zone	0.20
81D:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.20	Depth to saturated zone	0.10	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Depth to saturated zone	0.20
81E:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	1.00	Slow water movement	1.00	Slow water movement	1.00
		Depth to saturated zone	0.20	Depth to saturated zone	0.10	Gravel content	1.00
		Gravel content	0.01	Gravel content	0.01	Depth to saturated zone	0.20
82F:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Manlius-------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.99
						Depth to bedrock	0.16
84B:							
Elko----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Depth to saturated zone	0.68	Slope	1.00
		Slow water movement	0.43	Slow water movement	0.43	Depth to saturated zone	0.95
						Slow water movement	0.43
						Gravel content	0.22
84C:							
Elko----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.95	Depth to saturated zone	0.68	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.95
		Slow water movement	0.43	Slow water movement	0.43	Slow water movement	0.43
						Gravel content	0.22

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
85B:							
Onoville------------	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slope	1.00
						Slow water movement	0.49
85C:							
Onoville------------	85	Very limited		Somewhat limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
85D:							
Onoville------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	0.88	Slope	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
86B:							
Eldred--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Depth to saturated zone	0.77
						Slow water movement	0.26
						Gravel content	0.22
86C:							
Eldred--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.77	Slope	0.63	Slope	1.00
		Slope	0.63	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Gravel content	0.22
86D:							
Eldred--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	0.43	Depth to saturated zone	0.77
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
						Gravel content	0.22

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
87B:							
Shongo	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
		Slow water movement	0.49	Slow water movement	0.49	Slope	1.00
						Slow water movement	0.49
87C:							
Shongo	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
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
88A:							
Ivory	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Large stones content	0.03
88B:							
Ivory	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
						Slow water movement	0.96
						Large stones content	0.03
88C:							
Ivory	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.96
						Large stones content	0.03
88D:							
Ivory	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	0.99	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
						Large stones content	0.03

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
89B:							
Portville	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
		Slow water movement	0.49	Slow water movement	0.49	Slope	1.00
						Slow water movement	0.49
						Gravel content	0.22
89C:							
Portville	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
		Slope	0.63	Slope	0.63	Slope	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
						Gravel content	0.22
90A:							
Brinkerton	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
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
90B:							
Brinkerton	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
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
						Slow water movement	0.96
91A:							
Palms	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	Organic matter content	1.00
		Organic matter content	1.00	Organic matter content	1.00	Ponding	1.00
92:							
Carlisle	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	Organic matter content	1.00
		Organic matter content	1.00	Organic matter content	1.00	Ponding	1.00
93:							
Saprists, inundated	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	Organic matter content	1.00
		Organic matter content	1.00	Organic matter content	1.00	Ponding	1.00

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
94B:							
Frewsburg-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
						Slope	0.88
						Depth to bedrock	0.01
94C:							
Frewsburg-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Slope	1.00
						Depth to bedrock	0.01
95B:							
Mandy---------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.06	Gravel content	0.06	Slope	1.00
						Gravel content	1.00
						Depth to bedrock	0.20
95C:							
Mandy---------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.20
95D:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.20
95E:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.20
95F:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.06	Gravel content	0.06	Gravel content	1.00
						Depth to bedrock	0.20
96B:							
Carrollton----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.01	Gravel content	0.01	Gravel content	1.00
		Gravel content	0.01			Slope	1.00
						Depth to bedrock	0.46
						Depth to saturated zone	0.01
96C:							
Carrollton----------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.46

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
96D:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.46
96E:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.46
96F:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.46
97B:							
Kinzua--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.01	Gravel content	0.01	Slope	1.00
						Gravel content	1.00
97C:							
Kinzua--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
97D:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
97E:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
97F:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
98D:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
98E:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
99B:							
Buchanan------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Depth to saturated zone	0.67	Depth to saturated zone	0.35	Slow water movement	0.96
						Depth to saturated zone	0.67
						Gravel content	0.22
99C:							
Buchanan------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Depth to saturated zone	0.67	Slope	0.63	Slow water movement	0.96
		Slope	0.63	Depth to saturated zone	0.35	Depth to saturated zone	0.67
						Gravel content	0.22
99D:							
Buchanan------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Depth to saturated zone	0.67	Depth to saturated zone	0.35	Depth to saturated zone	0.67
						Gravel content	0.22
100:							
Udorthents----------	85	Not rated		Not rated		Not rated	
101:							
Udorthents, refuse substratum---------	90	Not rated		Not rated		Not rated	
102C:							
Mandy---------------	40	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.06	Gravel content	0.06	Slope	1.00
		Slope	0.04	Slope	0.04	Gravel content	1.00
						Depth to bedrock	0.20
Rock outcrop--------	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek---------	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Rock outcrop--------	35	Not rated		Not rated		Not rated	
104B:							
Flatiron------------	80	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
						Slope	1.00
104C:							
Flatiron------------	80	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
104D:							
Flatiron	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
104E:							
Flatiron	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
108D:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.68
						Large stones content	0.01
108E:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.68
						Large stones content	0.01
108F:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.68
						Large stones content	0.01
131:							
Lamson	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
132B:							
Wiscoy	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
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
						Gravel content	0.99
						Slow water movement	0.99
132C:							
Wiscoy	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
		Slow water movement	0.99	Slow water movement	0.99	Slope	1.00
		Slope	0.63	Slope	0.63	Gravel content	0.99
						Slow water movement	0.99

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
135C:							
Hudson	85	Somewhat limited		Somewhat limited		Very limited	
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Depth to saturated zone	0.88	Slope	0.63	Slow water movement	0.96
		Slope	0.63	Depth to saturated zone	0.56	Depth to saturated zone	0.88
135D:							
Hudson	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
135E:							
Hudson	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Depth to saturated zone	0.88	Depth to saturated zone	0.56	Depth to saturated zone	0.88
140D:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
140E:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Slow water movement	0.26	Slow water movement	0.26	Slow water movement	0.26
185C:							
Onoville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Large stones content	1.00	Depth to saturated zone	1.00
		Large stones content	1.00	Depth to saturated zone	0.88	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
185D:							
Onoville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Depth to saturated zone	0.88	Large stones content	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
187B:							
Shongo	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
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slope	1.00
						Slow water movement	0.49
187C:							
Shongo	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
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
188B:							
Cavode	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
						Slow water movement	0.96
188C:							
Cavode	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slope	1.00
		Slope	0.63	Slope	0.63	Slow water movement	0.96
188D:							
Cavode	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to saturated zone	1.00
		Slope	1.00	Depth to saturated zone	0.99	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
189B:							
Portville	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
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slope	1.00
						Slow water movement	0.49
						Gravel content	0.18

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
189C:							
Portville-----------	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
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Large stones content	1.00
		Slow water movement	0.49	Slow water movement	0.49	Slow water movement	0.49
						Gravel content	0.18
195C:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Depth to bedrock	0.20
						Large stones content	0.01
195D:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Depth to bedrock	0.20
						Large stones content	0.01
195E:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.04	Gravel content	0.04	Gravel content	1.00
						Depth to bedrock	0.20
						Large stones content	0.01
199C:							
Buchanan------------	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slow water movement	0.96	Slow water movement	0.96	Large stones content	1.00
		Depth to saturated zone	0.67	Slope	0.63	Slow water movement	0.96
		Slope	0.63	Depth to saturated zone	0.35	Depth to saturated zone	0.67
						Gravel content	0.18

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—Continued

Map symbol and soil name	Pct. of map unit	Camp areas: Rating class and limiting features	Camp areas: Value	Picnic areas: Rating class and limiting features	Picnic areas: Value	Playgrounds: Rating class and limiting features	Playgrounds: Value
199D:							
Buchanan------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Slow water movement	0.96	Slow water movement	0.96	Slow water movement	0.96
		Depth to saturated zone	0.67	Depth to saturated zone	0.35	Depth to saturated zone	0.67
						Gravel content	0.18
289B:							
Ceres---------------	85	Somewhat limited		Somewhat limited		Very limited	
		Gravel content	0.07	Gravel content	0.07	Slope	1.00
						Gravel content	1.00
289C:							
Ceres---------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
289D:							
Ceres---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
289E:							
Ceres---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
289F:							
Ceres---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.07	Gravel content	0.07	Gravel content	1.00
400:							
Wakeville-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
496B:							
Gilpin--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.01	Gravel content	0.01	Slope	1.00
		Gravel content	0.01			Gravel content	1.00
						Depth to bedrock	0.10
						Depth to saturated zone	0.01
496C:							
Gilpin--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.10
496D:							
Gilpin--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.10

Table 11.—Camp Areas, Picnic Areas, and Playgrounds—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
496E:							
Gilpin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.10
496F:							
Gilpin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.01	Gravel content	0.01	Gravel content	1.00
						Depth to bedrock	0.10
497D:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
497E:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
497F:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
498E:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	1.00	Large stones content	1.00	Large stones content	1.00
		Gravel content	0.08	Gravel content	0.08	Gravel content	1.00
800:							
Holderton	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	1.00
		Flooding	1.00			Flooding	0.60
PG:							
Pits, gravel	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	85	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 12.—Paths, Trails, and Golf Fairways

(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
1:							
Udifluvents	40	Somewhat limited		Somewhat limited		Very limited	
		Too sandy	0.50	Too sandy	0.50	Flooding	1.00
		Flooding	0.40	Flooding	0.40	Gravel content	0.22
						Droughty	0.01
						Large stones content	0.01
Fluvaquents	35	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
		Too sandy	0.02	Too sandy	0.02	Gravel content	0.27
2:							
Hamlin	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
3:							
Tioga	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
4:							
Teel	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Flooding	0.60
						Depth to saturated zone	0.43
5:							
Wayland	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
6A:							
Wyalusing	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
7A:							
Philo	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Flooding	0.60
						Depth to saturated zone	0.43

Table 12.—Paths, Trails, and Golf Fairways—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
8:							
Middlebury----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Flooding	0.60
						Depth to saturated zone	0.43
9:							
Pawling-------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Flooding	0.60
						Depth to saturated zone	0.43
10:							
Atkins--------------	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
11B:							
Ischua--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to bedrock	0.65
						Depth to saturated zone	0.43
						Gravel content	0.01
11C:							
Ischua--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to bedrock	0.65
						Slope	0.63
						Depth to saturated zone	0.43
						Gravel content	0.01
11D:							
Ischua--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.08	Slope	1.00
		Depth to saturated zone	0.08			Depth to bedrock	0.65
						Depth to saturated zone	0.43
						Gravel content	0.01
11E:							
Ischua--------------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to bedrock	0.65
						Depth to saturated zone	0.43
						Gravel content	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
11F:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to bedrock	0.65
						Depth to saturated zone	0.43
						Gravel content	0.01
12B:							
Franklinville	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.01
12C:							
Franklinville	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.01
12D:							
Franklinville	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.01
12E:							
Franklinville	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.01
14B:							
Hornellsville	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.16
14C:							
Hornellsville	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Slope	0.63
						Depth to bedrock	0.16
15B:							
Willdin	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.32	Depth to saturated zone	0.32	Depth to saturated zone	0.68
						Droughty	0.42
						Gravel content	0.04
						Large stones content	0.01
15C:							
Willdin	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.32	Depth to saturated zone	0.32	Depth to saturated zone	0.68
						Slope	0.63
						Droughty	0.42
						Gravel content	0.04
						Large stones content	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
15D:							
Willdin	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.32	Slope	1.00
		Depth to saturated zone	0.32			Depth to saturated zone	0.68
						Droughty	0.42
						Gravel content	0.04
						Large stones content	0.01
16A:							
Almond	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
16B:							
Almond	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
16C:							
Almond	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Slope	0.63
17B:							
Salamanca	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
17C:							
Salamanca	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Slope	0.63
						Depth to saturated zone	0.43
17D:							
Salamanca	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.08	Slope	1.00
		Depth to saturated zone	0.08			Depth to saturated zone	0.43
17E:							
Salamanca	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
18A:							
Pope	85	Not limited		Not limited		Somewhat limited	
						Flooding	0.60
19A:							
Olean	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43

Table 12.—Paths, Trails, and Golf Fairways—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
19B:							
Olean---------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
20A:							
Unadilla------------	85	Not limited		Not limited		Not limited	
20B:							
Unadilla------------	85	Not limited		Not limited		Not limited	
20C:							
Unadilla------------	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
20D:							
Unadilla------------	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50				
22A:							
Allard--------------	85	Not limited		Not limited		Not limited	
22B:							
Allard--------------	85	Not limited		Not limited		Not limited	
25A:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.06
						Droughty	0.05
25B:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.06
						Droughty	0.05
25C:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.06
						Droughty	0.05
25D:							
Chenango------------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.06
						Droughty	0.05
25E:							
Chenango------------	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.06
						Droughty	0.05
25F:							
Chenango------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.06
						Droughty	0.05

Table 12.—Paths, Trails, and Golf Fairways—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
26A:							
Chenango, fan-------	80	Not limited		Not limited		Somewhat limited	
						Gravel content	0.27
						Droughty	0.03
26B:							
Chenango, fan-------	80	Not limited		Not limited		Somewhat limited	
						Gravel content	0.27
						Droughty	0.03
27A:							
Castile-------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Gravel content	0.68
						Depth to saturated zone	0.43
						Droughty	0.24
27B:							
Castile-------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Gravel content	0.68
						Depth to saturated zone	0.43
						Droughty	0.24
28A:							
Scio----------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
29A:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.08
						Droughty	0.05
29B:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.08
						Droughty	0.05
29C:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.08
						Droughty	0.05
29D:							
Chenango------------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.08
						Droughty	0.05
29E:							
Chenango------------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.08
						Droughty	0.05
31B:							
Collamer------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43

Table 12.—Paths, Trails, and Golf Fairways—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
31C:							
Collamer------------	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
32A:							
Churchville---------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
32B:							
Churchville---------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
33A:							
Wallington----------	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
						Droughty	0.68
34:							
Getzville-----------	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
35A:							
Rhinebeck-----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
35B:							
Rhinebeck-----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
35C:							
Rhinebeck-----------	80	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Slope	0.63
36:							
Canadice------------	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
37A:							
Tonawanda-----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
37B:							
Tonawanda-----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99

Table 12.—Paths, Trails, and Golf Fairways—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
38A:							
Niagara	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
38B:							
Niagara	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
39A:							
Halsey	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
40A:							
Williamson	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.22	Depth to saturated zone	0.22	Depth to saturated zone	0.60
						Droughty	0.01
40B:							
Williamson	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.22	Depth to saturated zone	0.22	Depth to saturated zone	0.60
						Droughty	0.01
40C:							
Williamson	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
		Depth to saturated zone	0.22	Depth to saturated zone	0.22	Depth to saturated zone	0.60
						Droughty	0.01
41A:							
Barcelona	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
41B:							
Barcelona	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
42A:							
Elnora	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
						Droughty	0.41
42B:							
Elnora	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
						Droughty	0.41

Table 12.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
43:							
Canandaigua, silt loam	80	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
44:							
Canandaigua, mucky silt loam	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
45:							
Canandaigua, acid substratum	80	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
46:							
Swormville	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
47A:							
Minoa	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
48A:							
Colonie	80	Not limited		Not limited		Somewhat limited	
						Droughty	0.29
48B:							
Colonie	80	Not limited		Not limited		Somewhat limited	
						Droughty	0.29
48C:							
Colonie	80	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Droughty	0.29
49A:							
Red Hook	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
50A:							
Canaseraga	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75
50B:							
Canaseraga	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Depth to saturated zone	0.75

Table 12.—Paths, Trails, and Golf Fairways—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
50C:							
Canaseraga----------	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.75
		Depth to saturated zone	0.44	Depth to saturated zone	0.44	Slope	0.63
51B:							
Chadakoin-----------	85	Not limited		Not limited		Not limited	
51C:							
Chadakoin-----------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
51D:							
Chadakoin-----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
51E:							
Chadakoin-----------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
51F:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
52B:							
Valois--------------	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.06
52C:							
Valois--------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.06
52D:							
Valois--------------	80	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.06
52E:							
Valois--------------	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.06
52F:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.06
53C:							
Valois--------------	30	Not limited		Not limited		Somewhat limited	
						Gravel content	0.06
						Slope	0.04
Volusia-------------	25	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	0.98
						Slope	0.04
						Gravel content	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
53C:							
Mardin--------------	20	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
						Droughty	0.96
						Slope	0.04
55A:							
Darien--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
55B:							
Darien--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
55C:							
Darien--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Slope	0.63
56B:							
Chautauqua----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
56C:							
Chautauqua----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Slope	0.63
						Depth to saturated zone	0.43
56D:							
Chautauqua----------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.08	Slope	1.00
		Depth to saturated zone	0.08			Depth to saturated zone	0.43
57A:							
Busti---------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
57B:							
Busti---------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
57C:							
Busti---------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Slope	0.63

Table 12.—Paths, Trails, and Golf Fairways—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
58B:							
Rushford------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.14	Depth to saturated zone	0.14	Droughty	0.69
						Depth to saturated zone	0.52
						Gravel content	0.01
58C:							
Rushford------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.14	Depth to saturated zone	0.14	Droughty	0.69
						Slope	0.63
						Depth to saturated zone	0.52
						Gravel content	0.01
59B:							
Yorkshire-----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.62	Depth to saturated zone	0.62	Depth to saturated zone	0.83
						Droughty	0.48
						Gravel content	0.08
59C:							
Yorkshire-----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.62	Depth to saturated zone	0.62	Depth to saturated zone	0.83
						Slope	0.63
						Droughty	0.48
						Gravel content	0.08
59D:							
Yorkshire-----------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.62	Depth to saturated zone	0.62	Slope	1.00
		Slope	0.50			Depth to saturated zone	0.83
						Droughty	0.48
						Gravel content	0.08
60A:							
Napoli--------------	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
						Droughty	0.01
60B:							
Napoli--------------	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
						Droughty	0.01
60C:							
Napoli--------------	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
						Slope	0.63
						Droughty	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
60D:							
Napoli--------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.50			Depth to saturated zone	1.00
						Droughty	0.01
61B:							
Schuyler------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
61C:							
Schuyler------------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Slope	0.63
						Depth to saturated zone	0.43
61D:							
Schuyler------------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.08	Slope	1.00
		Depth to saturated zone	0.08			Depth to saturated zone	0.43
61E:							
Schuyler------------	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
61F:							
Schuyler------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
62B:							
Mardin--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
						Droughty	0.96
62C:							
Mardin--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
						Droughty	0.96
						Slope	0.63
62D:							
Mardin--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.92	Depth to saturated zone	0.92	Slope	1.00
		Slope	0.50			Depth to saturated zone	0.96
						Droughty	0.96

Table 12.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
63B:							
Langford	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.11	Depth to saturated zone	0.11	Droughty	0.49
						Depth to saturated zone	0.48
						Gravel content	0.01
63C:							
Langford	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.11	Depth to saturated zone	0.11	Slope	0.63
						Droughty	0.49
						Depth to saturated zone	0.48
						Gravel content	0.01
63D:							
Langford	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.11	Slope	1.00
		Depth to saturated zone	0.11			Droughty	0.49
						Depth to saturated zone	0.48
						Gravel content	0.01
64C:							
Mardin	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.92	Depth to saturated zone	0.92	Depth to saturated zone	0.96
		Large stones content	0.53	Large stones content	0.53	Droughty	0.96
						Slope	0.63
66B:							
Volusia	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
		Large stones content	0.53	Large stones content	0.53	Droughty	0.98
						Gravel content	0.01
67A:							
Dalton	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
						Droughty	0.35
67B:							
Dalton	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
						Droughty	0.35
68A:							
Volusia	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
						Droughty	0.98
						Gravel content	0.01

Table 12.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
68B:							
Volusia	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
						Droughty	0.98
						Gravel content	0.01
68C:							
Volusia	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
						Droughty	0.98
						Slope	0.63
						Gravel content	0.01
69A:							
Erie	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
						Droughty	1.00
						Gravel content	0.01
69B:							
Erie	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
						Droughty	1.00
						Gravel content	0.01
69C:							
Erie	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
						Droughty	1.00
						Slope	0.63
						Gravel content	0.01
71E:							
Mongaup	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Large stones content	0.53	Slope	1.00
		Large stones content	0.53	Slope	0.22	Depth to bedrock	0.71
						Droughty	0.10
						Gravel content	0.04
						Large stones content	0.01
71F:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Large stones content	0.53	Large stones content	0.53	Depth to bedrock	0.71
						Droughty	0.10
						Gravel content	0.04
						Large stones content	0.01
72B:							
Towerville	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
						Depth to bedrock	0.29

Table 12.—Paths, Trails, and Golf Fairways—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
72C:							
Towerville----------	80	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Slope	0.63
						Depth to saturated zone	0.43
						Depth to bedrock	0.29
72D:							
Towerville----------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.08	Slope	1.00
		Depth to saturated zone	0.08			Depth to saturated zone	0.43
						Depth to bedrock	0.29
72E:							
Towerville----------	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
						Depth to bedrock	0.29
72F:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
						Depth to bedrock	0.29
73B:							
Gretor--------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.84
						Gravel content	0.25
						Droughty	0.10
73C:							
Gretor--------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.84
						Slope	0.63
						Gravel content	0.25
						Droughty	0.10
74:							
Ashville------------	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
75:							
Alden---------------	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

Table 12.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
76A:							
Orpark	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.80
76B:							
Orpark	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.80
76C:							
Orpark	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.80
						Slope	0.63
77A:							
Chippewa	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
						Droughty	0.69
78A:							
Hornell	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.16
78B:							
Hornell	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.16
78C:							
Hornell	80	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Slope	0.63
						Depth to bedrock	0.16
78D:							
Hornell	80	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.50			Depth to bedrock	0.16
78F:							
Hornell	40	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to bedrock	0.16

Table 12.—Paths, Trails, and Golf Fairways—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
78F:							
Hudson	35	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.18	Depth to saturated zone	0.18		
79B:							
Mongaup	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.71
						Droughty	0.10
						Gravel content	0.06
79C:							
Mongaup	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.71
						Slope	0.63
						Droughty	0.10
						Gravel content	0.06
79D:							
Mongaup	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.71
						Droughty	0.10
						Gravel content	0.06
79E:							
Mongaup	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Depth to bedrock	0.71
						Droughty	0.10
						Gravel content	0.06
79F:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.71
						Droughty	0.10
						Gravel content	0.06
80A:							
Fremont	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
80B:							
Fremont	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
80C:							
Fremont	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Slope	0.63

Table 12.—Paths, Trails, and Golf Fairways—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
81B:							
Varysburg----------	85	Not limited		Not limited		Somewhat limited	
						Depth to saturated zone	0.10
						Droughty	0.01
						Gravel content	0.01
81C:							
Varysburg----------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to saturated zone	0.10
						Droughty	0.01
						Gravel content	0.01
81D:							
Varysburg----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to saturated zone	0.10
						Droughty	0.01
						Gravel content	0.01
81E:							
Varysburg----------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Depth to saturated zone	0.10
						Droughty	0.01
						Gravel content	0.01
82F:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Manlius-------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.38
						Depth to bedrock	0.16
84B:							
Elko----------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.32	Depth to saturated zone	0.32	Depth to saturated zone	0.68
						Droughty	0.01
84C:							
Elko----------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.32	Depth to saturated zone	0.32	Depth to saturated zone	0.68
						Slope	0.63
						Droughty	0.01
85B:							
Onoville-----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
						Droughty	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
85C:							
Onoville------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
						Slope	0.63
						Droughty	0.01
85D:							
Onoville------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Slope	1.00
		Slope	0.50			Depth to saturated zone	0.88
						Droughty	0.01
86B:							
Eldred--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Depth to saturated zone	0.43
86C:							
Eldred--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.08	Depth to saturated zone	0.08	Slope	0.63
						Depth to saturated zone	0.43
86D:							
Eldred--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.08	Slope	1.00
		Depth to saturated zone	0.08			Depth to saturated zone	0.43
87B:							
Shongo--------------	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
87C:							
Shongo--------------	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
						Slope	0.63
88A:							
Ivory---------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Large stones content	0.03
88B:							
Ivory---------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Large stones content	0.03

Table 12.—Paths, Trails, and Golf Fairways—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
88C:							
Ivory	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Slope	0.63
						Large stones content	0.03
88D:							
Ivory	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.50			Large stones content	0.03
89B:							
Portville	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
89C:							
Portville	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
						Slope	0.63
90A:							
Brinkerton	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
90B:							
Brinkerton	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
91A:							
Palms	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
92:							
Carlisle	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00

Table 12.—Paths, Trails, and Golf Fairways—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
93:							
Saprists, inundated-	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Ponding	1.00
		Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
		Ponding	1.00	Ponding	1.00	Depth to saturated zone	1.00
94B:							
Frewsburg-----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Depth to bedrock	0.01
94C:							
Frewsburg-----------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Slope	0.63
						Depth to bedrock	0.01
95B:							
Mandy---------------	85	Not limited		Not limited		Somewhat limited	
						Droughty	0.92
						Depth to bedrock	0.20
						Gravel content	0.06
95C:							
Mandy---------------	85	Not limited		Not limited		Somewhat limited	
						Droughty	0.92
						Slope	0.63
						Depth to bedrock	0.20
						Gravel content	0.06
95D:							
Mandy---------------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Droughty	0.92
						Depth to bedrock	0.20
						Gravel content	0.06
95E:							
Mandy---------------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Droughty	0.92
						Depth to bedrock	0.20
						Gravel content	0.06
95F:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.92
						Depth to bedrock	0.20
						Gravel content	0.06
96B:							
Carrollton----------	80	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.46
						Gravel content	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
96C:							
Carrollton----------	80	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.46
						Gravel content	0.01
96D:							
Carrollton----------	80	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.01
96E:							
Carrollton----------	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.01
96F:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.46
						Gravel content	0.01
97B:							
Kinzua--------------	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.01
97C:							
Kinzua--------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.01
97D:							
Kinzua--------------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.01
97E:							
Kinzua--------------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.01
97F:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.01
98D:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.50			Gravel content	0.01
98E:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	0.22	Gravel content	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
99B:							
Buchanan------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to saturated zone	0.35
99C:							
Buchanan------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Slope	0.63
						Depth to saturated zone	0.35
99D:							
Buchanan------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.50	Depth to saturated zone	0.04	Slope	1.00
		Depth to saturated zone	0.04			Depth to saturated zone	0.35
100:							
Udorthents----------	85	Not rated		Not rated		Not rated	
101:							
Udorthents, refuse substratum---------	90	Not rated		Not rated		Not rated	
102C:							
Mandy---------------	40	Not limited		Not limited		Somewhat limited	
						Droughty	0.92
						Depth to bedrock	0.20
						Gravel content	0.06
						Slope	0.04
Rock outcrop--------	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek---------	40	Not limited		Not limited		Somewhat limited	
						Slope	0.04
						Droughty	0.02
Rock outcrop--------	35	Not rated		Not rated		Not rated	
104B:							
Flatiron------------	80	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Droughty	0.02
104C:							
Flatiron------------	80	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Slope	0.63
						Droughty	0.02
104D:							
Flatiron------------	80	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.50			Droughty	0.02

Table 12.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
104E:							
Flatiron------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	0.22	Droughty	0.02
108D:							
Hartleton-----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Droughty	0.10
						Large stones content	0.01
108E:							
Hartleton-----------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Droughty	0.10
						Large stones content	0.01
108F:							
Hartleton-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Droughty	0.10
						Large stones content	0.01
131:							
Lamson--------------	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
132B:							
Wiscoy--------------	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
						Droughty	1.00
132C:							
Wiscoy--------------	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
						Droughty	1.00
						Slope	0.63
135C:							
Hudson--------------	85	Very limited		Very limited		Somewhat limited	
		Water erosion	1.00	Water erosion	1.00	Slope	0.63
		Depth to saturated zone	0.18	Depth to saturated zone	0.18	Depth to saturated zone	0.56
135D:							
Hudson--------------	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50	Depth to saturated zone	0.18	Depth to saturated zone	0.56
		Depth to saturated zone	0.18				

Table 12.—Paths, Trails, and Golf Fairways—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
135E:							
Hudson	85	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.22	Depth to saturated zone	0.56
		Depth to saturated zone	0.18	Depth to saturated zone	0.18		
140D:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Slope	0.50				
140E:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Slope	1.00	Water erosion	1.00	Slope	1.00
		Water erosion	1.00	Slope	0.22		
185C:							
Onoville	85	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Depth to saturated zone	0.88
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Slope	0.63
						Droughty	0.01
185D:							
Onoville	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Depth to saturated zone	0.73	Depth to saturated zone	0.73	Depth to saturated zone	0.88
		Slope	0.50			Droughty	0.01
187B:							
Shongo	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
		Large stones content	1.00	Large stones content	1.00		
187C:							
Shongo	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
		Large stones content	1.00	Large stones content	1.00	Slope	0.63
188B:							
Cavode	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
188C:							
Cavode	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Slope	0.63

Table 12.—Paths, Trails, and Golf Fairways—Continued

Map symbol and soil name	Pct. of map unit	Paths and trails: Rating class and limiting features	Paths and trails: Value	Off-road motorcycle trails: Rating class and limiting features	Off-road motorcycle trails: Value	Golf fairways: Rating class and limiting features	Golf fairways: Value
188D:							
Cavode	85	Very limited		Very limited		Very limited	
		Water erosion	1.00	Water erosion	1.00	Slope	1.00
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.50				
189B:							
Portville	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
		Large stones content	1.00	Large stones content	1.00		
189C:							
Portville	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
		Large stones content	1.00	Large stones content	1.00	Slope	0.63
195C:							
Mandy	85	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Droughty	0.92
						Depth to bedrock	0.20
						Slope	0.04
						Gravel content	0.04
						Large stones content	0.01
195D:							
Mandy	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.50			Droughty	0.92
						Depth to bedrock	0.20
						Gravel content	0.04
						Large stones content	0.01
195E:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	0.96	Droughty	0.92
						Depth to bedrock	0.20
						Gravel content	0.04
						Large stones content	0.01
199C:							
Buchanan	85	Very limited		Very limited		Somewhat limited	
		Large stones content	1.00	Large stones content	1.00	Slope	0.63
		Depth to saturated zone	0.04	Depth to saturated zone	0.04	Depth to saturated zone	0.35

Table 12.—Paths, Trails, and Golf Fairways—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
199D:							
Buchanan	85	Very limited		Very limited		Very limited	
		Large stones content	1.00	Large stones content	1.00	Slope	1.00
		Slope	0.50	Depth to saturated zone	0.04	Depth to saturated zone	0.35
		Depth to saturated zone	0.04				
289B:							
Ceres	85	Not limited		Not limited		Somewhat limited	
						Gravel content	0.07
289C:							
Ceres	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Gravel content	0.07
289D:							
Ceres	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.07
289E:							
Ceres	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.07
289F:							
Ceres	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.07
400:							
Wakeville	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60
496B:							
Gilpin	85	Not limited		Not limited		Somewhat limited	
						Depth to bedrock	0.10
						Gravel content	0.01
496C:							
Gilpin	85	Not limited		Not limited		Somewhat limited	
						Slope	0.63
						Depth to bedrock	0.10
						Gravel content	0.01
496D:							
Gilpin	85	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Depth to bedrock	0.10
						Gravel content	0.01
496E:							
Gilpin	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Depth to bedrock	0.10
						Gravel content	0.01

Table 12.—Paths, Trails, and Golf Fairways—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
496F:							
Gilpin----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Depth to bedrock	0.10
						Gravel content	0.01
497D:							
Rayne-----------------	80	Somewhat limited		Not limited		Very limited	
		Slope	0.50			Slope	1.00
						Gravel content	0.08
497E:							
Rayne-----------------	80	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Slope	0.22	Slope	1.00
						Gravel content	0.08
497F:							
Rayne-----------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.08
498E:							
Rayne-----------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Large stones content	1.00	Slope	1.00
		Large stones content	1.00	Slope	0.22	Gravel content	0.08
800:							
Holderton-------------	80	Somewhat limited		Somewhat limited		Very limited	
		Depth to saturated zone	0.99	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Flooding	0.60
PG:							
Pits, gravel----------	85	Not rated		Not rated		Not rated	
Ur:							
Urban land------------	85	Not rated		Not rated		Not rated	
W:							
Water-----------------	100	Not rated		Not rated		Not rated	

Table 13.— Wildlife Habitat

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
1:										
Udifluvents	Very poor	Very poor	Poor	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
Fluvaquents	Very poor	Very poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
2:										
Hamlin	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
3:										
Tioga	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
4:										
Teel	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
5:										
Wayland	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
6A:										
Wyalusing	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
7A:										
Philo	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
8:										
Middlebury	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
9:										
Pawling	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
10:										
Atkins	Poor	Fair	Fair	Fair	Fair	Good	Fair	Fair	Fair	Fair
11B:										
Ischua	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
11C:										
Ischua	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
11D:										
Ischua	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
11E:										
Ischua	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
11F:										
Ischua	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
12B:										
Franklinville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
12C:										
Franklinville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
12D: Franklinville	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
12E: Franklinville	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
14B: Hornellsville	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
14C: Hornellsville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
15B: Willdin	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
15C: Willdin	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
15D: Willdin	Poor	Fair	Good	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
16A: Almond	Fair	Fair	Good	Good	Good	Fair	Fair	Fair	Good	Fair
16B: Almond	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Poor
16C: Almond	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
17B: Salamanca	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
17C: Salamanca	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
17D: Salamanca	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
17E: Salamanca	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
18A: Pope	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
19A: Olean	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
19B: Olean	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
20A:										
Unadilla	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
20B:										
Unadilla	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
20C:										
Unadilla	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
20D:										
Unadilla	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
22A:										
Allard	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
22B:										
Allard	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
25A:										
Chenango	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
25B:										
Chenango	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
25C:										
Chenango	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
25D:										
Chenango	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
25E:										
Chenango	Very poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
25F:										
Chenango	Very poor	Poor	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
26A:										
Chenango	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
26B:										
Chenango	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
27A:										
Castile	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
27B:										
Castile	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
28A:										
Scio	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
29A: Chenango--------	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
29B: Chenango--------	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
29C: Chenango--------	Fair	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
29D: Chenango--------	Poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
29E: Chenango--------	Very poor	Fair	Fair	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
31B: Collamer--------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
31C: Collamer--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
32A: Churchville-----	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
32B: Churchville-----	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
33A: Wallington------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
34: Getzville-------	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
35A: Rhinebeck-------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
35B: Rhinebeck-------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
35C: Rhinebeck-------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
36: Canadice--------	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
37A: Tonawanda-------	Poor	Poor	Fair	Fair	Fair	Good	Fair	Poor	Fair	Fair
37B: Tonawanda-------	Poor	Poor	Fair	Fair	Fair	Poor	Very poor	Poor	Fair	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
38A:										
Niagara----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
38B:										
Niagara----------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
39A:										
Halsey-----------	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
40A:										
Williamson------	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
40B:										
Williamson------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
40C:										
Williamson------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
41A:										
Barcelona-------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
41B:										
Barcelona-------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Poor
42A:										
Elnora----------	Fair	Good	Good	Fair	Fair	Poor	Poor	Good	Fair	Poor
42B:										
Elnora----------	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
43:										
Canandaigua-----	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
44:										
Canandaigua-----	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
45:										
Canandaigua-----	Very poor	Poor	Poor	Poor	Poor	Good	Good	Very poor	Poor	Good
46:										
Swormville------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
47A:										
Minoa-----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
48A:										
Colonie---------	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
48B:										
Colonie---------	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for-: Openland wildlife	Woodland wildlife	Wetland wildlife
48C:										
Colonie	Poor	Poor	Fair	Poor	Poor	Very poor	Very poor	Poor	Poor	Very poor
49A:										
Red Hook	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
50A:										
Canaseraga	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor
50B:										
Canaseraga	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
50C:										
Canaseraga	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
51B:										
Chadakoin	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
51C:										
Chadakoin	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
51D:										
Chadakoin	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
51E:										
Chadakoin	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
51F:										
Chadakoin	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
52B:										
Valois	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
52C:										
Valois	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
52D:										
Valois	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
52E:										
Valois	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
52F:										
Valois	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
53C:										
Valois	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Volusia	Fair	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
53C:										
Mardin----------	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
55A:										
Darien----------	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
55B:										
Darien----------	Fair	Good	Good	Good	Good	Fair	Very poor	Good	Good	Very poor
55C:										
Darien----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
56B:										
Chautauqua------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
56C:										
Chautauqua------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
56D:										
Chautauqua------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
57A:										
Busti-----------	Fair	Fair	Good	Good	Good	Fair	Fair	Fair	Fair	Fair
57B:										
Busti-----------	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Fair	Very poor
57C:										
Busti-----------	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor
58B:										
Rushford--------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
58C:										
Rushford--------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
59B:										
Yorkshire-------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
59C:										
Yorkshire-------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
59D:										
Yorkshire-------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
60A:										
Napoli----------	Fair	Fair	Good	Good	Good	Fair	Fair	Fair	Good	Fair
60B:										
Napoli----------	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
60C:										
Napoli----------	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
60D:										
Napoli----------	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
61B:										
Schuyler--------	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
61C:										
Schuyler--------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
61D:										
Schuyler--------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
61E:										
Schuyler--------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
61F:										
Schuyler--------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
62B:										
Mardin----------	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
62C:										
Mardin----------	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
62D:										
Mardin----------	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
63B:										
Langford--------	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
63C:										
Langford--------	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
63D:										
Langford--------	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
64C:										
Mardin----------	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
66B:										
Volusia---------	Very poor	Poor	Fair	Poor	Poor	Poor	Very poor	Poor	Poor	Very poor
67A:										
Dalton----------	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair

Table 13.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for-: Openland wildlife	Woodland wildlife	Wetland wildlife
67B: Dalton	Fair	Fair	Fair	Good	Good	Poor	Very poor	Fair	Good	Very poor
68A: Volusia	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Fair	Poor	Fair
68B: Volusia	Fair	Fair	Fair	Poor	Poor	Poor	Very poor	Fair	Poor	Very poor
68C: Volusia	Fair	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
69A: Erie	Fair	Fair	Fair	Poor	Poor	Fair	Fair	Fair	Poor	Fair
69B: Erie	Fair	Fair	Fair	Poor	Poor	Poor	Very poor	Fair	Poor	Very poor
69C: Erie	Fair	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
71E: Mongaup	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
71F: Mongaup	Very poor	Very poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
72B: Towerville	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
72C: Towerville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
72D: Towerville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
72E: Towerville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
72F: Towerville	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
73B: Gretor	Fair	Fair	Poor	Fair	Fair	Poor	Very poor	Fair	Fair	Very poor
73C: Gretor	Fair	Fair	Poor	Fair	Fair	Very poor	Very poor	Fair	Fair	Very poor
74: Ashville	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for-: Openland wildlife	Woodland wildlife	Wetland wildlife
75:										
Alden	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
76A:										
Orpark	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
76B:										
Orpark	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
76C:										
Orpark	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
77A:										
Chippewa	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good
78A:										
Hornell	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
78B:										
Hornell	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
78C:										
Hornell	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
78D:										
Hornell	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
78F:										
Hornell	Very poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
Hudson	Very poor	Poor	Good	Good	Good	Very poor	Very poor	Poor	Good	Very poor
79B:										
Mongaup	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
79C:										
Mongaup	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
79D:										
Mongaup	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
79E:										
Mongaup	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
79F:										
Mongaup	Fair	Good	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
80A:										
Fremont	Fair	Fair	Good	Good	Good	Fair	Fair	Fair	Good	Fair

Table 13.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
80B:										
Fremont	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Very poor
80C:										
Fremont	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
81B:										
Varysburg	Good	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
81C:										
Varysburg	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
81D:										
Varysburg	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
81E:										
Varysburg	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
82F:										
Rock outcrop	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
Manlius	Very poor	Poor	Good	Fair	Fair	Very poor	Very poor	Poor	Fair	Very poor
84B:										
Elko	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
84C:										
Elko	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
85B:										
Onoville	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
85C:										
Onoville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
85D:										
Onoville	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
86B:										
Eldred	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
86C:										
Eldred	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
86D:										
Eldred	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for-: Openland wildlife	Woodland wildlife	Wetland wildlife
87B: Shongo	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Fair	Very poor
87C: Shongo	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor
88A: Ivory	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
88B: Ivory	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
88C: Ivory	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
88D: Ivory	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
89B: Portville	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Fair	Very poor
89C: Portville	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor
90A: Brinkerton	Poor	Fair	Good	Fair	Fair	Good	Good	Fair	Fair	Good
90B: Brinkerton	Poor	Fair	Good	Fair	Fair	Fair	Fair	Fair	Fair	Fair
91A: Palms	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
92: Carlisle	Poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good
93: Saprists, inundated	Very poor	Very poor	Poor	Very poor	Very poor	Good	Good	Very poor	Very poor	Good
94B: Frewsburg	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Good	Very poor
94C: Frewsburg	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
95B: Mandy	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
95C: Mandy	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
95D:										
Mandy-----------	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
95E:										
Mandy-----------	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
95F:										
Mandy-----------	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
96B:										
Carrollton------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
96C:										
Carrollton------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
96D:										
Carrollton------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
96E:										
Carrollton------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
96F:										
Carrollton------	Good	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
97B:										
Kinzua----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
97C:										
Kinzua----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
97D:										
Kinzua----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
97E:										
Kinzua----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
97F:										
Kinzua----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
98D:										
Kinzua----------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
98E:										
Kinzua----------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
99B:										
Buchanan--------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
99C:										
Buchanan--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
99D:										
Buchanan--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
100:										
Udorthents------	Very poor	Very poor	Poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor	Very poor
101:										
Udorthents, refuse substratum-----	Very poor	Very poor	Poor	Very poor	Very poor	Very poor	Very poor	Very poor	Poor	Very poor
102C:										
Mandy-----------	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
Rock outcrop----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
103C:										
Knapp Creek-----	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
Rock outcrop----	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor	Very poor
104B:										
Flatiron--------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
104C:										
Flatiron--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
104D:										
Flatiron--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
104E:										
Flatiron--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
108D:										
Hartleton-------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
108E:										
Hartleton-------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
108F:										
Hartleton-------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
131:										
Lamson----------	Very poor	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
132B: Wiscoy----------	Fair	Fair	Fair	Poor	Poor	Poor	Very poor	Fair	Poor	Very poor
132C: Wiscoy----------	Fair	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
135C: Hudson----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
135D: Hudson----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
135E: Hudson----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
140D: Dunkirk---------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
140E: Dunkirk---------	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
185C: Onoville--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
185D: Onoville--------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
187B: Shongo----------	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Fair	Very poor
187C: Shongo----------	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor
188B: Cavode----------	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
188C: Cavode----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
188D: Cavode----------	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
189B: Portville-------	Fair	Fair	Good	Good	Good	Poor	Very poor	Fair	Fair	Very poor
189C: Portville-------	Fair	Fair	Good	Good	Good	Very poor	Very poor	Fair	Fair	Very poor

Table 13.— Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for-: Openland wildlife	Woodland wildlife	Wetland wildlife
195C: Mandy	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
195D: Mandy	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
195E: Mandy	Poor	Fair	Fair	Poor	Poor	Very poor	Very poor	Fair	Poor	Very poor
199C: Buchanan	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
199D: Buchanan	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
289B: Ceres	Fair	Good	Good	Good	Good	Poor	Very poor	Good	Good	Very poor
289C: Ceres	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
289D: Ceres	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
289E: Ceres	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
289F: Ceres	Fair	Good	Good	Good	Good	Very poor	Very poor	Good	Good	Very poor
400: Wakeville	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
496B: Gilpin	Fair	Good	Good	Fair	Fair	Poor	Very poor	Good	Fair	Very poor
496C: Gilpin	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
496D: Gilpin	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
496E: Gilpin	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor
496F: Gilpin	Fair	Good	Good	Fair	Fair	Very poor	Very poor	Good	Fair	Very poor

Table 13.—Wildlife Habitat—Continued

Map symbol and soil name	Potential for habitat elements: Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Potential as habitat for: Openland wildlife	Woodland wildlife	Wetland wildlife
497D: Rayne	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
497E: Rayne	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
497F: Rayne	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
498E: Rayne	Poor	Fair	Good	Good	Good	Very poor	Very poor	Fair	Good	Very poor
800: Holderton	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair
PG: Pits, gravel	---	---	---	---	---	---	---	---	---	---
Ur: Urban land	---	---	---	---	---	---	---	---	---	---
W: Water	---	---	---	---	---	---	---	---	---	---

Table 14.—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
1:					
Udifluvents	40	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.08
		Thickest layer	0.00	Bottom layer	0.77
Fluvaquents	35	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.05
		Thickest layer	0.00	Bottom layer	0.77
2:					
Hamlin	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
3:					
Tioga	85	Improbable		Improbable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
4:					
Teel	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
5:					
Wayland	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
6A:					
Wyalusing	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.07
7A:					
Philo	85	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.03
8:					
Middlebury	85	Improbable		Improbable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
9:					
Pawling	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.86

Table 14.—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
10:					
Atkins--------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
11B:					
Ischua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11C:					
Ischua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11D:					
Ischua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11E:					
Ischua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
11F:					
Ischua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
12B:					
Franklinville-------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
12C:					
Franklinville-------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
12D:					
Franklinville-------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
12E:					
Franklinville-------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
14B:					
Hornellsville-------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
14C:					
Hornellsville-------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
15B:					
Willdin-------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
15C:					
Willdin-------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
15D:					
Willdin-------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
16A:					
Almond--------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
16B:					
Almond--------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
16C:					
Almond--------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
17B:					
Salamanca-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
17C:					
Salamanca-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
17D:					
Salamanca-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
17E:					
Salamanca-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
18A:					
Pope----------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
19A:					
Olean---------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.07

Table 14.—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
19B:					
Olean---------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.07
20A:					
Unadilla------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
20B:					
Unadilla------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
20C:					
Unadilla------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
20D:					
Unadilla------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
22A:					
Allard--------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.86
22B:					
Allard--------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.86
25A:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.86
25B:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.86
25C:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.86
25D:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.86
25E:					
Chenango------------	80	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.86

Table 14.—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
25F:					
Chenango------------	80	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.86
26A:					
Chenango, fan-------	80	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.07
26B:					
Chenango, fan-------	80	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.12	Bottom layer	0.07
27A:					
Castile-------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.86
27B:					
Castile-------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.86
28A:					
Scio----------------	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.07
29A:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.12	Bottom layer	0.07
29B:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.12	Bottom layer	0.07
29C:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.12	Bottom layer	0.07
29D:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.12	Bottom layer	0.07
29E:					
Chenango------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.03
		Bottom layer	0.12	Bottom layer	0.07
31B:					
Collamer------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
31C:					
Collamer------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
32A:					
Churchville---------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
32B:					
Churchville---------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
33A:					
Wallington----------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
34:					
Getzville-----------	80	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.86
35A:					
Rhinebeck-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
35B:					
Rhinebeck-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
35C:					
Rhinebeck-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
36:					
Canadice------------	75	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
37A:					
Tonawanda-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
37B:					
Tonawanda-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
38A:					
Niagara-------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
38B:					
Niagara	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
39A:					
Halsey	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.86
40A:					
Williamson	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
40B:					
Williamson	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
40C:					
Williamson	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
41A:					
Barcelona	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
41B:					
Barcelona	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
42A:					
Elnora	80	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.36
42B:					
Elnora	80	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.36
43:					
Canandaigua, silt loam	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
44:					
Canandaigua, mucky silt loam	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
45:					
Canandaigua, acid substratum	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
46:					
Swormville	85	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.86
47A:					
Minoa	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
48A:					
Colonie	80	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.36
48B:					
Colonie	80	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.36
48C:					
Colonie	80	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.02
		Thickest layer	0.00	Bottom layer	0.36
49A:					
Red Hook	85	Improbable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.00	Bottom layer	0.03
50A:					
Canaseraga	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
50B:					
Canaseraga	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
50C:					
Canaseraga	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
51B:					
Chadakoin	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
51C:					
Chadakoin	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
51D:					
Chadakoin	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
51E:					
Chadakoin-----------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
51F:					
Chadakoin-----------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
52B:					
Valois--------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.03
52C:					
Valois--------------	85	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.03
52D:					
Valois--------------	80	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.03
52E:					
Valois--------------	80	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.03
52F:					
Valois--------------	80	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.03
53C:					
Valois--------------	30	Probable		Probable	
		Thickest layer	0.00	Thickest layer	0.00
		Bottom layer	0.03	Bottom layer	0.03
Volusia-------------	25	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Mardin--------------	20	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
55A:					
Darien--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
55B:					
Darien--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
55C:					
Darien--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14.—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
56B:					
Chautauqua----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
56C:					
Chautauqua----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
56D:					
Chautauqua----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
57A:					
Busti---------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
57B:					
Busti---------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
57C:					
Busti---------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
58B:					
Rushford------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
58C:					
Rushford------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
59B:					
Yorkshire-----------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
59C:					
Yorkshire-----------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
59D:					
Yorkshire-----------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
60A:					
Napoli--------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
60B:					
Napoli--------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14.—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
60C:					
Napoli--------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
60D:					
Napoli--------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
61B:					
Schuyler------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
61C:					
Schuyler------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
61D:					
Schuyler------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
61E:					
Schuyler------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
61F:					
Schuyler------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
62B:					
Mardin--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
62C:					
Mardin--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
62D:					
Mardin--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
63B:					
Langford------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
63C:					
Langford------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
63D:					
Langford------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
64C:					
Mardin	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
66B:					
Volusia	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
67A:					
Dalton	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
67B:					
Dalton	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
68A:					
Volusia	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
68B:					
Volusia	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
68C:					
Volusia	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
69A:					
Erie	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
69B:					
Erie	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
69C:					
Erie	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
71E:					
Mongaup	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
71F:					
Mongaup	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
72B:					
Towerville----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
72C:					
Towerville----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
72D:					
Towerville----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
72E:					
Towerville----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
72F:					
Towerville----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
73B:					
Gretor--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
73C:					
Gretor--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
74:					
Ashville------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
75:					
Alden---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.00
76A:					
Orpark--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
76B:					
Orpark--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
76C:					
Orpark--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
77A:					
Chippewa------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
78A:					
Hornell	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
78B:					
Hornell	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
78C:					
Hornell	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
78D:					
Hornell	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
78F:					
Hornell	40	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
Hudson	35	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
79B:					
Mongaup	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
79C:					
Mongaup	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
79D:					
Mongaup	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
79E:					
Mongaup	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
79F:					
Mongaup	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
80A:					
Fremont	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
80B:					
Fremont	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14.—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
80C:					
Fremont	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
81B:					
Varysburg	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
81C:					
Varysburg	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
81D:					
Varysburg	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
81E:					
Varysburg	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
82F:					
Rock outcrop	50	Not Rated		Not Rated	
Manlius	30	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
84B:					
Elko	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
84C:					
Elko	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
85B:					
Onoville	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
85C:					
Onoville	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
85D:					
Onoville	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
86B:					
Eldred	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14.—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
86C:					
Eldred--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
86D:					
Eldred--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
87B:					
Shongo--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
87C:					
Shongo--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
88A:					
Ivory---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
88B:					
Ivory---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
88C:					
Ivory---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
88D:					
Ivory---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
89B:					
Portville-----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
89C:					
Portville-----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
90A:					
Brinkerton----------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
90B:					
Brinkerton----------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
91A:					
Palms---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
92:					
Carlisle------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
		Organic matter content	0.00	Organic matter content	0.00
93:					
Saprists, inundated-	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
94B:					
Frewsburg-----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
94C:					
Frewsburg-----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
95B:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
95C:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
95D:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
95E:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
95F:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
96B:					
Carrollton----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
96C:					
Carrollton----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
96D:					
Carrollton----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00

Table 14.—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
96E:					
Carrollton----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
96F:					
Carrollton----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
97B:					
Kinzua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
97C:					
Kinzua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
97D:					
Kinzua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
97E:					
Kinzua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
97F:					
Kinzua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
98D:					
Kinzua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
98E:					
Kinzua--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
99B:					
Buchanan------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
99C:					
Buchanan------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
99D:					
Buchanan------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
100:					
Udorthents----------	85	Not Rated		Not Rated	

Table 14.—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
101:					
Udorthents, refuse substratum	90	Not Rated		Not Rated	
102C:					
Mandy	40	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
Rock outcrop	35	Not Rated		Not Rated	
103C:					
Knapp Creek	40	Probable		Probable	
		Thickest layer	0.00	Bottom layer	0.03
		Bottom layer	0.25	Thickest layer	0.03
Rock outcrop	35	Not Rated		Not Rated	
104B:					
Flatiron	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
104C:					
Flatiron	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
104D:					
Flatiron	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
104E:					
Flatiron	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
108D:					
Hartleton	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
108E:					
Hartleton	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
108F:					
Hartleton	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
131:					
Lamson	85	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.02

Table 14.—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
132B:					
Wiscoy--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
132C:					
Wiscoy--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
135C:					
Hudson--------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
135D:					
Hudson--------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
135E:					
Hudson--------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
140D:					
Dunkirk-------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
140E:					
Dunkirk-------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
185C:					
Onoville------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
185D:					
Onoville------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
187B:					
Shongo--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
187C:					
Shongo--------------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
188B:					
Cavode--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14.—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
188C:					
Cavode--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
188D:					
Cavode--------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
189B:					
Portville-----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
189C:					
Portville-----------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
195C:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
195D:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
195E:					
Mandy---------------	85	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
199C:					
Buchanan------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
199D:					
Buchanan------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
289B:					
Ceres---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
289C:					
Ceres---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
289D:					
Ceres---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14.—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
289E:					
Ceres----------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
289F:					
Ceres----------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
400:					
Wakeville------------	80	Improbable		Probable	
		Bottom layer	0.00	Thickest layer	0.00
		Thickest layer	0.00	Bottom layer	0.07
496B:					
Gilpin---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
496C:					
Gilpin---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
496D:					
Gilpin---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
496E:					
Gilpin---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
496F:					
Gilpin---------------	85	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
497D:					
Rayne----------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
497E:					
Rayne----------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
497F:					
Rayne----------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00
498E:					
Rayne----------------	80	Improbable		Improbable	
		Thickest layer	0.00	Bottom layer	0.00
		Bottom layer	0.00	Thickest layer	0.00

Table 14.—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
800:					
Holderton-----------	80	Improbable		Improbable	
		Bottom layer	0.00	Bottom layer	0.00
		Thickest layer	0.00	Thickest layer	0.00
PG:					
Pits, gravel--------	85	Not Rated		Not Rated	
Ur:					
Urban land----------	85	Not Rated		Not Rated	
W:					
Water---------------	100	Not Rated		Not Rated	

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil

(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
1:							
Udifluvents	40	Poor		Good		Poor	
		Too sandy	0.00			Too sandy	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.88			Rock fragments	0.00
Fluvaquents	35	Poor		Poor		Poor	
		Too sandy	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too sandy	0.00
		Too acid	0.88			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
2:							
Hamlin	85	Fair		Good		Good	
		Organic matter content low	0.50				
		Water erosion	0.68				
3:							
Tioga	85	Fair		Good		Good	
		Organic matter content low	0.50				
		Too acid	0.84				
		Water erosion	0.99				
4:							
Teel	85	Fair		Fair		Fair	
		Organic matter content low	0.50	Wetness depth	0.32	Wetness depth	0.32
		Water erosion	0.68				
5:							
Wayland	85	Fair		Poor		Poor	
		Water erosion	0.90	Wetness depth	0.00	Wetness depth	0.00
		Too clayey	0.92			Too clayey	0.87
		Too acid	0.99				
6A:							
Wyalusing	85	Fair		Poor		Poor	
		Too acid	0.84	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.99			Hard to reclaim (rock fragments)	0.00
7A:							
Philo	85	Fair		Fair		Fair	
		Too acid	0.54	Wetness depth	0.32	Wetness depth	0.32
		Organic matter content low	0.88			Too acid	0.98
		Water erosion	0.99				

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
8:							
Middlebury----------	85	Fair		Fair		Fair	
		Organic matter content low	0.50	Wetness depth	0.32	Wetness depth	0.32
		Too acid	0.84				
		Water erosion	0.99				
9:							
Pawling-------------	85	Fair		Fair		Poor	
		Water erosion	0.68	Wetness depth	0.32	Hard to reclaim (rock fragments)	0.00
		Too acid	0.84			Wetness depth	0.32
10:							
Atkins--------------	85	Fair		Poor		Poor	
		Too acid	0.54	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.88			Too clayey	0.66
		Too clayey	0.92			Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
11B:							
Ischua--------------	85	Fair		Poor		Fair	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Wetness depth	0.32
		Droughty	0.36	Wetness depth	0.32	Depth to bedrock	0.35
		Organic matter content low	0.50	Low strength	0.78	Rock fragments	0.88
		Too acid	0.54			Too acid	0.98
11C:							
Ischua--------------	85	Fair		Poor		Fair	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Wetness depth	0.32
		Droughty	0.36	Wetness depth	0.32	Depth to bedrock	0.35
		Organic matter content low	0.50	Low strength	0.78	Slope	0.37
		Too acid	0.54			Rock fragments	0.88
						Too acid	0.98
11D:							
Ischua--------------	85	Fair		Poor		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.36	Wetness depth	0.32	Wetness depth	0.32
		Organic matter content low	0.50	Slope	0.50	Depth to bedrock	0.35
		Too acid	0.54	Low strength	0.78	Rock fragments	0.88
						Too acid	0.98
11E:							
Ischua--------------	85	Fair		Poor		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.36	Slope	0.00	Wetness depth	0.32
		Organic matter content low	0.50	Wetness depth	0.32	Depth to bedrock	0.35
		Too acid	0.54	Low strength	0.78	Rock fragments	0.88
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
11F:							
Ischua--------------	85	Fair		Poor		Poor	
		Depth to bedrock	0.35	Depth to bedrock	0.00	Slope	0.00
		Droughty	0.36	Slope	0.00	Wetness depth	0.32
		Organic matter content low	0.50	Wetness depth	0.32	Depth to bedrock	0.35
		Too acid	0.54	Low strength	0.78	Rock fragments	0.88
						Too acid	0.98
12B:							
Franklinville-------	85	Fair		Good		Poor	
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
						Too acid	0.98
12C:							
Franklinville-------	85	Fair		Good		Poor	
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
						Slope	0.37
						Too acid	0.98
12D:							
Franklinville-------	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Slope	0.50	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Too acid	0.98
12E:							
Franklinville-------	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Too acid	0.98
14B:							
Hornellsville-------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.49	Low strength	0.00	Wetness depth	0.00
		Too acid	0.50	Wetness depth	0.00	Depth to bedrock	0.84
		Depth to bedrock	0.84	Shrink-swell	0.87	Too acid	0.88
		Water erosion	0.99				
14C:							
Hornellsville-------	85	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Droughty	0.49	Low strength	0.00	Wetness depth	0.00
		Too acid	0.50	Wetness depth	0.00	Slope	0.37
		Depth to bedrock	0.84	Shrink-swell	0.87	Depth to bedrock	0.84
		Water erosion	0.99			Too acid	0.88

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
15B:							
Willdin-------------	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.18	Hard to reclaim (rock fragments)	0.00
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (dense layer)	0.10
						Wetness depth	0.18
						Too acid	0.76
15C:							
Willdin-------------	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.18	Hard to reclaim (rock fragments)	0.00
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (dense layer)	0.10
						Wetness depth	0.18
						Slope	0.37
						Too acid	0.76
15D:							
Willdin-------------	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.18	Slope	0.00
		Too acid	0.20	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (dense layer)	0.10
						Wetness depth	0.18
						Too acid	0.76
16A:							
Almond--------------	80	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too clayey	0.92			Wetness depth	0.00
						Too clayey	0.60
						Too acid	0.88
16B:							
Almond--------------	80	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too clayey	0.92			Wetness depth	0.00
						Too clayey	0.60
						Too acid	0.88
16C:							
Almond--------------	80	Fair		Poor		Poor	
		Too acid	0.50	Wetness depth	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too clayey	0.92			Wetness depth	0.00
						Slope	0.37
						Too clayey	0.60
						Too acid	0.88

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
17B:							
Salamanca-----------	80	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Rock fragments	0.00
		Too acid	0.54			Wetness depth	0.32
		Too clayey	0.92			Hard to reclaim (rock fragments)	0.32
						Too clayey	0.60
						Too acid	0.98
17C:							
Salamanca-----------	80	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Rock fragments	0.00
		Too acid	0.54			Wetness depth	0.32
		Too clayey	0.92			Hard to reclaim (rock fragments)	0.32
						Slope	0.37
						Too clayey	0.60
						Too acid	0.98
17D:							
Salamanca-----------	80	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Slope	0.00
		Too acid	0.54	Slope	0.50	Rock fragments	0.00
		Too clayey	0.92			Wetness depth	0.32
						Hard to reclaim (rock fragments)	0.32
						Too clayey	0.60
						Too acid	0.98
17E:							
Salamanca-----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54	Wetness depth	0.32	Rock fragments	0.00
		Too clayey	0.92			Wetness depth	0.32
						Hard to reclaim (rock fragments)	0.32
						Too clayey	0.60
						Too acid	0.98
18A:							
Pope----------------	85	Fair		Good		Fair	
		Too acid	0.50			Too acid	0.98
		Organic matter content low	0.50				
		Water erosion	0.99				
19A:							
Olean---------------	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Wetness depth	0.32
		Water erosion	0.90			Too acid	0.98
19B:							
Olean---------------	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Wetness depth	0.32
		Water erosion	0.90			Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
20A:							
Unadilla------------	85	Fair		Good		Fair	
		Water erosion	0.06			Hard to reclaim (rock fragments)	0.68
		Organic matter content low	0.50			Too acid	0.98
		Too acid	0.54				
20B:							
Unadilla------------	85	Fair		Good		Fair	
		Water erosion	0.06			Hard to reclaim (rock fragments)	0.68
		Organic matter content low	0.50			Too acid	0.98
		Too acid	0.54				
20C:							
Unadilla------------	85	Fair		Good		Fair	
		Water erosion	0.06			Slope	0.37
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.68
		Too acid	0.54			Too acid	0.98
20D:							
Unadilla------------	85	Fair		Fair		Poor	
		Water erosion	0.06	Slope	0.50	Slope	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.68
		Too acid	0.54			Too acid	0.98
22A:							
Allard--------------	85	Fair		Good		Poor	
		Water erosion	0.06			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Too acid	0.98
		Too acid	0.54				
22B:							
Allard--------------	85	Fair		Good		Poor	
		Water erosion	0.06			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Too acid	0.98
		Too acid	0.54				
25A:							
Chenango------------	85	Fair		Good		Poor	
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Droughty	0.64			Too acid	0.98
25B:							
Chenango------------	85	Fair		Good		Poor	
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.64			Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
25C:							
Chenango------------	85	Fair		Good		Poor	
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Droughty	0.64			Slope	0.37
						Too acid	0.98
25D:							
Chenango------------	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Slope	0.50	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.64			Hard to reclaim (rock fragments)	0.00
						Too acid	0.98
25E:							
Chenango------------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.64			Hard to reclaim (rock fragments)	0.00
						Too acid	0.98
25F:							
Chenango------------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.64			Hard to reclaim (rock fragments)	0.00
						Too acid	0.98
26A:							
Chenango, fan-------	80	Fair		Good		Poor	
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Droughty	0.83			Too acid	0.98
26B:							
Chenango, fan-------	80	Fair		Good		Poor	
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Droughty	0.83			Too acid	0.98
27A:							
Castile-------------	85	Fair		Fair		Poor	
		Droughty	0.22	Wetness depth	0.32	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Wetness depth	0.32
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
27B:							
Castile	85	Fair		Fair		Poor	
		Droughty	0.22	Wetness depth	0.32	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Wetness depth	0.32
						Too acid	0.98
28A:							
Scio	85	Fair		Fair		Fair	
		Organic matter content low	0.50	Wetness depth	0.32	Wetness depth	0.32
		Too acid	0.54			Hard to reclaim (rock fragments)	0.92
		Water erosion	0.68			Too acid	0.98
29A:							
Chenango	85	Fair		Good		Poor	
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Droughty	0.64			Too acid	0.98
29B:							
Chenango	85	Fair		Good		Poor	
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Droughty	0.64			Too acid	0.98
29C:							
Chenango	85	Fair		Good		Poor	
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
		Droughty	0.64			Slope	0.37
						Too acid	0.98
29D:							
Chenango	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Slope	0.50	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.64			Hard to reclaim (rock fragments)	0.00
						Too acid	0.98
29E:							
Chenango	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
		Droughty	0.64			Hard to reclaim (rock fragments)	0.00
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
31B:							
Collamer------------	85	Fair		Fair		Fair	
		Organic matter content low	0.50	Wetness depth	0.32	Wetness depth	0.32
		Water erosion	0.68				
		Too acid	0.84				
31C:							
Collamer------------	85	Fair		Fair		Fair	
		Organic matter content low	0.50	Wetness depth	0.32	Wetness depth	0.32
		Water erosion	0.68			Slope	0.37
		Too acid	0.84				
32A:							
Churchville---------	85	Fair		Poor		Poor	
		Too clayey	0.18	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.12
		Water erosion	0.68			Hard to reclaim (rock fragments)	0.68
32B:							
Churchville---------	85	Fair		Poor		Poor	
		Too clayey	0.18	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.12
		Water erosion	0.68			Hard to reclaim (rock fragments)	0.68
33A:							
Wallington----------	85	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.06			Too acid	0.98
		Organic matter content low	0.50				
		Too acid	0.54				
34:							
Getzville-----------	80	Poor		Poor		Poor	
		Too sandy	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too sandy	0.00
		Water erosion	0.68				
		Too acid	0.95				
35A:							
Rhinebeck-----------	80	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Too clayey	0.00
		Organic matter content low	0.50	Shrink-swell	0.99	Wetness depth	0.00
		Water erosion	0.68				
		Too acid	0.92				
35B:							
Rhinebeck-----------	80	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Too clayey	0.00
		Organic matter content low	0.50	Shrink-swell	0.99	Wetness depth	0.00
		Water erosion	0.68				
		Too acid	0.92				

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
35C:							
Rhinebeck-----------	80	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Too clayey	0.00
		Organic matter content low	0.50	Shrink-swell	0.99	Wetness depth	0.00
		Water erosion	0.68			Slope	0.37
		Too acid	0.92				
36:							
Canadice------------	75	Poor		Poor		Poor	
		Too clayey	0.00	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
		Water erosion	0.68	Shrink-swell	0.87		
		Too acid	0.80				
37A:							
Tonawanda-----------	80	Fair		Poor		Poor	
		Water erosion	0.06	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50				
		Too acid	0.97				
37B:							
Tonawanda-----------	80	Fair		Poor		Poor	
		Water erosion	0.06	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50				
		Too acid	0.97				
38A:							
Niagara-------------	85	Fair		Poor		Poor	
		Water erosion	0.06	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.60
		Too clayey	0.92				
38B:							
Niagara-------------	85	Fair		Poor		Poor	
		Water erosion	0.06	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.60
		Too clayey	0.92				
39A:							
Halsey--------------	85	Poor		Poor		Poor	
		Organic matter content low	0.00	Wetness depth	0.00	Wetness depth	0.00
						Rock fragments	0.12
						Hard to reclaim (rock fragments)	0.32
40A:							
Williamson----------	85	Fair		Fair		Fair	
		Water erosion	0.06	Wetness depth	0.22	Wetness depth	0.22
		Droughty	0.17			Too acid	0.98
		Organic matter content low	0.50				
		Too acid	0.54				

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
40B:							
Williamson----------	85	Fair		Fair		Fair	
		Water erosion	0.06	Wetness depth	0.22	Wetness depth	0.22
		Droughty	0.17			Too acid	0.98
		Organic matter content low	0.50				
		Too acid	0.54				
40C:							
Williamson----------	85	Fair		Fair		Fair	
		Water erosion	0.06	Wetness depth	0.22	Wetness depth	0.22
		Droughty	0.17			Slope	0.37
		Organic matter content low	0.50			Too acid	0.98
		Too acid	0.54				
41A:							
Barcelona-----------	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Hard to reclaim (rock fragments)	0.00
		Water erosion	0.68	Depth to bedrock	0.23	Wetness depth	0.00
		Too clayey	0.92	Low strength	0.78	Too clayey	0.60
		Too acid	0.92				
41B:							
Barcelona-----------	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Hard to reclaim (rock fragments)	0.00
		Water erosion	0.68	Depth to bedrock	0.23	Wetness depth	0.00
		Too clayey	0.92	Low strength	0.78	Too clayey	0.60
		Too acid	0.92				
42A:							
Elnora--------------	80	Poor		Fair		Fair	
		Wind erosion	0.00	Wetness depth	0.32	Wetness depth	0.32
		Too sandy	0.36			Too sandy	0.36
		Organic matter content low	0.50				
		Droughty	0.67				
		Too acid	0.84				
42B:							
Elnora--------------	80	Poor		Fair		Fair	
		Wind erosion	0.00	Wetness depth	0.32	Wetness depth	0.32
		Too sandy	0.36			Too sandy	0.36
		Organic matter content low	0.50				
		Droughty	0.67				
		Too acid	0.84				
43:							
Canandaigua, silt loam---------------	80	Fair		Poor		Poor	
		Water erosion	0.06	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.60
		Too clayey	0.92				

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
44:							
Canandaigua, mucky silt loam	85	Fair		Poor		Poor	
		Water erosion	0.06	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.60
		Too clayey	0.92				
45:							
Canandaigua, acid substratum	80	Fair		Poor		Poor	
		Water erosion	0.06	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Too clayey	0.60
		Too acid	0.84				
		Too clayey	0.92				
46:							
Swormville	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.68				
		Too acid	0.97				
47A:							
Minoa	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.92				
		Water erosion	0.99				
48A:							
Colonie	80	Fair		Good		Fair	
		Too sandy	0.36			Too sandy	0.36
		Organic matter content low	0.50				
		Too acid	0.84				
		Droughty	0.90				
48B:							
Colonie	80	Fair		Good		Fair	
		Too sandy	0.36			Too sandy	0.36
		Organic matter content low	0.50				
		Too acid	0.84				
		Droughty	0.90				
48C:							
Colonie	80	Fair		Good		Fair	
		Too sandy	0.36			Too sandy	0.36
		Organic matter content low	0.50			Slope	0.37
		Too acid	0.84				
		Droughty	0.90				
49A:							
Red Hook	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Rock fragments	0.00
		Too acid	0.97			Hard to reclaim (rock fragments)	0.00
						Wetness depth	0.00

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
50A:							
Canaseraga----------	85	Fair		Fair		Fair	
		Water erosion	0.06	Wetness depth	0.14	Hard to reclaim (dense layer)	0.05
		Droughty	0.33			Wetness depth	0.14
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.92
		Too acid	0.54				
50B:							
Canaseraga----------	85	Fair		Fair		Fair	
		Water erosion	0.06	Wetness depth	0.14	Hard to reclaim (dense layer)	0.05
		Droughty	0.33			Wetness depth	0.14
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.92
		Too acid	0.54				
50C:							
Canaseraga----------	85	Fair		Fair		Fair	
		Water erosion	0.06	Wetness depth	0.14	Hard to reclaim (dense layer)	0.05
		Droughty	0.33			Wetness depth	0.14
		Organic matter content low	0.50			Slope	0.37
		Too acid	0.54			Hard to reclaim (rock fragments)	0.92
51B:							
Chadakoin-----------	85	Fair		Good		Poor	
		Too acid	0.32			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.12
						Too acid	0.88
51C:							
Chadakoin-----------	85	Fair		Good		Poor	
		Too acid	0.32			Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50			Rock fragments	0.12
						Slope	0.37
						Too acid	0.88
51D:							
Chadakoin-----------	85	Fair		Fair		Poor	
		Too acid	0.32	Slope	0.50	Slope	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.12
						Too acid	0.88
51E:							
Chadakoin-----------	85	Fair		Poor		Poor	
		Too acid	0.32	Slope	0.00	Slope	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.12
						Too acid	0.88

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
51F:							
Chadakoin-----------	85	Fair		Poor		Poor	
		Too acid	0.32	Slope	0.00	Slope	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.12
						Too acid	0.88
52B:							
Valois--------------	85	Fair		Good		Poor	
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
						Too acid	0.98
52C:							
Valois--------------	85	Fair		Good		Poor	
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
						Slope	0.37
						Too acid	0.98
52D:							
Valois--------------	80	Fair		Fair		Poor	
		Too acid	0.20	Slope	0.50	Slope	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Too acid	0.98
52E:							
Valois--------------	80	Fair		Poor		Poor	
		Too acid	0.20	Slope	0.00	Slope	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Too acid	0.98
52F:							
Valois--------------	80	Fair		Poor		Poor	
		Too acid	0.20	Slope	0.00	Slope	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Too acid	0.98
53C:							
Valois--------------	30	Fair		Good		Poor	
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
						Slope	0.96
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
53C							
Volusia	25	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too acid	0.20			Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Slope	0.96
						Too acid	0.99
Mardin	20	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.02	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Wetness depth	0.02
		Too acid	0.54			Rock fragments	0.12
						Hard to reclaim (rock fragments)	0.92
						Slope	0.96
55A:							
Darien	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too clayey	0.92			Wetness depth	0.00
		Too acid	0.99			Too clayey	0.60
						Rock fragments	0.88
55B:							
Darien	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too clayey	0.92			Wetness depth	0.00
		Too acid	0.99			Too clayey	0.60
						Rock fragments	0.88
55C:							
Darien	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too clayey	0.92			Wetness depth	0.00
		Too acid	0.99			Slope	0.37
						Too clayey	0.60
						Rock fragments	0.88
56B:							
Chautauqua	80	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Rock fragments	0.00
		Too acid	0.84			Wetness depth	0.32
						Hard to reclaim (rock fragments)	0.92
56C:							
Chautauqua	80	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Rock fragments	0.00
		Too acid	0.84			Wetness depth	0.32
						Slope	0.37
						Hard to reclaim (rock fragments)	0.92

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
56D:							
Chautauqua----------	80	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Slope	0.00
		Too acid	0.84	Slope	0.50	Rock fragments	0.00
						Wetness depth	0.32
						Hard to reclaim (rock fragments)	0.92
57A:							
Busti---------------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Rock fragments	0.00
		Too acid	0.84			Wetness depth	0.00
						Hard to reclaim (rock fragments)	0.68
57B:							
Busti---------------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Rock fragments	0.00
		Too acid	0.84			Wetness depth	0.00
						Hard to reclaim (rock fragments)	0.68
57C:							
Busti---------------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Rock fragments	0.00
		Too acid	0.84			Wetness depth	0.00
						Slope	0.37
						Hard to reclaim (rock fragments)	0.68
58B:							
Rushford-----------	80	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.27	Hard to reclaim (dense layer)	0.00
		Too acid	0.50			Rock fragments	0.00
		Organic matter content low	0.50			Wetness depth	0.27
		Water erosion	0.68			Too acid	0.98
58C:							
Rushford-----------	80	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.27	Hard to reclaim (dense layer)	0.00
		Too acid	0.50			Rock fragments	0.00
		Organic matter content low	0.50			Wetness depth	0.27
		Water erosion	0.68			Slope	0.37
						Too acid	0.98
59B:							
Yorkshire----------	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.09	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Wetness depth	0.09
		Too clayey	0.92			Too clayey	0.60
						Hard to reclaim (rock fragments)	0.92

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
59C:							
Yorkshire	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.09	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.54			Wetness depth	0.09
		Too clayey	0.92			Slope	0.37
						Too clayey	0.60
						Hard to reclaim (rock fragments)	0.92
59D:							
Yorkshire	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.09	Slope	0.00
		Organic matter content low	0.50	Slope	0.50	Hard to reclaim (dense layer)	0.00
		Too acid	0.54			Rock fragments	0.00
		Too clayey	0.92			Wetness depth	0.09
						Too clayey	0.60
						Hard to reclaim (rock fragments)	0.92
60A:							
Napoli	80	Fair		Poor		Poor	
		Droughty	0.20	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (dense layer)	0.05
		Too clayey	0.92			Hard to reclaim (rock fragments)	0.50
						Too clayey	0.60
						Too acid	0.92
60B:							
Napoli	80	Fair		Poor		Poor	
		Droughty	0.20	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (dense layer)	0.05
		Too clayey	0.92			Hard to reclaim (rock fragments)	0.50
						Too clayey	0.60
						Too acid	0.92
60C:							
Napoli	80	Fair		Poor		Poor	
		Droughty	0.20	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.20			Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (dense layer)	0.05
		Too clayey	0.92			Slope	0.37
						Hard to reclaim (rock fragments)	0.50
						Too clayey	0.60
						Too acid	0.92

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
60D:							
Napoli--------------	80	Fair		Poor		Poor	
		Droughty	0.20	Wetness depth	0.00	Slope	0.00
		Too acid	0.20	Slope	0.50	Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Too clayey	0.92			Hard to reclaim (dense layer)	0.05
						Hard to reclaim (rock fragments)	0.50
						Too clayey	0.60
						Too acid	0.92
61B:							
Schuyler------------	80	Fair		Fair		Fair	
		Too acid	0.50	Wetness depth	0.32	Wetness depth	0.32
		Organic matter content low	0.50			Too acid	0.76
		Water erosion	0.99			Rock fragments	0.88
						Hard to reclaim (dense layer)	0.90
						Hard to reclaim (rock fragments)	0.92
61C:							
Schuyler------------	80	Fair		Fair		Fair	
		Too acid	0.50	Wetness depth	0.32	Wetness depth	0.32
		Organic matter content low	0.50			Slope	0.37
		Water erosion	0.99			Too acid	0.76
						Rock fragments	0.88
						Hard to reclaim (dense layer)	0.90
						Hard to reclaim (rock fragments)	0.92
61D:							
Schuyler------------	80	Fair		Fair		Poor	
		Too acid	0.50	Wetness depth	0.32	Slope	0.00
		Organic matter content low	0.50	Slope	0.50	Wetness depth	0.32
		Water erosion	0.99			Too acid	0.76
						Rock fragments	0.88
						Hard to reclaim (dense layer)	0.90
						Hard to reclaim (rock fragments)	0.92
61E:							
Schuyler------------	80	Fair		Poor		Poor	
		Too acid	0.50	Slope	0.00	Slope	0.00
		Organic matter content low	0.50	Wetness depth	0.32	Wetness depth	0.32
		Water erosion	0.99			Too acid	0.76
						Rock fragments	0.88
						Hard to reclaim (dense layer)	0.90
						Hard to reclaim (rock fragments)	0.92

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
61F:							
Schuyler	80	Fair		Poor		Poor	
		Too acid	0.50	Slope	0.00	Slope	0.00
		Organic matter content low	0.50	Wetness depth	0.32	Wetness depth	0.32
		Water erosion	0.99			Too acid	0.76
						Rock fragments	0.88
						Hard to reclaim (dense layer)	0.90
						Hard to reclaim (rock fragments)	0.92
62B:							
Mardin	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.02	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Wetness depth	0.02
		Too acid	0.54			Rock fragments	0.12
						Hard to reclaim (rock fragments)	0.92
62C:							
Mardin	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.02	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Wetness depth	0.02
		Too acid	0.54			Rock fragments	0.12
						Slope	0.37
						Hard to reclaim (rock fragments)	0.92
62D:							
Mardin	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.02	Slope	0.00
		Organic matter content low	0.50	Slope	0.50	Hard to reclaim (dense layer)	0.00
		Too acid	0.54			Wetness depth	0.02
						Rock fragments	0.12
						Hard to reclaim (rock fragments)	0.92
63B:							
Langford	85	Poor		Fair		Fair	
		Droughty	0.00	Wetness depth	0.29	Hard to reclaim (dense layer)	0.16
		Organic matter content low	0.50			Wetness depth	0.29
		Too acid	0.68				
63C:							
Langford	85	Poor		Fair		Fair	
		Droughty	0.00	Wetness depth	0.29	Hard to reclaim (dense layer)	0.16
		Organic matter content low	0.50			Wetness depth	0.29
		Too acid	0.68			Slope	0.37

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
63D:							
Langford------------	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.29	Slope	0.00
		Organic matter content low	0.50	Slope	0.50	Hard to reclaim (dense layer)	0.16
		Too acid	0.68			Wetness depth	0.29
64C:							
Mardin--------------	85	Poor		Fair		Poor	
		Droughty	0.00	Wetness depth	0.02	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Wetness depth	0.02
		Too acid	0.54			Rock fragments	0.12
						Slope	0.37
						Hard to reclaim (rock fragments)	0.92
66B:							
Volusia-------------	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too acid	0.20			Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Too acid	0.99
67A:							
Dalton--------------	80	Fair		Poor		Poor	
		Droughty	0.01	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Water erosion	0.06			Wetness depth	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.68
		Too acid	0.54				
67B:							
Dalton--------------	80	Fair		Poor		Poor	
		Droughty	0.01	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Water erosion	0.06			Wetness depth	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.68
		Too acid	0.54				
68A:							
Volusia-------------	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too acid	0.20			Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Too acid	0.99

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
68B:							
Volusia	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too acid	0.20			Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Too acid	0.99
68C:							
Volusia	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Too acid	0.20			Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.08
						Slope	0.37
						Too acid	0.99
69A:							
Erie	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Wetness depth	0.00
		Too acid	0.84			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.68
69B:							
Erie	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Wetness depth	0.00
		Too acid	0.84			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.68
69C:							
Erie	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Organic matter content low	0.50			Wetness depth	0.00
		Too acid	0.84			Rock fragments	0.00
						Slope	0.37
						Hard to reclaim (rock fragments)	0.68
71E:							
Mongaup	85	Fair		Poor		Poor	
		Droughty	0.08	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.29	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.29
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
71F:							
Mongaup-------------	85	Fair		Poor		Poor	
		Droughty	0.08	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.29	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.29
						Too acid	0.98
72B:							
Towerville----------	80	Fair		Poor		Fair	
		Organic matter content low	0.50	Depth to bedrock	0.00	Wetness depth	0.32
		Too acid	0.54	Wetness depth	0.32	Depth to bedrock	0.71
		Droughty	0.70			Rock fragments	0.88
		Depth to bedrock	0.71			Too acid	0.98
72C:							
Towerville----------	80	Fair		Poor		Fair	
		Organic matter content low	0.50	Depth to bedrock	0.00	Wetness depth	0.32
		Too acid	0.54	Wetness depth	0.32	Slope	0.37
		Droughty	0.70			Depth to bedrock	0.71
		Depth to bedrock	0.71			Rock fragments	0.88
						Too acid	0.98
72D:							
Towerville----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.54	Wetness depth	0.32	Wetness depth	0.32
		Droughty	0.70	Slope	0.50	Depth to bedrock	0.71
		Depth to bedrock	0.71			Rock fragments	0.88
						Too acid	0.98
72E:							
Towerville----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.54	Slope	0.00	Wetness depth	0.32
		Droughty	0.70	Wetness depth	0.32	Depth to bedrock	0.71
		Depth to bedrock	0.71			Rock fragments	0.88
						Too acid	0.98
72F:							
Towerville----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.54	Slope	0.00	Wetness depth	0.32
		Droughty	0.70	Wetness depth	0.32	Depth to bedrock	0.71
		Depth to bedrock	0.71			Rock fragments	0.88
						Too acid	0.98
73B:							
Gretor--------------	80	Fair		Poor		Poor	
		Droughty	0.07	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.16	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Depth to bedrock	0.16
		Too acid	0.54			Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
73C:							
Gretor	80	Fair		Poor		Poor	
		Droughty	0.07	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.16	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Depth to bedrock	0.16
		Too acid	0.54			Slope	0.37
						Too acid	0.98
74:							
Ashville	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.99			Hard to reclaim (rock fragments)	0.92
75:							
Alden	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Too clayey	0.92			Too clayey	0.60
		Too acid	0.97			Hard to reclaim (rock fragments)	0.92
		Water erosion	0.99				
76A:							
Orpark	80	Fair		Poor		Poor	
		Depth to bedrock	0.21	Depth to bedrock	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Wetness depth	0.00	Depth to bedrock	0.21
		Droughty	0.52	Low strength	0.78	Too clayey	0.60
		Too acid	0.54			Rock fragments	0.88
		Too clayey	0.92			Too acid	0.98
76B:							
Orpark	80	Fair		Poor		Poor	
		Depth to bedrock	0.21	Depth to bedrock	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Wetness depth	0.00	Depth to bedrock	0.21
		Droughty	0.52	Low strength	0.78	Too clayey	0.60
		Too acid	0.54			Rock fragments	0.88
		Too clayey	0.92			Too acid	0.98
76C:							
Orpark	80	Fair		Poor		Poor	
		Depth to bedrock	0.21	Depth to bedrock	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Wetness depth	0.00	Depth to bedrock	0.21
		Droughty	0.52	Low strength	0.78	Slope	0.37
		Too acid	0.54			Too clayey	0.60
		Too clayey	0.92			Rock fragments	0.88
						Too acid	0.98
77A:							
Chippewa	80	Poor		Poor		Poor	
		Organic matter content low	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Droughty	0.00			Wetness depth	0.00
		Too acid	0.68			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.68

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
78A:							
Hornell-------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.50	Low strength	0.00	Wetness depth	0.00
		Droughty	0.51	Wetness depth	0.00	Depth to bedrock	0.84
		Too acid	0.54	Shrink-swell	0.87	Too acid	0.98
		Depth to bedrock	0.84				
		Water erosion	0.99				
78B:							
Hornell-------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.50	Low strength	0.00	Wetness depth	0.00
		Droughty	0.51	Wetness depth	0.00	Depth to bedrock	0.84
		Too acid	0.54	Shrink-swell	0.87	Too acid	0.98
		Depth to bedrock	0.84				
		Water erosion	0.99				
78C:							
Hornell-------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Too clayey	0.00
		Organic matter content low	0.50	Low strength	0.00	Wetness depth	0.00
		Droughty	0.51	Wetness depth	0.00	Slope	0.37
		Too acid	0.54	Shrink-swell	0.87	Depth to bedrock	0.84
		Depth to bedrock	0.84			Too acid	0.98
		Water erosion	0.99				
78D:							
Hornell-------------	80	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
		Droughty	0.51	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.54	Slope	0.50	Depth to bedrock	0.84
		Depth to bedrock	0.84	Shrink-swell	0.87	Too acid	0.98
		Water erosion	0.99				
78F:							
Hornell-------------	40	Poor		Poor		Poor	
		Too clayey	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.50	Slope	0.00	Too clayey	0.00
		Droughty	0.51	Low strength	0.00	Wetness depth	0.00
		Too acid	0.54	Wetness depth	0.00	Depth to bedrock	0.84
		Depth to bedrock	0.84	Shrink-swell	0.87	Too acid	0.98
		Water erosion	0.99				
Hudson--------------	35	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
		Water erosion	0.68	Wetness depth	0.24	Wetness depth	0.24
		Too acid	0.97	Shrink-swell	0.87		

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
79B:							
Mongaup-------------	85	Fair		Poor		Poor	
		Droughty	0.08	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.29			Depth to bedrock	0.29
		Too acid	0.54			Too acid	0.98
79C:							
Mongaup-------------	85	Fair		Poor		Poor	
		Droughty	0.08	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.29			Depth to bedrock	0.29
		Too acid	0.54			Slope	0.37
						Too acid	0.98
79D:							
Mongaup-------------	85	Fair		Poor		Poor	
		Droughty	0.08	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.29	Slope	0.50	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.29
						Too acid	0.98
79E:							
Mongaup-------------	85	Fair		Poor		Poor	
		Droughty	0.08	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.29	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.29
						Too acid	0.98
79F:							
Mongaup-------------	85	Fair		Poor		Poor	
		Droughty	0.08	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.29	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.29
						Too acid	0.98
80A:							
Fremont-------------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.54			Too clayey	0.60
		Too clayey	0.92			Rock fragments	0.88
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
80B:							
Fremont-------------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.54			Too clayey	0.60
		Too clayey	0.92			Rock fragments	0.88
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
80C:							
Fremont	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.54			Slope	0.37
		Too clayey	0.92			Too clayey	0.60
						Rock fragments	0.88
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
81B:							
Varysburg	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.65	Rock fragments	0.00
		Too acid	0.54	Low strength	0.78	Wetness depth	0.65
						Too acid	0.98
81C:							
Varysburg	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.65	Rock fragments	0.00
		Too acid	0.54	Low strength	0.78	Slope	0.37
						Wetness depth	0.65
						Too acid	0.98
81D:							
Varysburg	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Slope	0.50	Slope	0.00
		Too acid	0.54	Wetness depth	0.65	Rock fragments	0.00
				Low strength	0.78	Wetness depth	0.65
						Too acid	0.98
81E:							
Varysburg	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54	Wetness depth	0.65	Rock fragments	0.00
				Low strength	0.78	Wetness depth	0.65
						Too acid	0.98
82F:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Manlius	30	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.50	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Hard to reclaim (dense layer)	0.05
		Depth to bedrock	0.84			Depth to bedrock	0.84
						Too acid	0.98
84B:							
Elko	85	Fair		Fair		Fair	
		Too acid	0.05	Wetness depth	0.18	Rock fragments	0.12
		Droughty	0.19	Shrink-swell	0.87	Wetness depth	0.18
		Organic matter content low	0.50			Hard to reclaim (dense layer)	0.20
						Hard to reclaim (rock fragments)	0.32
						Too acid	0.41

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
84C:							
Elko----------------	85	Fair		Fair		Fair	
		Too acid	0.05	Wetness depth	0.18	Rock fragments	0.12
		Droughty	0.19	Shrink-swell	0.87	Wetness depth	0.18
		Organic matter content low	0.50			Hard to reclaim (dense layer)	0.20
						Hard to reclaim (rock fragments)	0.32
						Slope	0.37
						Too acid	0.41
85B:							
Onoville------------	85	Fair		Fair		Poor	
		Droughty	0.18	Wetness depth	0.07	Rock fragments	0.00
		Too acid	0.32	Shrink-swell	0.87	Hard to reclaim (dense layer)	0.03
		Organic matter content low	0.50			Wetness depth	0.07
		Too clayey	0.92			Too clayey	0.60
						Too acid	0.88
						Hard to reclaim (rock fragments)	0.92
85C:							
Onoville------------	85	Fair		Fair		Poor	
		Droughty	0.18	Wetness depth	0.07	Rock fragments	0.00
		Too acid	0.32	Shrink-swell	0.87	Hard to reclaim (dense layer)	0.03
		Organic matter content low	0.50			Wetness depth	0.07
		Too clayey	0.92			Slope	0.37
						Too clayey	0.60
						Too acid	0.88
						Hard to reclaim (rock fragments)	0.92
85D:							
Onoville------------	85	Fair		Fair		Poor	
		Droughty	0.18	Wetness depth	0.07	Slope	0.00
		Too acid	0.32	Slope	0.50	Rock fragments	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Hard to reclaim (dense layer)	0.03
		Too clayey	0.92			Wetness depth	0.07
						Too clayey	0.60
						Too acid	0.88
						Hard to reclaim (rock fragments)	0.92
86B:							
Eldred--------------	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Rock fragments	0.00
		Too acid	0.54	Shrink-swell	0.87	Wetness depth	0.32
		Too clayey	0.92			Too clayey	0.60
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
86C:							
Eldred--------------	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Rock fragments	0.00
		Too acid	0.54	Shrink-swell	0.87	Wetness depth	0.32
		Too clayey	0.92			Slope	0.37
						Too clayey	0.60
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
86D:							
Eldred--------------	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Wetness depth	0.32	Slope	0.00
		Too acid	0.54	Slope	0.50	Rock fragments	0.00
		Too clayey	0.92	Shrink-swell	0.87	Wetness depth	0.32
						Too clayey	0.60
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
87B:							
Shongo--------------	80	Fair		Poor		Poor	
		Too acid	0.32	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.32
		Droughty	0.51			Too clayey	0.60
		Water erosion	0.90			Rock fragments	0.88
		Too clayey	0.92				
87C:							
Shongo--------------	80	Fair		Poor		Poor	
		Too acid	0.32	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.32
		Droughty	0.51			Slope	0.37
		Water erosion	0.90			Too clayey	0.60
		Too clayey	0.92			Rock fragments	0.88
88A:							
Ivory---------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.20	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Rock fragments	0.12
		Water erosion	0.90			Too acid	0.76
						Hard to reclaim (rock fragments)	0.92
88B:							
Ivory---------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.20	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Rock fragments	0.12
		Water erosion	0.90			Too acid	0.76
						Hard to reclaim (rock fragments)	0.92

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
88C:							
Ivory	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.20	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Rock fragments	0.12
		Water erosion	0.90			Slope	0.37
						Too acid	0.76
						Hard to reclaim (rock fragments)	0.92
88D:							
Ivory	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Too acid	0.20	Wetness depth	0.00	Too clayey	0.00
		Organic matter content low	0.50	Slope	0.50	Wetness depth	0.00
		Water erosion	0.90	Shrink-swell	0.87	Rock fragments	0.12
						Too acid	0.76
						Hard to reclaim (rock fragments)	0.92
89B:							
Portville	80	Fair		Poor		Poor	
		Too acid	0.20	Wetness depth	0.00	Wetness depth	0.00
		Droughty	0.39	Shrink-swell	0.87	Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
		Water erosion	0.90			Too acid	0.98
89C:							
Portville	80	Fair		Poor		Poor	
		Too acid	0.20	Wetness depth	0.00	Wetness depth	0.00
		Droughty	0.39	Shrink-swell	0.87	Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
		Water erosion	0.90			Slope	0.37
						Too acid	0.98
90A:							
Brinkerton	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Droughty	0.47	Shrink-swell	0.98	Too clayey	0.53
		Too acid	0.54			Too acid	0.98
		Too clayey	0.92				
		Water erosion	0.99				
90B:							
Brinkerton	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Droughty	0.47	Shrink-swell	0.98	Too clayey	0.53
		Too acid	0.54			Too acid	0.98
		Too clayey	0.92				
		Water erosion	0.99				

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
91A:							
Palms	85	Poor		Poor		Poor	
		Wind erosion	0.00	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.84			Organic matter content high	0.00
						Hard to reclaim (rock fragments)	0.92
92:							
Carlisle	85	Poor		Poor		Poor	
		Wind erosion	0.00	Wetness depth	0.00	Wetness depth	0.00
						Organic matter content high	0.00
93:							
Saprists, inundated	85	Poor		Poor		Poor	
		Wind erosion	0.00	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.97			Organic matter content high	0.00
						Hard to reclaim (rock fragments)	0.92
94B:							
Frewsburg	80	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Too clayey	0.92			Too clayey	0.60
		Droughty	0.96			Too acid	0.88
		Depth to bedrock	0.99			Depth to bedrock	0.99
94C:							
Frewsburg	80	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Too clayey	0.92			Slope	0.37
		Droughty	0.96			Too clayey	0.60
		Depth to bedrock	0.99			Too acid	0.88
						Depth to bedrock	0.99
95B:							
Mandy	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
		Organic matter content low	0.50			Depth to bedrock	0.79
		Depth to bedrock	0.79				
95C:							
Mandy	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Slope	0.37
		Organic matter content low	0.50			Too acid	0.76
		Depth to bedrock	0.79			Depth to bedrock	0.79

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
95D:							
Mandy---------------	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.50	Rock fragments	0.00
		Organic matter content low	0.50			Too acid	0.76
		Depth to bedrock	0.79			Depth to bedrock	0.79
95E:							
Mandy---------------	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Too acid	0.76
		Depth to bedrock	0.79			Depth to bedrock	0.79
95F:							
Mandy---------------	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Too acid	0.76
		Depth to bedrock	0.79			Depth to bedrock	0.79
96B:							
Carrollton----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54	Wetness depth	0.88	Depth to bedrock	0.54
		Too acid	0.54			Wetness depth	0.88
		Droughty	0.58			Too acid	0.98
96C:							
Carrollton----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Depth to bedrock	0.54			Slope	0.37
		Too acid	0.54			Depth to bedrock	0.54
		Droughty	0.58			Too acid	0.98
96D:							
Carrollton----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.50	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.54
		Droughty	0.58			Too acid	0.98
96E:							
Carrollton----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.54
		Droughty	0.58			Too acid	0.98
96F:							
Carrollton----------	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Depth to bedrock	0.00	Slope	0.00
		Depth to bedrock	0.54	Slope	0.00	Rock fragments	0.00
		Too acid	0.54			Depth to bedrock	0.54
		Droughty	0.58			Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
97B:							
Kinzua	85	Fair		Good		Poor	
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
						Too acid	0.98
97C:							
Kinzua	85	Fair		Good		Poor	
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.00
		Too acid	0.54			Rock fragments	0.00
						Slope	0.37
						Too acid	0.98
97D:							
Kinzua	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Slope	0.50	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Too acid	0.98
97E:							
Kinzua	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Too acid	0.98
97F:							
Kinzua	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Too acid	0.98
98D:							
Kinzua	85	Fair		Fair		Poor	
		Organic matter content low	0.50	Slope	0.50	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Too acid	0.98
98E:							
Kinzua	85	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Hard to reclaim (rock fragments)	0.00
						Rock fragments	0.00
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
99B:							
Buchanan------------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Wetness depth	0.38	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54	Shrink-swell	0.97	Rock fragments	0.12
		Droughty	0.72			Wetness depth	0.38
						Too acid	0.98
99C:							
Buchanan------------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Wetness depth	0.38	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54	Shrink-swell	0.97	Rock fragments	0.12
		Droughty	0.72			Slope	0.37
						Wetness depth	0.38
						Too acid	0.98
99D:							
Buchanan------------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Wetness depth	0.38	Slope	0.00
		Too acid	0.54	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Droughty	0.72	Shrink-swell	0.97	Rock fragments	0.12
						Wetness depth	0.38
						Too acid	0.98
100:							
Udorthents----------	85	Not rated		Not rated		Not rated	
101:							
Udorthents, refuse substratum---------	90	Not rated		Not rated		Not rated	
102C:							
Mandy---------------	40	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Too acid	0.76
		Too acid	0.50			Depth to bedrock	0.79
		Depth to bedrock	0.79			Slope	0.96
Rock outcrop--------	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek---------	40	Fair		Fair		Poor	
		Too acid	0.05	Cobble content	0.85	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50	Depth to bedrock	0.99	Rock fragments	0.00
		Droughty	0.91			Too acid	0.59
						Slope	0.96
Rock outcrop--------	35	Not rated		Not rated		Not rated	

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
104B:							
Flatiron------------	80	Fair		Good		Fair	
		Too acid	0.08			Rock fragments	0.12
		Organic matter content low	0.50			Too acid	0.50
104C:							
Flatiron------------	80	Fair		Good		Fair	
		Too acid	0.08			Rock fragments	0.12
		Organic matter content low	0.50			Slope	0.37
						Too acid	0.50
104D:							
Flatiron------------	80	Fair		Fair		Poor	
		Too acid	0.08	Slope	0.50	Slope	0.00
		Organic matter content low	0.50			Rock fragments	0.12
						Too acid	0.50
104E:							
Flatiron------------	80	Fair		Poor		Poor	
		Too acid	0.08	Slope	0.00	Slope	0.00
		Organic matter content low	0.50			Rock fragments	0.12
						Too acid	0.50
108D:							
Hartleton-----------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Slope	0.50	Slope	0.00
		Too acid	0.54	Depth to bedrock	0.99	Hard to reclaim (rock fragments)	0.00
		Droughty	0.63			Rock fragments	0.00
						Too acid	0.98
108E:							
Hartleton-----------	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.54	Depth to bedrock	0.99	Hard to reclaim (rock fragments)	0.00
		Droughty	0.63			Rock fragments	0.00
						Too acid	0.98
108F:							
Hartleton-----------	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.54	Depth to bedrock	0.99	Hard to reclaim (rock fragments)	0.00
		Droughty	0.63			Rock fragments	0.00
						Too acid	0.98
131:							
Lamson--------------	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Wetness depth	0.00	Wetness depth	0.00
		Too acid	0.99				
		Water erosion	0.99				

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—Continued

Map symbol and soil name	Pct. of map unit	Potential source of reclamation material		Potential source of roadfill		Potential source of topsoil	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
132B:							
Wiscoy--------------	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Water erosion	0.06	Low strength	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.97				
132C:							
Wiscoy--------------	80	Poor		Poor		Poor	
		Droughty	0.00	Wetness depth	0.00	Hard to reclaim (dense layer)	0.00
		Water erosion	0.06	Low strength	0.00	Wetness depth	0.00
		Organic matter content low	0.50			Rock fragments	0.00
		Too acid	0.97			Slope	0.37
135C:							
Hudson--------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Organic matter content low	0.50	Wetness depth	0.24	Wetness depth	0.24
		Water erosion	0.68	Shrink-swell	0.87	Slope	0.37
		Too acid	0.97				
135D:							
Hudson--------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Organic matter content low	0.50	Wetness depth	0.24	Too clayey	0.00
		Water erosion	0.68	Slope	0.50	Wetness depth	0.24
		Too acid	0.97	Shrink-swell	0.87		
135E:							
Hudson--------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Slope	0.00	Slope	0.00
		Organic matter content low	0.50	Low strength	0.00	Too clayey	0.00
		Water erosion	0.68	Wetness depth	0.24	Wetness depth	0.24
		Too acid	0.97	Shrink-swell	0.87		
140D:							
Dunkirk-------------	85	Fair		Fair		Poor	
		Water erosion	0.68	Slope	0.50	Slope	0.00
		Too acid	0.84	Low strength	0.78	Too clayey	0.72
		Too clayey	0.92				
140E:							
Dunkirk-------------	85	Fair		Poor		Poor	
		Water erosion	0.68	Slope	0.00	Slope	0.00
		Too acid	0.84	Low strength	0.78	Too clayey	0.72
		Too clayey	0.92				

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
185C:							
Onoville------------	85	Fair		Fair		Poor	
		Droughty	0.18	Wetness depth	0.07	Rock fragments	0.00
		Too acid	0.32	Shrink-swell	0.87	Hard to reclaim (dense layer)	0.03
		Organic matter content low	0.50			Wetness depth	0.07
		Too clayey	0.92			Slope	0.37
						Too clayey	0.60
						Too acid	0.88
						Hard to reclaim (rock fragments)	0.92
185D:							
Onoville------------	85	Fair		Fair		Poor	
		Droughty	0.18	Wetness depth	0.07	Slope	0.00
		Too acid	0.32	Slope	0.50	Rock fragments	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Hard to reclaim (dense layer)	0.03
		Too clayey	0.92			Wetness depth	0.07
						Too clayey	0.60
						Too acid	0.88
						Hard to reclaim (rock fragments)	0.92
187B:							
Shongo--------------	80	Fair		Poor		Poor	
		Too acid	0.32	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.32
		Droughty	0.51			Too clayey	0.60
		Water erosion	0.90			Rock fragments	0.88
		Too clayey	0.92				
187C:							
Shongo--------------	80	Fair		Poor		Poor	
		Too acid	0.32	Wetness depth	0.00	Wetness depth	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Hard to reclaim (rock fragments)	0.32
		Droughty	0.51			Slope	0.37
		Water erosion	0.90			Too clayey	0.60
		Too clayey	0.92			Rock fragments	0.88
188B:							
Cavode--------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.12	Wetness depth	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Wetness depth	0.00
		Water erosion	0.90			Rock fragments	0.12
						Too acid	0.59
188C:							
Cavode--------------	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Too clayey	0.00
		Too acid	0.12	Wetness depth	0.00	Hard to reclaim (rock fragments)	0.00
		Organic matter content low	0.50	Shrink-swell	0.87	Wetness depth	0.00
		Water erosion	0.90			Rock fragments	0.12
						Slope	0.37
						Too acid	0.59

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
188D:							
Cavode	85	Poor		Poor		Poor	
		Too clayey	0.00	Low strength	0.00	Slope	0.00
		Too acid	0.12	Wetness depth	0.00	Too clayey	0.00
		Organic matter content low	0.50	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Water erosion	0.90	Shrink-swell	0.87	Wetness depth	0.00
						Rock fragments	0.12
						Too acid	0.59
189B:							
Portville	80	Fair		Poor		Poor	
		Too acid	0.20	Wetness depth	0.00	Wetness depth	0.00
		Droughty	0.39	Shrink-swell	0.87	Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
		Water erosion	0.90			Too acid	0.98
189C:							
Portville	80	Fair		Poor		Poor	
		Too acid	0.20	Wetness depth	0.00	Wetness depth	0.00
		Droughty	0.39	Shrink-swell	0.87	Rock fragments	0.00
		Organic matter content low	0.50			Hard to reclaim (rock fragments)	0.08
		Water erosion	0.90			Slope	0.37
						Too acid	0.98
195C:							
Mandy	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Rock fragments	0.00
		Too acid	0.50			Too acid	0.76
		Organic matter content low	0.50			Depth to bedrock	0.79
		Depth to bedrock	0.79			Slope	0.96
195D:							
Mandy	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.50	Rock fragments	0.00
		Organic matter content low	0.50			Too acid	0.76
		Depth to bedrock	0.79			Depth to bedrock	0.79
195E:							
Mandy	85	Poor		Poor		Poor	
		Droughty	0.00	Depth to bedrock	0.00	Slope	0.00
		Too acid	0.50	Slope	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Too acid	0.76
		Depth to bedrock	0.79			Depth to bedrock	0.79
199C:							
Buchanan	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Wetness depth	0.38	Hard to reclaim (rock fragments)	0.00
		Too acid	0.54	Shrink-swell	0.97	Rock fragments	0.12
		Droughty	0.72			Slope	0.37
						Wetness depth	0.38
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
199D:							
Buchanan------------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Wetness depth	0.38	Slope	0.00
		Too acid	0.54	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Droughty	0.72	Shrink-swell	0.97	Rock fragments	0.12
						Wetness depth	0.38
						Too acid	0.98
289B:							
Ceres---------------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.12	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Rock fragments	0.00
		Droughty	0.86			Too acid	0.76
289C:							
Ceres---------------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.12	Hard to reclaim (rock fragments)	0.00
		Too acid	0.50			Rock fragments	0.00
		Droughty	0.86			Slope	0.37
						Too acid	0.76
289D:							
Ceres---------------	85	Fair		Fair		Poor	
		Organic matter content low	0.12	Depth to bedrock	0.12	Slope	0.00
		Too acid	0.50	Slope	0.50	Hard to reclaim (rock fragments)	0.00
		Droughty	0.86			Rock fragments	0.00
						Too acid	0.76
289E:							
Ceres---------------	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Depth to bedrock	0.12	Hard to reclaim (rock fragments)	0.00
		Droughty	0.86			Rock fragments	0.00
						Too acid	0.76
289F:							
Ceres---------------	85	Fair		Poor		Poor	
		Organic matter content low	0.12	Slope	0.00	Slope	0.00
		Too acid	0.50	Depth to bedrock	0.12	Hard to reclaim (rock fragments)	0.00
		Droughty	0.86			Rock fragments	0.00
						Too acid	0.76
400:							
Wakeville-----------	80	Fair		Poor		Poor	
		Water erosion	0.68	Wetness depth	0.00	Hard to reclaim (rock fragments)	0.00
		Too acid	0.84			Wetness depth	0.00

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
496B:							
Gilpin	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.50	Wetness depth	0.88	Too acid	0.59
		Droughty	0.57			Too clayey	0.60
		Depth to bedrock	0.90			Wetness depth	0.88
		Too clayey	0.92			Depth to bedrock	0.90
496C:							
Gilpin	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Rock fragments	0.00
		Organic matter content low	0.50			Slope	0.37
		Droughty	0.57			Too acid	0.59
		Depth to bedrock	0.90			Too clayey	0.60
		Too clayey	0.92			Depth to bedrock	0.90
496D:							
Gilpin	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.50	Slope	0.50	Rock fragments	0.00
		Droughty	0.57			Too acid	0.59
		Depth to bedrock	0.90			Too clayey	0.60
		Too clayey	0.92			Depth to bedrock	0.90
496E:							
Gilpin	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.50	Slope	0.00	Rock fragments	0.00
		Droughty	0.57			Too acid	0.59
		Depth to bedrock	0.90			Too clayey	0.60
		Too clayey	0.92			Depth to bedrock	0.90
496F:							
Gilpin	85	Fair		Poor		Poor	
		Too acid	0.50	Depth to bedrock	0.00	Slope	0.00
		Organic matter content low	0.50	Slope	0.00	Rock fragments	0.00
		Droughty	0.57			Too acid	0.59
		Depth to bedrock	0.90			Too clayey	0.60
		Too clayey	0.92			Depth to bedrock	0.90
497D:							
Rayne	80	Fair		Fair		Poor	
		Organic matter content low	0.50	Slope	0.50	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
497E:							
Rayne	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98

Table 15.—Source of Reclamation Material, Roadfill, and Topsoil—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
497F:							
Rayne	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
498E:							
Rayne	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Slope	0.00	Slope	0.00
		Too acid	0.54			Rock fragments	0.00
						Hard to reclaim (rock fragments)	0.92
						Too acid	0.98
800:							
Holderton	80	Fair		Poor		Poor	
		Organic matter content low	0.50	Wetness depth	0.00	Wetness depth	0.00
		Water erosion	0.99			Hard to reclaim (rock fragments)	0.68
PG:							
Pits, gravel	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	85	Not rated		Not rated		Not rated	
W:							
Water	100	Not rated		Not rated		Not rated	

Table 16.—Dwellings and Small Commercial Buildings

(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
1:							
Udifluvents	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.61		
Fluvaquents	35	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
2:							
Hamlin	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35		
3:							
Tioga	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35		
4:							
Teel	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
5:							
Wayland	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
6A:							
Wyalusing	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
7A:							
Philo	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
8:							
Middlebury	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77

Table 16.—Dwellings and Small Commercial Buildings—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
9:							
Pawling	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
10:							
Atkins	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
11B:							
Ischua	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
						Slope	0.50
11C:							
Ischua	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to saturated zone	0.77
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.64
11D:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
11E:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
11F:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to hard bedrock	0.64
12B:							
Franklinville	85	Not limited		Somewhat limited		Somewhat limited	
				Depth to saturated zone	0.35	Slope	0.50
12C:							
Franklinville	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Depth to saturated zone	0.35		

Table 16.—Dwellings and Small Commercial Buildings—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
12D:							
Franklinville-------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
12E:							
Franklinville-------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
14B:							
Hornellsville-------	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	Slope	0.50
				Depth to soft bedrock	0.15	Shrink-swell	0.50
14C:							
Hornellsville-------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.15		
15B:							
Willdin-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.95	Depth to saturated zone	1.00	Depth to saturated zone	0.95
						Slope	0.50
15C:							
Willdin-------------	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.95	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.95
15D:							
Willdin-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.95	Depth to saturated zone	1.00	Depth to saturated zone	0.95
16A:							
Almond--------------	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
16B:							
Almond--------------	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
						Slope	0.50
16C:							
Almond--------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
17B:							
Salamanca-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
						Slope	0.12
17C:							
Salamanca-----------	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.77
17D:							
Salamanca-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
17E:							
Salamanca-----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
18A:							
Pope----------------	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
19A:							
Olean---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Shrink-swell	0.50			Shrink-swell	0.50
19B:							
Olean---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Shrink-swell	0.50			Shrink-swell	0.50
20A:							
Unadilla------------	85	Not limited		Not limited		Not limited	
20B:							
Unadilla------------	85	Not limited		Not limited		Not limited	
20C:							
Unadilla------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
20D:							
Unadilla------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
22A:							
Allard--------------	85	Not limited		Not limited		Not limited	

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
22B:							
Allard--------------	85	Not limited		Not limited		Not limited	
25A:							
Chenango------------	85	Not limited		Not limited		Not limited	
25B:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
25C:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
25D:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
25E:							
Chenango------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
25F:							
Chenango------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
26A:							
Chenango, fan-------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35		
26B:							
Chenango, fan-------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Flooding	1.00
				Depth to saturated zone	0.35	Slope	0.50
27A:							
Castile-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
27B:							
Castile-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
						Slope	0.50
28A:							
Scio----------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
29A:							
Chenango------------	85	Not limited		Not limited		Not limited	
29B:							
Chenango------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
29C:							
Chenango------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
29D:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
29E:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
31B:							
Collamer------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
31C:							
Collamer------------	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.77
32A:							
Churchville---------	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
32B:							
Churchville---------	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
33A:							
Wallington----------	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
34:							
Getzville-----------	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
35A:							
Rhinebeck-----------	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	0.50			Shrink-swell	0.50
35B:							
Rhinebeck-----------	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	0.50			Shrink-swell	0.50

Table 16.—Dwellings and Small Commercial Buildings—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
35C:							
Rhinebeck-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50			Shrink-swell	0.50
36:							
Canadice------------	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
37A:							
Tonawanda-----------	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
37B:							
Tonawanda-----------	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
38A:							
Niagara-------------	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
38B:							
Niagara-------------	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
39A:							
Halsey--------------	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
40A:							
Williamson----------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.90	Depth to saturated zone	1.00	Depth to saturated zone	0.90
40B:							
Williamson----------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.90	Depth to saturated zone	1.00	Depth to saturated zone	0.90
40C:							
Williamson----------	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.90	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.90
41A:							
Barcelona-----------	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

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
41B:							
Barcelona	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
42A:							
Elnora	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
42B:							
Elnora	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
						Slope	0.50
43:							
Canandaigua, silt loam	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
44:							
Canandaigua, mucky silt loam	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
45:							
Canandaigua, acid substratum	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
46:							
Swormville	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
47A:							
Minoa	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
48A:							
Colonie	80	Not limited		Not limited		Not limited	
48B:							
Colonie	80	Not limited		Not limited		Somewhat limited	
						Slope	0.50
48C:							
Colonie	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
49A:							
Red Hook	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

Table 16.—Dwellings and Small Commercial Buildings—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
50A:							
Canaseraga----------	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
50B:							
Canaseraga----------	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
						Slope	0.50
50C:							
Canaseraga----------	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.98	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.98
51B:							
Chadakoin-----------	85	Not limited		Somewhat limited		Somewhat limited	
				Depth to saturated zone	0.61	Slope	0.50
51C:							
Chadakoin-----------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Depth to saturated zone	0.61		
51D:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
51E:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
51F:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
52B:							
Valois--------------	85	Not limited		Not limited		Somewhat limited	
						Slope	0.50
52C:							
Valois--------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
52D:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
52E:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
52F:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
53C:							
Valois	30	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
Volusia	25	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
Mardin	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.04	Slope	0.04	Slope	1.00
55A:							
Darien	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
55B:							
Darien	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
						Slope	0.12
55C:							
Darien	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
56B:							
Chautauqua	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
						Slope	0.50
56C:							
Chautauqua	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.77
56D:							
Chautauqua	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
57A:							
Busti	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
57B:							
Busti	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
						Slope	0.50

Table 16.—Dwellings and Small Commercial Buildings—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
57C:							
Busti	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
58B:							
Rushford	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.84	Depth to saturated zone	1.00	Depth to saturated zone	0.84
						Slope	0.50
58C:							
Rushford	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.84	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.84
59B:							
Yorkshire	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
						Slope	0.88
59C:							
Yorkshire	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
59D:							
Yorkshire	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
60A:							
Napoli	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
60B:							
Napoli	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
						Slope	0.12
60C:							
Napoli	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
60D:							
Napoli	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00

Table 16.—Dwellings and Small Commercial Buildings—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
61B:							
Schuyler	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
						Slope	0.12
61C:							
Schuyler	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.77
61D:							
Schuyler	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
61E:							
Schuyler	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
61F:							
Schuyler	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
62B:							
Mardin	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
						Slope	0.50
62C:							
Mardin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
62D:							
Mardin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
63B:							
Langford	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.81	Depth to saturated zone	1.00	Depth to saturated zone	0.81
						Slope	0.50
63C:							
Langford	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.81	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.81

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
63D:							
Langford------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.81	Depth to saturated zone	1.00	Depth to saturated zone	0.81
64C:							
Mardin--------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
66B:							
Volusia-------------	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
						Slope	0.50
67A:							
Dalton--------------	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
67B:							
Dalton--------------	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
						Slope	0.50
68A:							
Volusia-------------	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
68B:							
Volusia-------------	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
						Slope	0.50
68C:							
Volusia-------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
69A:							
Erie----------------	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
69B:							
Erie----------------	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
						Slope	0.50

Table 16.—Dwellings and Small Commercial Buildings—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
69C:							
Erie----------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
71E:							
Mongaup-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
71F:							
Mongaup-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
72B:							
Towerville----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
						Slope	0.12
72C:							
Towerville----------	80	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Depth to hard bedrock	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.29	Slope	0.63	Depth to hard bedrock	0.29
72D:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
72E:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29
72F:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Depth to hard bedrock	0.29	Depth to hard bedrock	1.00	Depth to hard bedrock	0.29

Table 16.—Dwellings and Small Commercial Buildings—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
73B:							
Gretor	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
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to hard bedrock	0.84
						Slope	0.50
73C:							
Gretor	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to hard bedrock	0.84	Depth to hard bedrock	1.00	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.84
74:							
Ashville	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
75:							
Alden	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
76A:							
Orpark	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
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
76B:							
Orpark	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
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to hard bedrock	0.79
						Slope	0.12
76C:							
Orpark	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to hard bedrock	0.79	Depth to hard bedrock	1.00	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.79
77A:							
Chippewa	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

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
78A:							
Hornell	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	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.15		
78B:							
Hornell	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	0.50	Shrink-swell	0.50	Slope	0.50
				Depth to soft bedrock	0.15	Shrink-swell	0.50
78C:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
				Depth to soft bedrock	0.15		
78D:							
Hornell	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	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
				Depth to soft bedrock	0.15		
78F:							
Hornell	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	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
				Depth to soft bedrock	0.15		
Hudson	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		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	Shrink-swell	0.50
79B:							
Mongaup	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
						Slope	0.50
79C:							
Mongaup	85	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to hard bedrock	0.71

Table 16.—Dwellings and Small Commercial Buildings—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
79D:							
Mongaup-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
79E:							
Mongaup-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
79F:							
Mongaup-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to hard bedrock	0.71
80A:							
Fremont-------------	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
80B:							
Fremont-------------	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
						Slope	0.50
80C:							
Fremont-------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
81B:							
Varysburg-----------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.20	Depth to saturated zone	1.00	Slope	0.50
				Shrink-swell	0.50	Depth to saturated zone	0.20
81C:							
Varysburg-----------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	1.00
		Depth to saturated zone	0.20	Slope	0.63	Depth to saturated zone	0.20
				Shrink-swell	0.50		
81D:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.20	Depth to saturated zone	1.00	Depth to saturated zone	0.20
				Shrink-swell	0.50		

Table 16.—Dwellings and Small Commercial Buildings—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
81E:							
Varysburg	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.20	Depth to saturated zone	1.00	Depth to saturated zone	0.20
				Shrink-swell	0.50		
82F:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Manlius	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.15	Depth to hard bedrock	1.00	Depth to hard bedrock	0.15
84B:							
Elko	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.95	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50
84C:							
Elko	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.95	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.95
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
85B:							
Onoville	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	Slope	0.88
						Shrink-swell	0.50
85C:							
Onoville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
85D:							
Onoville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86B:							
Eldred	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Shrink-swell	0.50	Shrink-swell	0.50	Slope	0.50
						Shrink-swell	0.50

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
86C:							
Eldred	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.77
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
86D:							
Eldred	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.77	Depth to saturated zone	1.00	Depth to saturated zone	0.77
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
87B:							
Shongo	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	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
87C:							
Shongo	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
88A:							
Ivory	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	Shrink-swell	0.50
88B:							
Ivory	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	Slope	0.50
						Shrink-swell	0.50
88C:							
Ivory	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
88D:							
Ivory	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 16.—Dwellings and Small Commercial Buildings—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
89B:							
Portville-----------	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	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
89C:							
Portville-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
90A:							
Brinkerton----------	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
90B:							
Brinkerton----------	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			Slope	0.50
						Shrink-swell	0.50
91A:							
Palms---------------	85	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
		Organic matter content	1.00			Organic matter content	1.00
92:							
Carlisle------------	85	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
		Organic matter content	1.00	Organic matter content	1.00	Organic matter content	1.00
93:							
Saprists, inundated-	85	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
		Organic matter content	1.00			Organic matter content	1.00
94B:							
Frewsburg-----------	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
		Depth to hard bedrock	0.01	Depth to hard bedrock	1.00	Slope	0.12
						Depth to hard bedrock	0.01

Table 16.—Dwellings and Small Commercial Buildings—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
94C:							
Frewsburg-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Depth to hard bedrock	1.00	Depth to saturated zone	1.00
		Depth to hard bedrock	0.01	Slope	0.63	Depth to hard bedrock	0.01
95B:							
Mandy---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Slope	0.50
						Depth to hard bedrock	0.20
95C:							
Mandy---------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Slope	0.63	Depth to hard bedrock	0.20
95D:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
95E:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
95F:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
96B:							
Carrollton----------	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Slope	0.50
		Depth to saturated zone	0.01	Depth to saturated zone	0.99	Depth to hard bedrock	0.46
						Depth to saturated zone	0.01
96C:							
Carrollton----------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Slope	0.63	Depth to hard bedrock	0.46
96D:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
96E:							
Carrollton	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
96F:							
Carrollton	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.46	Depth to hard bedrock	1.00	Depth to hard bedrock	0.46
97B:							
Kinzua	85	Not limited		Somewhat limited		Somewhat limited	
				Depth to saturated zone	0.15	Slope	0.50
97C:							
Kinzua	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
				Depth to saturated zone	0.15		
97D:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
97E:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
97F:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
98D:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
98E:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
99B:							
Buchanan	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Slope	0.88
		Shrink-swell	0.50	Shrink-swell	0.50	Depth to saturated zone	0.67
						Shrink-swell	0.50
99C:							
Buchanan	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.67
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 16.—Dwellings and Small Commercial Buildings—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
99D:							
Buchanan------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Depth to saturated zone	0.67
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
100:							
Udorthents----------	85	Not rated		Not rated		Not rated	
101:							
Udorthents, refuse substratum---------	90	Not rated		Not rated		Not rated	
102C:							
Mandy---------------	40	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.20
Rock outcrop--------	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek---------	40	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.04	Slope	0.04	Slope	1.00
				Depth to hard bedrock	0.01		
Rock outcrop--------	35	Not rated		Not rated		Not rated	
104B:							
Flatiron------------	80	Not limited		Not limited		Somewhat limited	
						Slope	0.50
104C:							
Flatiron------------	80	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Slope	0.63	Slope	1.00
104D:							
Flatiron------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
104E:							
Flatiron------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
108D:							
Hartleton-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.01		
108E:							
Hartleton-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.01		

Table 16.—Dwellings and Small Commercial Buildings—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
108F:							
Hartleton-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.01		
131:							
Lamson--------------	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
132B:							
Wiscoy--------------	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
						Slope	0.50
132C:							
Wiscoy--------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
135C:							
Hudson--------------	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.88
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
135D:							
Hudson--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		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	Shrink-swell	0.50
135E:							
Hudson--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		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	Shrink-swell	0.50
140D:							
Dunkirk-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
140E:							
Dunkirk-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
185C:							
Onoville------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 16.—Dwellings and Small Commercial Buildings—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
185D:							
Onoville------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	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
187B:							
Shongo--------------	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	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
187C:							
Shongo--------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
188B:							
Cavode--------------	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	Slope	0.50
						Shrink-swell	0.50
188C:							
Cavode--------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
188D:							
Cavode--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	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
189B:							
Portville-----------	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	0.50	Shrink-swell	0.50	Slope	0.88
						Shrink-swell	0.50
189C:							
Portville-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Table 16.—Dwellings and Small Commercial Buildings—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
195C:							
Mandy----------------	85	Somewhat limited		Very limited		Very limited	
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Slope	1.00
		Slope	0.04	Slope	0.04	Depth to hard bedrock	0.20
195D:							
Mandy----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
195E:							
Mandy----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.20	Depth to hard bedrock	1.00	Depth to hard bedrock	0.20
199C:							
Buchanan-------------	85	Somewhat limited		Very limited		Very limited	
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Slope	1.00
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.67
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
199D:							
Buchanan-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.67	Depth to saturated zone	1.00	Depth to saturated zone	0.67
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
289B:							
Ceres----------------	85	Not limited		Somewhat limited		Somewhat limited	
				Depth to hard bedrock	0.88	Slope	0.50
289C:							
Ceres----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.63	Depth to hard bedrock	0.88	Slope	1.00
				Slope	0.63		
289D:							
Ceres----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.88		
289E:							
Ceres----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.88		
289F:							
Ceres----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
				Depth to hard bedrock	0.88		

Table 16.—Dwellings and Small Commercial Buildings—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
400:							
Wakeville	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
496B:							
Gilpin	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Slope	0.50
		Depth to saturated zone	0.01	Depth to saturated zone	0.99	Depth to hard bedrock	0.10
						Depth to saturated zone	0.01
496C:							
Gilpin	85	Somewhat limited		Very limited		Very limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Slope	0.63	Depth to hard bedrock	0.10
496D:							
Gilpin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
496E:							
Gilpin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
496F:							
Gilpin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to hard bedrock	0.10	Depth to hard bedrock	1.00	Depth to hard bedrock	0.10
497D:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
497E:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
497F:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
498E:							
Rayne	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
800:							
Holderton	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

Table 16.—Dwellings and Small Commercial Buildings—Continued

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
PG:							
Pits, gravel--------	85	Not rated		Not rated		Not rated	
Ur:							
Urban land----------	85	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping

(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
1:							
Udifluvents	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Cutbanks cave	1.00	Flooding	1.00
		Frost action	0.50	Flooding	0.80	Gravel content	0.22
				Depth to saturated zone	0.61	Droughty	0.01
						Large stones content	0.01
Fluvaquents	35	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	Gravel content	0.27
2:							
Hamlin	85	Very limited		Somewhat limited		Somewhat limited	
		Frost action	1.00	Flooding	0.60	Flooding	0.60
		Flooding	1.00	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
3:							
Tioga	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Depth to saturated zone	0.35		
				Cutbanks cave	0.10		
4:							
Teel	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Flooding	1.00	Flooding	0.60	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10		
5:							
Wayland	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	Flooding	0.80	Depth to saturated zone	1.00
		Flooding	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
6A:							
Wyalusing	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		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
7A:							
Philo	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10		
8:							
Middlebury	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Frost action	0.50	Flooding	0.60	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10		
9:							
Pawling	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Depth to saturated zone	1.00	Flooding	0.60
		Frost action	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Flooding	0.60		
10:							
Atkins	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	Flooding	0.80	Depth to saturated zone	1.00
		Flooding	1.00	Cutbanks cave	0.10		
		Low strength	1.00				
11B:							
Ischua	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to bedrock	0.65
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10	Gravel content	0.01
		Low strength	0.22				
11C:							
Ischua	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.64	Depth to hard bedrock	1.00	Depth to bedrock	0.65
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10	Gravel content	0.01
		Low strength	0.22				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
11D:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.64	Slope	1.00	Depth to bedrock	0.65
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10	Gravel content	0.01
		Low strength	0.22				
11E:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.64	Slope	1.00	Depth to bedrock	0.65
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10	Gravel content	0.01
		Low strength	0.22				
11F:							
Ischua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.64	Slope	1.00	Depth to bedrock	0.65
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10	Gravel content	0.01
		Low strength	0.22				
12B:							
Franklinville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	0.35	Gravel content	0.01
				Cutbanks cave	0.10		
12C:							
Franklinville	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Depth to saturated zone	0.35	Gravel content	0.01
				Cutbanks cave	0.10		
12D:							
Franklinville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
12E:							
Franklinville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
14B:							
Hornellsville-------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Depth to bedrock	0.16
		Depth to saturated zone	0.99	Depth to soft bedrock	0.15		
		Shrink-swell	0.50	Cutbanks cave	0.10		
14C:							
Hornellsville-------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Slope	0.63	Slope	0.63
		Depth to saturated zone	0.99	Too clayey	0.50	Depth to bedrock	0.16
		Slope	0.63	Depth to soft bedrock	0.15		
		Shrink-swell	0.50	Cutbanks cave	0.10		
15B:							
Willdin-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.68	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Frost action	0.50	Dense layer	0.50	Droughty	0.42
				Cutbanks cave	0.10	Gravel content	0.04
						Large stones content	0.01
15C:							
Willdin-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.68	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Dense layer	0.50	Droughty	0.42
				Cutbanks cave	0.10	Gravel content	0.04
						Large stones content	0.01
15D:							
Willdin-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.68	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Frost action	0.50	Dense layer	0.50	Droughty	0.42
				Cutbanks cave	0.10	Gravel content	0.04
						Large stones content	0.01
16A:							
Almond--------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Low strength	0.22				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
16B:							
Almond	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Low strength	0.22				
16C:							
Almond	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Slope	0.63	Slope	0.63
		Slope	0.63	Cutbanks cave	0.10		
		Low strength	0.22				
17B:							
Salamanca	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10		
17C:							
Salamanca	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10		
17D:							
Salamanca	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10		
17E:							
Salamanca	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	0.10		
18A:							
Pope	85	Very limited		Somewhat limited		Somewhat limited	
		Flooding	1.00	Flooding	0.60	Flooding	0.60
		Frost action	0.50	Cutbanks cave	0.10		
19A:							
Olean	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Low strength	0.78	Cutbanks cave	1.00		
		Shrink-swell	0.50				
		Depth to saturated zone	0.43				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
19B:							
Olean	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Low strength	0.78	Cutbanks cave	1.00		
		Shrink-swell	0.50				
		Depth to saturated zone	0.43				
20A:							
Unadilla	85	Very limited		Very limited		Not limited	
		Frost action	1.00	Cutbanks cave	1.00		
20B:							
Unadilla	85	Very limited		Very limited		Not limited	
		Frost action	1.00	Cutbanks cave	1.00		
20C:							
Unadilla	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Cutbanks cave	1.00	Slope	0.63
		Slope	0.63	Slope	0.63		
20D:							
Unadilla	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Cutbanks cave	1.00		
22A:							
Allard	85	Very limited		Very limited		Not limited	
		Frost action	1.00	Cutbanks cave	1.00		
22B:							
Allard	85	Very limited		Very limited		Not limited	
		Frost action	1.00	Cutbanks cave	1.00		
25A:							
Chenango	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
						Droughty	0.05
25B:							
Chenango	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
						Droughty	0.05
25C:							
Chenango	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Gravel content	0.06
						Droughty	0.05
25D:							
Chenango	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
						Droughty	0.05
25E:							
Chenango	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
						Droughty	0.05

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—Continued

Map symbol and soil name	Pct. of map unit	Local roads and streets: Rating class and limiting features	Local roads and streets: Value	Shallow excavations: Rating class and limiting features	Shallow excavations: Value	Lawns and landscaping: Rating class and limiting features	Lawns and landscaping: Value
25F:							
Chenango------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
						Droughty	0.05
26A:							
Chenango, fan-------	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.27
		Flooding	0.40	Depth to saturated zone	0.35	Droughty	0.03
26B:							
Chenango, fan-------	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.27
		Flooding	0.40	Depth to saturated zone	0.35	Droughty	0.03
27A:							
Castile-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Gravel content	0.68
		Depth to saturated zone	0.43	Cutbanks cave	1.00	Depth to saturated zone	0.43
						Droughty	0.24
27B:							
Castile-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Gravel content	0.68
		Depth to saturated zone	0.43	Cutbanks cave	1.00	Depth to saturated zone	0.43
						Droughty	0.24
28A:							
Scio----------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	1.00		
29A:							
Chenango------------	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.08
						Droughty	0.05
29B:							
Chenango------------	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.08
						Droughty	0.05
29C:							
Chenango------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Gravel content	0.08
						Droughty	0.05
29D:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.08
						Droughty	0.05

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
29E:							
Chenango------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.08
						Droughty	0.05
31B:							
Collamer------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Low strength	0.78	Cutbanks cave	0.50		
		Depth to saturated zone	0.43				
31C:							
Collamer------------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Slope	0.63
		Low strength	0.78	Slope	0.63	Depth to saturated zone	0.43
		Slope	0.63	Cutbanks cave	0.50		
		Depth to saturated zone	0.43				
32A:							
Churchville---------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Cutbanks cave	1.00		
		Depth to saturated zone	0.99				
		Shrink-swell	0.50				
32B:							
Churchville---------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Cutbanks cave	1.00		
		Depth to saturated zone	0.99				
		Shrink-swell	0.50				
33A:							
Wallington----------	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	Droughty	0.68
34:							
Getzville-----------	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	1.00		
35A:							
Rhinebeck-----------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50		
		Depth to saturated zone	0.99	Cutbanks cave	0.50		
		Shrink-swell	0.50				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
35B:							
Rhinebeck	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50		
		Depth to saturated zone	0.99	Cutbanks cave	0.50		
		Shrink-swell	0.50				
35C:							
Rhinebeck	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Slope	0.63	Slope	0.63
		Depth to saturated zone	0.99	Too clayey	0.50		
		Slope	0.63	Cutbanks cave	0.50		
		Shrink-swell	0.50				
36:							
Canadice	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	Too clayey	0.50		
		Low strength	1.00	Cutbanks cave	0.10		
		Shrink-swell	0.50				
37A:							
Tonawanda	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.50		
37B:							
Tonawanda	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.50		
38A:							
Niagara	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Low strength	0.22				
38B:							
Niagara	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Low strength	0.22				
39A:							
Halsey	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		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
40A:							
Williamson----------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.60
		Depth to saturated zone	0.60	Cutbanks cave	0.10	Droughty	0.01
40B:							
Williamson----------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.60
		Depth to saturated zone	0.60	Cutbanks cave	0.10	Droughty	0.01
40C:							
Williamson----------	85	Very limited		Very limited		Somewhat limited	
		Frost action	1.00	Depth to saturated zone	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.60
		Depth to saturated zone	0.60	Cutbanks cave	0.10	Droughty	0.01
41A:							
Barcelona-----------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Low strength	0.22				
41B:							
Barcelona-----------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Low strength	0.22				
42A:							
Elnora--------------	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	1.00	Droughty	0.41
42B:							
Elnora--------------	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	1.00	Droughty	0.41
43:							
Canandaigua, silt loam---------------	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	Cutbanks cave	0.10		
		Low strength	1.00				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
44:							
Canandaigua, mucky silt loam----------	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	0.10		
		Low strength	1.00				
45:							
Canandaigua, acid substratum---------	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	Cutbanks cave	0.10		
		Low strength	1.00				
46:							
Swormville----------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
47A:							
Minoa---------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
48A:							
Colonie-------------	80	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.29
48B:							
Colonie-------------	80	Not limited		Very limited		Somewhat limited	
				Cutbanks cave	1.00	Droughty	0.29
48C:							
Colonie-------------	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
				Slope	0.63	Droughty	0.29
49A:							
Red Hook------------	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
50A:							
Canaseraga----------	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	Dense layer	0.50		
				Cutbanks cave	0.10		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
50B:							
Canaseraga----------	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	Dense layer	0.50		
				Cutbanks cave	0.10		
50C:							
Canaseraga----------	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	Slope	0.63	Slope	0.63
		Slope	0.63	Dense layer	0.50		
				Cutbanks cave	0.10		
51B:							
Chadakoin-----------	85	Somewhat limited		Somewhat limited		Not limited	
		Frost action	0.50	Depth to saturated zone	0.61		
				Cutbanks cave	0.10		
51C:							
Chadakoin-----------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Depth to saturated zone	0.61		
				Cutbanks cave	0.10		
51D:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
51E:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
51F:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10		
52B:							
Valois--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
52C:							
Valois--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Gravel content	0.06
52D:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
52E:							
Valois	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
52F:							
Valois	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
53C:							
Valois	30	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Gravel content	0.06
		Slope	0.04	Slope	0.04	Slope	0.04
Volusia	25	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	Dense layer	0.50	Droughty	0.98
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
				Slope	0.04	Gravel content	0.01
Mardin	20	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
		Frost action	0.50	Dense layer	0.50	Droughty	0.96
		Slope	0.04	Cutbanks cave	0.10	Slope	0.04
				Slope	0.04		
55A:							
Darien	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
55B:							
Darien	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
55C:							
Darien	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00	Slope	0.63
		Slope	0.63	Slope	0.63		
56B:							
Chautauqua	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	1.00		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
56C:							
Chautauqua	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Frost action	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Slope	0.63		
56D:							
Chautauqua	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Cutbanks cave	1.00		
57A:							
Busti	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
57B:							
Busti	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00		
57C:							
Busti	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Cutbanks cave	1.00	Slope	0.63
		Slope	0.63	Slope	0.63		
58B:							
Rushford	80	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.52	Depth to saturated zone	1.00	Droughty	0.69
		Frost action	0.50	Dense layer	0.50	Depth to saturated zone	0.52
				Cutbanks cave	0.50	Gravel content	0.01
58C:							
Rushford	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Droughty	0.69
		Depth to saturated zone	0.52	Slope	0.63	Slope	0.63
		Frost action	0.50	Dense layer	0.50	Depth to saturated zone	0.52
				Cutbanks cave	0.50	Gravel content	0.01
59B:							
Yorkshire	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.83	Depth to saturated zone	1.00	Depth to saturated zone	0.83
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.48
						Gravel content	0.08

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
59C:							
Yorkshire	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.83	Depth to saturated zone	1.00	Depth to saturated zone	0.83
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.48
						Gravel content	0.08
59D:							
Yorkshire	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.83	Depth to saturated zone	1.00	Depth to saturated zone	0.83
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.48
						Gravel content	0.08
60A:							
Napoli	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	Droughty	0.01
60B:							
Napoli	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	Droughty	0.01
60C:							
Napoli	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	Slope	0.63	Slope	0.63
		Slope	0.63	Cutbanks cave	0.10	Droughty	0.01
60D:							
Napoli	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10	Droughty	0.01
61B:							
Schuyler	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Dense layer	0.50		
				Cutbanks cave	0.10		
61C:							
Schuyler	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Dense layer	0.50		
				Cutbanks cave	0.10		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
61D:							
Schuyler	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Dense layer	0.50		
				Cutbanks cave	0.10		
61E:							
Schuyler	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Dense layer	0.50		
				Cutbanks cave	0.10		
61F:							
Schuyler	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Dense layer	0.50		
				Cutbanks cave	0.10		
62B:							
Mardin	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
		Frost action	0.50	Dense layer	0.50	Droughty	0.96
				Cutbanks cave	0.10		
62C:							
Mardin	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
		Slope	0.63	Slope	0.63	Droughty	0.96
		Frost action	0.50	Dense layer	0.50	Slope	0.63
				Cutbanks cave	0.10		
62D:							
Mardin	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
		Frost action	0.50	Dense layer	0.50	Droughty	0.96
				Cutbanks cave	0.10		
63B:							
Langford	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Droughty	0.49
		Depth to saturated zone	0.48	Cutbanks cave	1.00	Depth to saturated zone	0.48
				Dense layer	0.50	Gravel content	0.01

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
63C:							
Langford------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.49
		Depth to saturated zone	0.48	Slope	0.63	Depth to saturated zone	0.48
				Dense layer	0.50	Gravel content	0.01
63D:							
Langford------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Droughty	0.49
		Depth to saturated zone	0.48	Cutbanks cave	1.00	Depth to saturated zone	0.48
				Dense layer	0.50	Gravel content	0.01
64C:							
Mardin--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.96	Depth to saturated zone	1.00	Depth to saturated zone	0.96
		Slope	0.63	Slope	0.63	Droughty	0.96
		Frost action	0.50	Dense layer	0.50	Slope	0.63
				Cutbanks cave	0.10		
66B:							
Volusia-------------	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	Dense layer	0.50	Droughty	0.98
				Cutbanks cave	0.10	Gravel content	0.01
67A:							
Dalton--------------	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	1.00	Droughty	0.35
				Dense layer	0.50		
67B:							
Dalton--------------	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	1.00	Droughty	0.35
				Dense layer	0.50		
68A:							
Volusia-------------	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	Dense layer	0.50	Droughty	0.98
				Cutbanks cave	0.10	Gravel content	0.01
68B:							
Volusia-------------	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	Dense layer	0.50	Droughty	0.98
				Cutbanks cave	0.10	Gravel content	0.01

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
68C:							
Volusia	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	Slope	0.63	Droughty	0.98
		Slope	0.63	Dense layer	0.50	Slope	0.63
				Cutbanks cave	0.10	Gravel content	0.01
69A:							
Erie	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	Dense layer	0.50	Droughty	1.00
				Cutbanks cave	0.10	Gravel content	0.01
69B:							
Erie	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	Dense layer	0.50	Droughty	1.00
				Cutbanks cave	0.10	Gravel content	0.01
69C:							
Erie	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	Slope	0.63	Droughty	1.00
		Slope	0.63	Dense layer	0.50	Slope	0.63
				Cutbanks cave	0.10	Gravel content	0.01
71E:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
						Gravel content	0.04
						Large stones content	0.01
71F:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
						Gravel content	0.04
						Large stones content	0.01
72B:							
Towerville	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Depth to saturated zone	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
72C:							
Towerville----------	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	0.63
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Slope	0.63	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10		
72D:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Depth to saturated zone	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10		
72E:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Depth to saturated zone	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10		
72F:							
Towerville----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to saturated zone	0.43
		Depth to saturated zone	0.43	Depth to saturated zone	1.00	Depth to bedrock	0.29
		Depth to hard bedrock	0.29	Cutbanks cave	0.10		
73B:							
Gretor--------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to bedrock	0.84
		Depth to hard bedrock	0.84	Cutbanks cave	0.10	Gravel content	0.25
						Droughty	0.10
73C:							
Gretor--------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to bedrock	0.84
		Depth to hard bedrock	0.84	Slope	0.63	Slope	0.63
		Slope	0.63	Cutbanks cave	0.10	Gravel content	0.25
						Droughty	0.10

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
74:							
Ashville------------	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		
75:							
Alden---------------	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		
		Low strength	0.22				
76A:							
Orpark--------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to bedrock	0.80
		Depth to hard bedrock	0.79	Cutbanks cave	0.10		
		Low strength	0.22				
76B:							
Orpark--------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to bedrock	0.80
		Depth to hard bedrock	0.79	Cutbanks cave	0.10		
		Low strength	0.22				
76C:							
Orpark--------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to bedrock	0.80
		Depth to hard bedrock	0.79	Slope	0.63	Slope	0.63
		Slope	0.63	Cutbanks cave	0.10		
		Low strength	0.22				
77A:							
Chippewa------------	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	Dense layer	0.50	Droughty	0.69
				Cutbanks cave	0.10		
78A:							
Hornell-------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Depth to bedrock	0.16
		Depth to saturated zone	0.99	Depth to soft bedrock	0.15		
		Shrink-swell	0.50	Cutbanks cave	0.10		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
78B:							
Hornell	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Depth to bedrock	0.16
		Depth to saturated zone	0.99	Depth to soft bedrock	0.15		
		Shrink-swell	0.50	Cutbanks cave	0.10		
78C:							
Hornell	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Slope	0.63	Slope	0.63
		Depth to saturated zone	0.99	Too clayey	0.50	Depth to bedrock	0.16
		Slope	0.63	Depth to soft bedrock	0.15		
		Shrink-swell	0.50	Cutbanks cave	0.10		
78D:							
Hornell	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Depth to bedrock	0.16
		Depth to saturated zone	0.99	Depth to soft bedrock	0.15		
		Shrink-swell	0.50	Cutbanks cave	0.10		
78F:							
Hornell	40	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Depth to bedrock	0.16
		Depth to saturated zone	0.99	Depth to soft bedrock	0.15		
		Shrink-swell	0.50	Cutbanks cave	0.10		
Hudson	35	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.50		
		Frost action	0.50				
79B:							
Mongaup	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
						Gravel content	0.06
79C:							
Mongaup	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to hard bedrock	0.71	Depth to hard bedrock	1.00	Depth to bedrock	0.71
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
						Gravel content	0.06

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
79D:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
						Gravel content	0.06
79E:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
						Gravel content	0.06
79F:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Depth to hard bedrock	0.71	Slope	1.00	Depth to bedrock	0.71
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
						Gravel content	0.06
80A:							
Fremont	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.99				
80B:							
Fremont	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Cutbanks cave	0.10		
		Depth to saturated zone	0.99				
80C:							
Fremont	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Slope	0.63	Slope	0.63
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Slope	0.63				
81B:							
Varysburg	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.10
		Depth to saturated zone	0.10	Cutbanks cave	1.00	Droughty	0.01
						Gravel content	0.01

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
81C:							
Varysburg-----------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Frost action	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.10
		Depth to saturated zone	0.10	Slope	0.63	Droughty	0.01
						Gravel content	0.01
81D:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.10
		Depth to saturated zone	0.10	Cutbanks cave	1.00	Droughty	0.01
						Gravel content	0.01
81E:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.10
		Depth to saturated zone	0.10	Cutbanks cave	1.00	Droughty	0.01
						Gravel content	0.01
82F:							
Rock outcrop--------	50	Not rated		Not rated		Not rated	
Manlius-------------	30	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.38
		Depth to hard bedrock	0.15	Dense layer	0.50	Depth to bedrock	0.16
				Cutbanks cave	0.10		
84B:							
Elko----------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.68	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.01
		Frost action	0.50				
84C:							
Elko----------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.68	Depth to saturated zone	1.00	Depth to saturated zone	0.68
		Slope	0.63	Slope	0.63	Slope	0.63
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.01
		Frost action	0.50				
85B:							
Onoville------------	85	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	Cutbanks cave	0.10	Droughty	0.01
		Frost action	0.50				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
85C:							
Onoville------------	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Slope	0.63	Slope	0.63	Slope	0.63
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.01
		Frost action	0.50				
85D:							
Onoville------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.01
		Frost action	0.50				
86B:							
Eldred--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Frost action	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.43				
86C:							
Eldred--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Shrink-swell	0.50	Slope	0.63	Depth to saturated zone	0.43
		Frost action	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.43				
86D:							
Eldred--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.43
		Frost action	0.50	Cutbanks cave	0.10		
		Depth to saturated zone	0.43				
87B:							
Shongo--------------	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		
		Shrink-swell	0.50				
87C:							
Shongo--------------	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	Slope	0.63	Slope	0.63
		Slope	0.63	Cutbanks cave	0.10		
		Shrink-swell	0.50				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
88A:							
Ivory	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Large stones content	0.03
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Shrink-swell	0.50				
88B:							
Ivory	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Large stones content	0.03
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Shrink-swell	0.50				
88C:							
Ivory	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Slope	0.63	Slope	0.63
		Depth to saturated zone	0.99	Too clayey	0.50	Large stones content	0.03
		Slope	0.63	Cutbanks cave	0.10		
		Shrink-swell	0.50				
88D:							
Ivory	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50	Large stones content	0.03
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Shrink-swell	0.50				
89B:							
Portville	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	1.00		
		Shrink-swell	0.50				
89C:							
Portville	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	1.00	Slope	0.63
		Slope	0.63	Slope	0.63		
		Shrink-swell	0.50				
90A:							
Brinkerton	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				
		Low strength	0.22				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
90B:							
Brinkerton----------	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				
		Low strength	0.22				
91A:							
Palms---------------	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	Organic matter content	1.00
		Subsidence	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Organic matter content	1.00		
92:							
Carlisle------------	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	Organic matter content	1.00
		Subsidence	1.00	Organic matter content	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Cutbanks cave	0.10		
93:							
Saprists, inundated-	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	Organic matter content	1.00
		Subsidence	1.00	Cutbanks cave	1.00	Depth to saturated zone	1.00
		Frost action	1.00	Organic matter content	1.00		
94B:							
Frewsburg-----------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Depth to bedrock	0.01
		Depth to hard bedrock	0.01	Cutbanks cave	0.10		
94C:							
Frewsburg-----------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to hard bedrock	1.00	Depth to saturated zone	0.99
		Depth to saturated zone	0.99	Depth to saturated zone	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Depth to bedrock	0.01
		Depth to hard bedrock	0.01	Cutbanks cave	0.10		
95B:							
Mandy---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.06

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
95C:							
Mandy	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard bedrock	1.00	Droughty	0.92
		Frost action	0.50	Slope	0.63	Slope	0.63
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.06
95D:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.06
95E:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.06
95F:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.06
96B:							
Carrollton	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Depth to saturated zone	0.99	Gravel content	0.01
				Cutbanks cave	0.10		
96C:							
Carrollton	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Gravel content	0.01
96D:							
Carrollton	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Gravel content	0.01

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
96E:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Gravel content	0.01
96F:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.46
		Depth to hard bedrock	0.46	Cutbanks cave	0.10	Gravel content	0.01
97B:							
Kinzua--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to saturated zone	0.15	Gravel content	0.01
				Cutbanks cave	0.10		
97C:							
Kinzua--------------	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Slope	0.63	Slope	0.63
		Frost action	0.50	Depth to saturated zone	0.15	Gravel content	0.01
				Cutbanks cave	0.10		
97D:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
97E:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
97F:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
98D:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
98E:							
Kinzua--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.01
99B:							
Buchanan------------	85	Somewhat limited		Very limited		Somewhat limited	
		Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.35
		Frost action	0.50	Cutbanks cave	1.00		
		Depth to saturated zone	0.35				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
99C:							
Buchanan	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Shrink-swell	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.35
		Frost action	0.50	Slope	0.63		
		Depth to saturated zone	0.35				
99D:							
Buchanan	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.35
		Frost action	0.50	Cutbanks cave	1.00		
		Depth to saturated zone	0.35				
100:							
Udorthents	85	Not rated		Not rated		Not rated	
101:							
Udorthents, refuse substratum	90	Not rated		Not rated		Not rated	
102C:							
Mandy	40	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
		Slope	0.04	Slope	0.04	Gravel content	0.06
						Slope	0.04
Rock outcrop	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek	40	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Slope	0.04
		Slope	0.04	Slope	0.04	Droughty	0.02
				Depth to hard bedrock	0.01		
Rock outcrop	35	Not rated		Not rated		Not rated	
104B:							
Flatiron	80	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.02
104C:							
Flatiron	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Cutbanks cave	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Droughty	0.02
104D:							
Flatiron	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.02

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
104E:							
Flatiron	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	1.00	Droughty	0.02
108D:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
				Depth to hard bedrock	0.01	Large stones content	0.01
108E:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
				Depth to hard bedrock	0.01	Large stones content	0.01
108F:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Droughty	0.10
				Depth to hard bedrock	0.01	Large stones content	0.01
131:							
Lamson	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		
132B:							
Wiscoy	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	Dense layer	0.50	Droughty	1.00
				Cutbanks cave	0.10		
132C:							
Wiscoy	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	Slope	0.63	Droughty	1.00
		Slope	0.63	Dense layer	0.50	Slope	0.63
				Cutbanks cave	0.10		
135C:							
Hudson	85	Very limited		Very limited		Somewhat limited	
		Low strength	1.00	Depth to saturated zone	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.50		
		Frost action	0.50				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
135D:							
Hudson	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.50		
		Frost action	0.50				
135E:							
Hudson	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Low strength	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.56
		Depth to saturated zone	0.56	Too clayey	0.50		
		Shrink-swell	0.50	Cutbanks cave	0.50		
		Frost action	0.50				
140D:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Cutbanks cave	0.50		
		Low strength	0.22				
140E:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Cutbanks cave	0.50		
		Low strength	0.22				
185C:							
Onoville	85	Somewhat limited		Very limited		Somewhat limited	
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Slope	0.63	Slope	0.63	Slope	0.63
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.01
		Frost action	0.50				
185D:							
Onoville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to saturated zone	0.88	Depth to saturated zone	1.00	Depth to saturated zone	0.88
		Shrink-swell	0.50	Cutbanks cave	0.10	Droughty	0.01
		Frost action	0.50				
187B:							
Shongo	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		
		Shrink-swell	0.50				
187C:							
Shongo	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	Slope	0.63	Slope	0.63
		Slope	0.63	Cutbanks cave	0.10		
		Shrink-swell	0.50				

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
188B:							
Cavode	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50		
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Shrink-swell	0.50				
188C:							
Cavode	85	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Slope	0.63	Slope	0.63
		Depth to saturated zone	0.99	Too clayey	0.50		
		Slope	0.63	Cutbanks cave	0.10		
		Shrink-swell	0.50				
188D:							
Cavode	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Low strength	1.00	Too clayey	0.50		
		Depth to saturated zone	0.99	Cutbanks cave	0.10		
		Shrink-swell	0.50				
189B:							
Portville	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	1.00		
		Shrink-swell	0.50				
189C:							
Portville	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	1.00	Slope	0.63
		Slope	0.63	Slope	0.63		
		Shrink-swell	0.50				
195C:							
Mandy	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
		Slope	0.04	Slope	0.04	Slope	0.04
						Gravel content	0.04
						Large stones content	0.01

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
195D:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.04
						Large stones content	0.01
195E:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Droughty	0.92
		Depth to hard bedrock	0.20	Cutbanks cave	0.10	Depth to bedrock	0.20
						Gravel content	0.04
						Large stones content	0.01
199C:							
Buchanan	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to saturated zone	1.00	Slope	0.63
		Shrink-swell	0.50	Cutbanks cave	1.00	Depth to saturated zone	0.35
		Frost action	0.50	Slope	0.63		
		Depth to saturated zone	0.35				
199D:							
Buchanan	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Depth to saturated zone	1.00	Depth to saturated zone	0.35
		Frost action	0.50	Cutbanks cave	1.00		
		Depth to saturated zone	0.35				
289B:							
Ceres	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	0.88	Gravel content	0.07
				Cutbanks cave	0.10		
289C:							
Ceres	85	Somewhat limited		Somewhat limited		Somewhat limited	
		Slope	0.63	Depth to hard bedrock	0.88	Slope	0.63
		Frost action	0.50	Slope	0.63	Gravel content	0.07
				Cutbanks cave	0.10		
289D:							
Ceres	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to hard bedrock	0.88	Gravel content	0.07
				Cutbanks cave	0.10		

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
289E:							
Ceres----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to hard bedrock	0.88	Gravel content	0.07
				Cutbanks cave	0.10		
289F:							
Ceres----------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Depth to hard bedrock	0.88	Gravel content	0.07
				Cutbanks cave	0.10		
400:							
Wakeville------------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Depth to saturated zone	0.99	Flooding	0.60		
496B:							
Gilpin---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Frost action	0.50	Depth to hard bedrock	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Depth to saturated zone	0.99	Gravel content	0.01
				Cutbanks cave	0.10		
496C:							
Gilpin---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.63	Depth to hard bedrock	1.00	Slope	0.63
		Frost action	0.50	Slope	0.63	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Gravel content	0.01
496D:							
Gilpin---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Gravel content	0.01
496E:							
Gilpin---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Gravel content	0.01
496F:							
Gilpin---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00	Slope	1.00
		Frost action	0.50	Slope	1.00	Depth to bedrock	0.10
		Depth to hard bedrock	0.10	Cutbanks cave	0.10	Gravel content	0.01

Table 17.—Roads and Streets, Shallow Excavations, and Lawns and Landscaping—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
497D:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.08
497E:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.08
497F:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.08
498E:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Frost action	0.50	Cutbanks cave	0.10	Gravel content	0.08
800:							
Holderton-----------	80	Very limited		Very limited		Very limited	
		Frost action	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.99
		Flooding	1.00	Cutbanks cave	1.00	Flooding	0.60
		Depth to saturated zone	0.99	Flooding	0.60		
PG:							
Pits, gravel--------	85	Not rated		Not rated		Not rated	
Ur:							
Urban land----------	85	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 18.—Sewage Disposal

(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	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
1:					
Udifluvents---------	40	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00	Depth to saturated zone	0.71
		Depth to saturated zone	0.33		
Fluvaquents---------	35	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00		
2:					
Hamlin--------------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	0.31	Seepage	0.50
		Depth to saturated zone	0.17	Depth to saturated zone	0.17
3:					
Tioga---------------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	0.90	Seepage	1.00
		Depth to saturated zone	0.17	Depth to saturated zone	0.17
4:					
Teel----------------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.99
5:					
Wayland-------------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
6A:					
Wyalusing-----------	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	0.90	Depth to saturated zone	1.00
		Restricted permeability	0.31		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
7A:					
Philo	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	1.00
8:					
Middlebury	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	0.90	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Seepage	1.00
		Restricted permeability	0.31		
9:					
Pawling	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Seepage	0.90	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Seepage	1.00
		Restricted permeability	0.31		
10:					
Atkins	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.57	Seepage	1.00
11B:					
Ischua	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Slope	0.92
				Seepage	0.50
11C:					
Ischua	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.68	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
11D:					
Ischua	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	0.80	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Seepage	0.50
11E:					
Ischua	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	0.80	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Seepage	0.50
11F:					
Ischua	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	0.80	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Seepage	0.50
12B:					
Franklinville	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.49	Slope	0.92
		Depth to saturated zone	0.17	Seepage	0.50
				Depth to saturated zone	0.17
12C:					
Franklinville	85	Somewhat limited		Very limited	
		Restricted permeability	0.49	Slope	1.00
		Slope	0.20	Seepage	0.50
		Depth to saturated zone	0.17	Depth to saturated zone	0.17
12D:					
Franklinville	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.49	Seepage	0.50
12E:					
Franklinville	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.49	Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
14B:					
Hornellsville-------	85	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.75	Slope	0.92
14C:					
Hornellsville-------	85	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Slope	0.20		
15B:					
Willdin-------------	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.89	Depth to saturated zone	0.99
		Depth to dense material	0.85	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
15C:					
Willdin-------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.85	Depth to saturated zone	0.99
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
15D:					
Willdin-------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.89	Depth to saturated zone	0.99
		Depth to dense material	0.85	Seepage	0.50
		Restricted permeability	0.31		
16A:					
Almond--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
16B:					
Almond--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Slope	0.92
				Seepage	0.27

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
16C:					
Almond	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.49	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.27
17B:					
Salamanca	80	Somewhat limited		Very limited	
		Restricted permeability	0.84	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Slope	0.68
				Seepage	0.50
17C:					
Salamanca	80	Somewhat limited		Very limited	
		Restricted permeability	0.84	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.50
17D:					
Salamanca	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.84	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Seepage	0.50
17E:					
Salamanca	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.84	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Seepage	0.50
18A:					
Pope	85	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
				Seepage	1.00
19A:					
Olean	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.49		
19B:					
Olean	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.49	Slope	0.32

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
20A:					
Unadilla------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Restricted permeability	0.31		
20B:					
Unadilla------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Restricted permeability	0.31	Slope	0.32
20C:					
Unadilla------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Slope	1.00
		Restricted permeability	0.31	Seepage	1.00
		Slope	0.20		
20D:					
Unadilla------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.90	Seepage	1.00
		Restricted permeability	0.31		
22A:					
Allard--------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Restricted permeability	0.31		
22B:					
Allard--------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Restricted permeability	0.31	Slope	0.32
25A:					
Chenango------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
25B:					
Chenango------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
				Slope	0.92
25C:					
Chenango------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Slope	1.00
		Slope	0.20	Seepage	1.00
25D:					
Chenango------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.90	Seepage	1.00
25E:					
Chenango------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.90	Seepage	1.00

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
25F:					
Chenango------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.90	Seepage	1.00
26A:					
Chenango, fan-------	80	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Flooding	0.40	Flooding	0.40
		Depth to saturated zone	0.17	Depth to saturated zone	0.17
26B:					
Chenango, fan-------	80	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Flooding	0.40	Slope	0.92
		Depth to saturated zone	0.17	Flooding	0.40
				Depth to saturated zone	0.17
27A:					
Castile-------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
27B:					
Castile-------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
				Slope	0.92
28A:					
Scio----------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Seepage	1.00
		Restricted permeability	0.31		
29A:					
Chenango------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
29B:					
Chenango------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Seepage	1.00
				Slope	0.92
29C:					
Chenango------------	85	Somewhat limited		Very limited	
		Seepage	0.90	Slope	1.00
		Slope	0.20	Seepage	1.00
29D:					
Chenango------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.90	Seepage	1.00

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
29E:					
Chenango	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Seepage	0.90	Seepage	1.00
31B:					
Collamer	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.33	Seepage	0.50
				Slope	0.32
31C:					
Collamer	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Slope	1.00
		Restricted permeability	0.33	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.50
32A:					
Churchville	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.89	Seepage	0.50
32B:					
Churchville	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.89	Seepage	0.50
				Slope	0.32
33A:					
Wallington	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Seepage	0.50
		Restricted permeability	0.31		
34:					
Getzville	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	1.00
35A:					
Rhinebeck	80	Very limited		Very limited	
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
35B:					
Rhinebeck-----------	80	Very limited		Very limited	
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.32
35C:					
Rhinebeck-----------	80	Very limited		Very limited	
		Restricted permeability	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.20		
36:					
Canadice------------	75	Very limited		Very limited	
		Restricted permeability	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
37A:					
Tonawanda-----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
37B:					
Tonawanda-----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Slope	0.32
				Seepage	0.27
38A:					
Niagara-------------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.94		
38B:					
Niagara-------------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.94	Slope	0.32
39A:					
Halsey--------------	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Seepage	1.00
		Seepage	0.90	Depth to saturated zone	1.00

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
40A:					
Williamson----------	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.89	Depth to saturated zone	0.98
		Depth to dense material	0.88	Seepage	0.50
		Restricted permeability	0.31		
40B:					
Williamson----------	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.89	Depth to saturated zone	0.98
		Depth to dense material	0.88	Seepage	0.50
		Restricted permeability	0.31	Slope	0.32
40C:					
Williamson----------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.88	Depth to saturated zone	0.98
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
41A:					
Barcelona-----------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98	Depth to soft bedrock	0.77
		Depth to bedrock	0.11	Seepage	0.27
41B:					
Barcelona-----------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98	Depth to soft bedrock	0.77
		Depth to bedrock	0.11	Slope	0.32
				Seepage	0.27
42A:					
Elnora--------------	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	0.80		
42B:					
Elnora--------------	80	Very limited		Very limited	
		Filtering capacity	1.00	Seepage	1.00
		Seepage	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Slope	0.92

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
43:					
Canandaigua, silt loam	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98		
44:					
Canandaigua, mucky silt loam	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98	Organic matter content	1.00
45:					
Canandaigua, acid substratum	80	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98		
46:					
Swormville	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.99	Seepage	1.00
47A:					
Minoa	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	1.00
48A:					
Colonie	80	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00		
48B:					
Colonie	80	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00	Slope	0.92
48C:					
Colonie	80	Very limited		Very limited	
		Seepage	1.00	Slope	1.00
		Filtering capacity	1.00	Seepage	1.00
		Slope	0.20		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
49A:					
Red Hook	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	1.00
50A:					
Canaseraga	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Depth to saturated zone	0.99
		Depth to dense material	0.80	Seepage	0.50
		Restricted permeability	0.31		
50B:					
Canaseraga	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Depth to saturated zone	0.99
		Depth to dense material	0.80	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
50C:					
Canaseraga	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.80	Depth to saturated zone	0.99
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
51B:					
Chadakoin	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.49	Slope	0.92
		Depth to saturated zone	0.33	Depth to saturated zone	0.71
				Seepage	0.50
51C:					
Chadakoin	85	Somewhat limited		Very limited	
		Restricted permeability	0.49	Slope	1.00
		Depth to saturated zone	0.33	Depth to saturated zone	0.71
		Slope	0.20	Seepage	0.50
51D:					
Chadakoin	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.49	Seepage	0.50
51E:					
Chadakoin	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.49	Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
51F:					
Chadakoin-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.49	Seepage	0.50
52B:					
Valois--------------	85	Somewhat limited		Very limited	
		Restricted permeability	0.31	Seepage	1.00
				Slope	0.92
52C:					
Valois--------------	85	Somewhat limited		Very limited	
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	1.00
52D:					
Valois--------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	1.00
52E:					
Valois--------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	1.00
52F:					
Valois--------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	1.00
53C:					
Valois--------------	30	Somewhat limited		Very limited	
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	1.00
Volusia-------------	25	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
Mardin--------------	20	Somewhat limited		Very limited	
		Depth to saturated zone	0.90	Depth to saturated zone	1.00
		Depth to dense material	0.89	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
55A:					
Darien	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.87	Seepage	0.50
55B:					
Darien	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.87	Slope	0.68
				Seepage	0.50
55C:					
Darien	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.87	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.50
56B:					
Chautauqua	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.31	Slope	0.92
				Seepage	0.50
56C:					
Chautauqua	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Slope	1.00
		Restricted permeability	0.31	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.50
56D:					
Chautauqua	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.50
57A:					
Busti	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
57B:					
Busti	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Slope	0.92
				Seepage	0.27

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
57C:					
Busti	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.49	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.27
58B:					
Rushford	80	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.90	Depth to saturated zone	0.95
		Depth to dense material	0.89	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
58C:					
Rushford	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.90	Slope	1.00
		Depth to dense material	0.89	Depth to saturated zone	0.95
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
59B:					
Yorkshire	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Depth to saturated zone	1.00
		Depth to dense material	0.85	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
59C:					
Yorkshire	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.85	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
59D:					
Yorkshire	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.89	Depth to saturated zone	1.00
		Depth to dense material	0.85	Seepage	0.50
		Restricted permeability	0.31		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
60A:					
Napoli	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Seepage	0.27
		Restricted permeability	0.49		
60B:					
Napoli	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Slope	0.68
		Restricted permeability	0.49	Seepage	0.27
60C:					
Napoli	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to dense material	0.95	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
		Slope	0.20		
60D:					
Napoli	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Seepage	0.27
		Restricted permeability	0.49		
61B:					
Schuyler	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.49	Slope	0.68
				Seepage	0.27
61C:					
Schuyler	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Slope	1.00
		Restricted permeability	0.49	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.27
61D:					
Schuyler	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
61E:					
Schuyler------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
61F:					
Schuyler------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
62B:					
Mardin--------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.90	Depth to saturated zone	1.00
		Depth to dense material	0.89	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
62C:					
Mardin--------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.90	Slope	1.00
		Depth to dense material	0.89	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
62D:					
Mardin--------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.90	Depth to saturated zone	1.00
		Depth to dense material	0.89	Seepage	0.50
		Restricted permeability	0.31		
63B:					
Langford------------	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.89	Depth to saturated zone	0.94
		Depth to dense material	0.88	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
63C:					
Langford------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.88	Depth to saturated zone	0.94
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
63D:					
Langford	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.89	Depth to saturated zone	0.94
		Depth to dense material	0.88	Seepage	0.50
		Restricted permeability	0.31		
64C:					
Mardin	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.90	Slope	1.00
		Depth to dense material	0.89	Depth to saturated zone	1.00
		Surface rock fragments	0.60	Seepage	0.50
		Restricted permeability	0.31		
		Slope	0.20		
66B:					
Volusia	80	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.92
		Surface rock fragments	0.60	Seepage	0.50
		Restricted permeability	0.31		
67A:					
Dalton	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Seepage	0.50
		Restricted permeability	0.31		
67B:					
Dalton	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
68A:					
Volusia	80	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.50
		Restricted permeability	0.31		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
68B:					
Volusia	80	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
68C:					
Volusia	80	Very limited		Very limited	
		Depth to dense material	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
69A:					
Erie	80	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.50
		Restricted permeability	0.31		
69B:					
Erie	80	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
69C:					
Erie	80	Very limited		Very limited	
		Depth to dense material	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
71E:					
Mongaup	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Surface rock fragments	0.60	Seepage	0.50
		Restricted permeability	0.31		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
71F:					
Mongaup	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Surface rock fragments	0.60	Seepage	0.50
		Restricted permeability	0.31		
72B:					
Towerville	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Slope	0.68
				Seepage	0.50
72C:					
Towerville	80	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.68	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.50
72D:					
Towerville	80	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	0.80	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Seepage	0.50
72E:					
Towerville	80	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	0.80	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Seepage	0.50
72F:					
Towerville	80	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to saturated zone	0.80	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.68	Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
73B:					
Gretor--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.98	Depth to saturated zone	1.00
		Depth to bedrock	0.75	Slope	0.92
73C:					
Gretor--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.98	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Slope	0.20		
74:					
Ashville------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.99		
75:					
Alden---------------	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.99	Organic matter content	1.00
76A:					
Orpark--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.99	Depth to saturated zone	1.00
		Depth to bedrock	0.75		
76B:					
Orpark--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.99	Depth to saturated zone	1.00
		Depth to bedrock	0.75	Slope	0.68
76C:					
Orpark--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Restricted permeability	0.99	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Slope	0.20		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
77A:					
Chippewa	80	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Seepage	0.50
		Restricted permeability	0.31		
78A:					
Hornell	80	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.75		
78B:					
Hornell	80	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.75	Slope	0.92
78C:					
Hornell	80	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Slope	0.20		
78D:					
Hornell	80	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.75		
78F:					
Hornell	40	Very limited		Very limited	
		Restricted permeability	1.00	Depth to soft bedrock	1.00
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Depth to bedrock	0.75		
Hudson	35	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.85	Depth to saturated zone	1.00
		Restricted permeability	0.85	Seepage	0.21

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
79B:					
Mongaup-------------	85	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Restricted permeability	0.31	Slope	0.92
				Seepage	0.50
79C:					
Mongaup-------------	85	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	0.50
79D:					
Mongaup-------------	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
79E:					
Mongaup-------------	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
79F:					
Mongaup-------------	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
80A:					
Fremont-------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
80B:					
Fremont-------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.49	Slope	0.92
				Seepage	0.27
80C:					
Fremont-------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.49	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.27

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
81B:					
Varysburg-----------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.21	Seepage	1.00
				Slope	0.92
81C:					
Varysburg-----------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Slope	1.00
		Restricted permeability	0.21	Depth to saturated zone	1.00
		Slope	0.20	Seepage	1.00
81D:					
Varysburg-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.21	Seepage	1.00
81E:					
Varysburg-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Restricted permeability	0.21	Seepage	1.00
82F:					
Rock outcrop--------	50	Not rated		Not rated	
Manlius-------------	30	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
				Seepage	1.00
84B:					
Elko----------------	85	Somewhat limited		Somewhat limited	
		Depth to saturated zone	0.89	Depth to saturated zone	0.99
		Depth to dense material	0.80	Slope	0.92
		Restricted permeability	0.31	Seepage	0.50
84C:					
Elko----------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.80	Depth to saturated zone	0.99
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
85B:					
Onoville------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Depth to saturated zone	1.00
		Depth to dense material	0.85	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
85C:					
Onoville------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.85	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
85D:					
Onoville------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.89	Depth to saturated zone	1.00
		Depth to dense material	0.85	Seepage	0.50
		Restricted permeability	0.31		
86B:					
Eldred--------------	85	Somewhat limited		Very limited	
		Restricted permeability	0.89	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Slope	0.92
				Seepage	0.50
86C:					
Eldred--------------	85	Somewhat limited		Very limited	
		Restricted permeability	0.89	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.50
86D:					
Eldred--------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.89	Depth to saturated zone	1.00
		Depth to saturated zone	0.80	Seepage	0.50
87B:					
Shongo--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.85	Slope	1.00
		Restricted permeability	0.49	Seepage	0.27

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
87C:					
Shongo	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to dense material	0.85	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
		Slope	0.20		
88A:					
Ivory	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98		
88B:					
Ivory	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98	Slope	0.92
88C:					
Ivory	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.98	Depth to saturated zone	1.00
		Slope	0.20		
88D:					
Ivory	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.98		
89B:					
Portville	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Slope	1.00
		Restricted permeability	0.49	Seepage	0.27
89C:					
Portville	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to dense material	0.95	Depth to saturated zone	1.00
		Restricted permeability	0.49	Seepage	0.27
		Slope	0.20		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
90A:					
Brinkerton----------	85	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00		
		Restricted permeability	0.98		
90B:					
Brinkerton----------	85	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.92
		Restricted permeability	0.98		
91A:					
Palms---------------	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.11	Seepage	1.00
				Organic matter content	1.00
92:					
Carlisle------------	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Organic matter content	1.00
				Depth to saturated zone	1.00
				Seepage	1.00
93:					
Saprists, inundated-	85	Very limited		Very limited	
		Ponding	1.00	Ponding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.07	Seepage	1.00
				Organic matter content	1.00
94B:					
Frewsburg-----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Depth to saturated zone	1.00
		Restricted permeability	0.49	Slope	0.68
				Seepage	0.27

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
94C:					
Frewsburg-----------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.49	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.27
95B:					
Mandy---------------	85	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Restricted permeability	0.31	Slope	0.92
				Seepage	0.50
95C:					
Mandy---------------	85	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	0.50
95D:					
Mandy---------------	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
95E:					
Mandy---------------	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
95F:					
Mandy---------------	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
96B:					
Carrollton----------	80	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Depth to saturated zone	0.33	Depth to saturated zone	1.00
		Restricted permeability	0.31	Slope	0.92
				Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
96C:					
Carrollton----------	80	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	0.50
96D:					
Carrollton----------	80	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
96E:					
Carrollton----------	80	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
96F:					
Carrollton----------	80	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
97B:					
Kinzua--------------	85	Somewhat limited		Somewhat limited	
		Restricted permeability	0.31	Slope	0.92
				Seepage	0.50
97C:					
Kinzua--------------	85	Somewhat limited		Very limited	
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	0.50
97D:					
Kinzua--------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
97E:					
Kinzua--------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
97F:					
Kinzua--------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
98D:					
Kinzua	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Surface rock fragments	0.40	Seepage	0.50
		Restricted permeability	0.31		
98E:					
Kinzua	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Surface rock fragments	0.40	Seepage	0.50
		Restricted permeability	0.31		
99B:					
Buchanan	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Slope	1.00
		Depth to dense material	0.75	Depth to saturated zone	0.88
		Restricted permeability	0.31	Seepage	0.50
99C:					
Buchanan	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Slope	1.00
		Depth to dense material	0.75	Depth to saturated zone	0.88
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
99D:					
Buchanan	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	0.88
		Depth to dense material	0.75	Seepage	0.50
		Restricted permeability	0.31		
100:					
Udorthents	85	Not rated		Not rated	
101:					
Udorthents, refuse substratum	90	Not rated		Not rated	
102C:					
Mandy	40	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	0.50
Rock outcrop	35	Not rated		Not rated	

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
103C:					
Knapp Creek---------	40	Very limited		Very limited	
		Seepage	1.00	Seepage	1.00
		Filtering capacity	1.00	Slope	1.00
		Slope	0.20	Depth to hard bedrock	0.01
		Depth to bedrock	0.11		
Rock outcrop--------	35	Not rated		Not rated	
104B:					
Flatiron------------	80	Somewhat limited		Very limited	
		Surface rock fragments	0.40	Seepage	1.00
				Slope	0.92
104C:					
Flatiron------------	80	Somewhat limited		Very limited	
		Surface rock fragments	0.40	Slope	1.00
		Slope	0.20	Seepage	1.00
104D:					
Flatiron------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Surface rock fragments	0.40	Seepage	1.00
104E:					
Flatiron------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Surface rock fragments	0.40	Seepage	1.00
108D:					
Hartleton-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.11	Seepage	1.00
				Depth to hard bedrock	0.01
108E:					
Hartleton-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.11	Seepage	1.00
				Depth to hard bedrock	0.01
108F:					
Hartleton-----------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.11	Seepage	1.00
				Depth to hard bedrock	0.01
131:					
Lamson--------------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Seepage	1.00

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
132B:					
Wiscoy	80	Very limited		Very limited	
		Depth to dense material	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Slope	0.92
		Restricted permeability	0.31		
132C:					
Wiscoy	80	Very limited		Very limited	
		Depth to dense material	1.00	Slope	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.31		
		Slope	0.20		
135C:					
Hudson	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.85	Slope	1.00
		Restricted permeability	0.85	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.21
135D:					
Hudson	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.85	Depth to saturated zone	1.00
		Restricted permeability	0.85	Seepage	0.21
135E:					
Hudson	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.85	Depth to saturated zone	1.00
		Restricted permeability	0.85	Seepage	0.21
140D:					
Dunkirk	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.87	Seepage	0.50
140E:					
Dunkirk	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.87	Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
185C:					
Onoville------------	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.89	Slope	1.00
		Depth to dense material	0.85	Depth to saturated zone	1.00
		Surface rock fragments	0.80	Seepage	0.50
		Restricted permeability	0.31		
		Slope	0.20		
185D:					
Onoville------------	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.89	Depth to saturated zone	1.00
		Depth to dense material	0.85	Seepage	0.50
		Surface rock fragments	0.80		
		Restricted permeability	0.31		
187B:					
Shongo--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.85	Slope	1.00
		Surface rock fragments	0.80	Seepage	0.27
		Restricted permeability	0.49		
187C:					
Shongo--------------	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to dense material	0.85	Depth to saturated zone	1.00
		Surface rock fragments	0.80	Seepage	0.27
		Restricted permeability	0.49		
		Slope	0.20		
188B:					
Cavode--------------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.89	Slope	0.92
				Seepage	0.27
188C:					
Cavode--------------	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Restricted permeability	0.89	Depth to saturated zone	1.00
		Slope	0.20	Seepage	0.27

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
188D:					
Cavode	85	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.89	Seepage	0.27
189B:					
Portville	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to dense material	0.95	Slope	1.00
		Surface rock fragments	0.80	Seepage	0.27
		Restricted permeability	0.49		
189C:					
Portville	80	Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00
		Depth to dense material	0.95	Depth to saturated zone	1.00
		Surface rock fragments	0.80	Seepage	0.27
		Restricted permeability	0.49		
		Slope	0.20		
195C:					
Mandy	85	Somewhat limited		Very limited	
		Surface rock fragments	0.80	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
		Slope	0.20		
195D:					
Mandy	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Surface rock fragments	0.80	Slope	1.00
		Depth to bedrock	0.75	Seepage	0.50
		Restricted permeability	0.31		
195E:					
Mandy	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Surface rock fragments	0.80	Slope	1.00
		Depth to bedrock	0.75	Seepage	0.50
		Restricted permeability	0.31		

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
199C:					
Buchanan	85	Somewhat limited		Very limited	
		Depth to saturated zone	0.80	Slope	1.00
		Surface rock fragments	0.80	Depth to saturated zone	0.88
		Depth to dense material	0.75	Seepage	0.50
		Restricted permeability	0.31		
		Slope	0.20		
199D:					
Buchanan	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to saturated zone	0.80	Depth to saturated zone	0.88
		Surface rock fragments	0.80	Seepage	0.50
		Depth to dense material	0.75		
		Restricted permeability	0.31		
289B:					
Ceres	85	Somewhat limited		Very limited	
		Depth to bedrock	0.11	Seepage	1.00
				Slope	0.92
				Depth to hard bedrock	0.88
289C:					
Ceres	85	Somewhat limited		Very limited	
		Slope	0.20	Slope	1.00
		Depth to bedrock	0.11	Seepage	1.00
				Depth to hard bedrock	0.88
289D:					
Ceres	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.11	Seepage	1.00
				Depth to hard bedrock	0.88
289E:					
Ceres	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.11	Seepage	1.00
				Depth to hard bedrock	0.88
289F:					
Ceres	85	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Depth to bedrock	0.11	Seepage	1.00
				Depth to hard bedrock	0.88

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields: Rating class and limiting features	Value	Sewage lagoons: Rating class and limiting features	Value
400:					
Wakeville	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	0.50
496B:					
Gilpin	85	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Depth to saturated zone	0.33	Depth to saturated zone	1.00
		Restricted permeability	0.31	Slope	0.92
				Seepage	0.50
496C:					
Gilpin	85	Somewhat limited		Very limited	
		Depth to bedrock	0.75	Depth to hard bedrock	1.00
		Restricted permeability	0.31	Slope	1.00
		Slope	0.20	Seepage	0.50
496D:					
Gilpin	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
496E:					
Gilpin	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
496F:					
Gilpin	85	Very limited		Very limited	
		Slope	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.75	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
497D:					
Rayne	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
497E:					
Rayne	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50

Table 18.—Sewage Disposal—Continued

Map symbol and soil name	Pct. of map unit	Septic tank absorption fields		Sewage lagoons	
		Rating class and limiting features	Value	Rating class and limiting features	Value
497F:					
Rayne---------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Restricted permeability	0.31	Seepage	0.50
498E:					
Rayne---------------	80	Very limited		Very limited	
		Slope	1.00	Slope	1.00
		Surface rock fragments	0.40	Seepage	0.50
		Restricted permeability	0.31		
800:					
Holderton-----------	80	Very limited		Very limited	
		Flooding	1.00	Flooding	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Restricted permeability	0.31	Seepage	1.00
PG:					
Pits, gravel--------	85	Not rated		Not rated	
Ur:					
Urban land----------	85	Not rated		Not rated	
W:					
Water---------------	100	Not rated		Not rated	

Table 19.—Landfills

(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	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
1:							
Udifluvents	40	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Too sandy	1.00	Seepage	1.00	Gravel content	0.99
		Seepage	1.00				
Fluvaquents	35	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Too sandy	1.00	Seepage	1.00	Seepage	1.00
		Seepage	1.00			Gravel content	0.89
2:							
Hamlin	85	Very limited		Very limited		Not limited	
		Flooding	1.00	Flooding	1.00		
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
3:							
Tioga	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
		Seepage	1.00	Seepage	1.00		
4:							
Teel	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.95
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
5:							
Wayland	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
6A:							
Wyalusing	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.69
		Too sandy	0.50			Too sandy	0.50

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
7A:							
Philo	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	0.95
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.21
		Seepage	1.00	Seepage	1.00		
8:							
Middlebury	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Seepage	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Seepage	1.00	Seepage	1.00		
9:							
Pawling	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Too sandy	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Too sandy	1.00	Seepage	1.00	Depth to saturated zone	0.95
		Seepage	1.00			Gravel content	0.71
10:							
Atkins	85	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.21
		Seepage	1.00	Seepage	1.00		
11B:							
Ischua	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
11C:							
Ischua	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
		Slope	0.63	Slope	0.63	Slope	0.63
11D:							
Ischua	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
11E:							
Ischua	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
11F:							
Ischua	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
12B:							
Franklinville	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.78
12C:							
Franklinville	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.78
		Slope	0.63	Slope	0.63	Slope	0.63
12D:							
Franklinville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.78
12E:							
Franklinville	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.78
14B:							
Hornellsville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
14C:							
Hornellsville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Slope	0.63
15B:							
Willdin	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Gravel content	0.89

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
15C:							
Willdin	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.63	Slope	0.63	Gravel content	0.89
						Slope	0.63
15D:							
Willdin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Gravel content	0.89
16A:							
Almond	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
		Too clayey	0.50			Too clayey	0.50
16B:							
Almond	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
		Too clayey	0.50			Too clayey	0.50
16C:							
Almond	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
17B:							
Salamanca	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
						Gravel content	0.06
17C:							
Salamanca	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.06
17D:							
Salamanca	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
						Gravel content	0.06
17E:							
Salamanca	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
						Gravel content	0.06

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
18A:							
Pope	85	Very limited		Very limited		Somewhat limited	
		Flooding	1.00	Flooding	1.00	Seepage	0.22
		Seepage	1.00	Seepage	1.00		
19A:							
Olean	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Depth to saturated zone	0.95
		Too sandy	0.50			Too sandy	0.50
						Gravel content	0.18
19B:							
Olean	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	1.00
		Seepage	1.00	Seepage	1.00	Depth to saturated zone	0.95
		Too sandy	0.50			Too sandy	0.50
						Gravel content	0.18
20A:							
Unadilla	85	Very limited		Not limited		Not limited	
		Seepage	1.00				
20B:							
Unadilla	85	Very limited		Not limited		Not limited	
		Seepage	1.00				
20C:							
Unadilla	85	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Slope	0.63	Slope	0.63
		Slope	0.63				
20D:							
Unadilla	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00				
22A:							
Allard	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	0.26
22B:							
Allard	85	Very limited		Very limited		Very limited	
		Too sandy	1.00	Seepage	1.00	Too sandy	1.00
		Seepage	1.00			Seepage	1.00
						Gravel content	0.26
25A:							
Chenango	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
25B:							
Chenango	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
25C:							
Chenango	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00	Slope	0.63	Seepage	1.00
		Slope	0.63			Gravel content	1.00
						Slope	0.63
25D:							
Chenango	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
25E:							
Chenango	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
25F:							
Chenango	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	1.00
26A:							
Chenango, fan	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
		Flooding	0.40	Flooding	0.40		
26B:							
Chenango, fan	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	1.00
		Seepage	1.00	Seepage	1.00	Seepage	0.21
		Flooding	0.40	Flooding	0.40		
27A:							
Castile	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Gravel content	1.00
						Depth to saturated zone	0.95

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
27B:							
Castile	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Gravel content	1.00
						Depth to saturated zone	0.95
28A:							
Scio	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Seepage	1.00				
29A:							
Chenango	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	0.50			Gravel content	1.00
						Too sandy	0.50
29B:							
Chenango	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	0.50			Gravel content	1.00
						Too sandy	0.50
29C:							
Chenango	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Slope	0.63	Slope	0.63	Gravel content	1.00
		Too sandy	0.50			Slope	0.63
						Too sandy	0.50
29D:							
Chenango	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	0.50			Gravel content	1.00
						Too sandy	0.50
29E:							
Chenango	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	0.50			Gravel content	1.00
						Too sandy	0.50
31B:							
Collamer	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
						Too clayey	0.50
31C:							
Collamer	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slope	0.63	Slope	0.63	Slope	0.63
						Too clayey	0.50

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
32A:							
Churchville---------	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
						Too clayey	0.50
32B:							
Churchville---------	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
						Too clayey	0.50
33A:							
Wallington----------	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
34:							
Getzville-----------	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
		Too sandy	1.00	Seepage	1.00	Too sandy	1.00
		Seepage	1.00			Seepage	0.50
35A:							
Rhinebeck-----------	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
		Too clayey	0.50			Too clayey	1.00
35B:							
Rhinebeck-----------	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
		Too clayey	0.50			Too clayey	1.00
35C:							
Rhinebeck-----------	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
		Slope	0.63	Slope	0.63	Too clayey	1.00
		Too clayey	0.50			Slope	0.63
36:							
Canadice------------	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
		Too clayey	1.00			Too clayey	1.00
						Hard to compact	1.00
37A:							
Tonawanda-----------	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
37B:							
Tonawanda-----------	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

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
38A:							
Niagara	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
						Too clayey	0.50
38B:							
Niagara	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
						Too clayey	0.50
39A:							
Halsey	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Seepage	1.00	Seepage	1.00	Too sandy	1.00
		Too sandy	1.00			Seepage	1.00
						Gravel content	0.16
40A:							
Williamson	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.98	Depth to saturated zone	0.99
40B:							
Williamson	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.98	Depth to saturated zone	0.99
40C:							
Williamson	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.98	Depth to saturated zone	0.99
		Slope	0.63	Slope	0.63	Slope	0.63
41A:							
Barcelona	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
		Depth to bedrock	1.00	Depth to bedrock	0.77	Depth to bedrock	0.77
		Too clayey	0.50			Too clayey	0.50
41B:							
Barcelona	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
		Depth to bedrock	1.00	Depth to bedrock	0.77	Depth to bedrock	0.77
		Too clayey	0.50			Too clayey	0.50
42A:							
Elnora	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Depth to saturated zone	0.95

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
42B:							
Elnora	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too sandy	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	1.00			Depth to saturated zone	0.95
43:							
Canandaigua, silt loam	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
44:							
Canandaigua, mucky silt loam	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
45:							
Canandaigua, acid substratum	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
46:							
Swormville	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
		Too sandy	1.00	Seepage	1.00	Too sandy	1.00
		Seepage	1.00			Seepage	0.50
47A:							
Minoa	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
		Seepage	1.00	Seepage	1.00	Seepage	0.21
48A:							
Colonie	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	0.50			Too sandy	0.50
48B:							
Colonie	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Too sandy	0.50			Too sandy	0.50
48C:							
Colonie	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Too sandy	0.50			Too sandy	0.50

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
49A:							
Red Hook------------	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
		Seepage	1.00	Seepage	1.00	Gravel content	0.75
						Seepage	0.21
50A:							
Canaseraga----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
50B:							
Canaseraga----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
50C:							
Canaseraga----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.63	Slope	0.63	Slope	0.63
51B:							
Chadakoin-----------	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.25
51C:							
Chadakoin-----------	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Gravel content	0.25
51D:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.25
51E:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.25
51F:							
Chadakoin-----------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.25
52B:							
Valois--------------	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Gravel content	0.24
						Seepage	0.21
52C:							
Valois--------------	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Gravel content	0.24
						Seepage	0.21

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
52D:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.24
						Seepage	0.21
52E:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.24
						Seepage	0.21
52F:							
Valois--------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.24
						Seepage	0.21
53C:							
Valois--------------	30	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Seepage	1.00	Gravel content	0.24
		Slope	0.04	Slope	0.04	Seepage	0.21
						Slope	0.04
Volusia-------------	25	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.04	Slope	0.04	Gravel content	0.33
						Slope	0.04
Mardin--------------	20	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Slope	0.04	Slope	0.04	Slope	0.04
55A:							
Darien--------------	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
						Too clayey	0.50
55B:							
Darien--------------	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
						Too clayey	0.50
55C:							
Darien--------------	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
		Slope	0.63	Slope	0.63	Slope	0.63
						Too clayey	0.50
56B:							
Chautauqua----------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
						Gravel content	0.02

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
56C:							
Chautauqua	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.02
56D:							
Chautauqua	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
						Gravel content	0.02
57A:							
Busti	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
						Gravel content	0.05
57B:							
Busti	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
						Gravel content	0.05
57C:							
Busti	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
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.05
58B:							
Rushford	80	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.95	Depth to saturated zone	0.97
58C:							
Rushford	80	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.95	Depth to saturated zone	0.97
		Slope	0.63	Slope	0.63	Slope	0.63
59B:							
Yorkshire	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
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.13
59C:							
Yorkshire	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.13

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
59D:							
Yorkshire-----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.13
60A:							
Napoli--------------	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
		Too clayey	0.50			Too clayey	0.50
60B:							
Napoli--------------	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
		Too clayey	0.50			Too clayey	0.50
60C:							
Napoli--------------	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
60D:							
Napoli--------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
61B:							
Schuyler------------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Too clayey	0.50				
61C:							
Schuyler------------	80	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50				
61D:							
Schuyler------------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Too clayey	0.50				

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
61E:							
Schuyler	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Too clayey	0.50				
61F:							
Schuyler	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Too clayey	0.50				
62B:							
Mardin	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
62C:							
Mardin	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
		Slope	0.63	Slope	0.63	Slope	0.63
62D:							
Mardin	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
63B:							
Langford	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	0.96
63C:							
Langford	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.94	Depth to saturated zone	0.96
		Slope	0.63	Slope	0.63	Slope	0.63
63D:							
Langford	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.94	Depth to saturated zone	0.96
64C:							
Mardin	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
		Slope	0.63	Slope	0.63	Slope	0.63

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
66B:							
Volusia	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
						Gravel content	0.33
67A:							
Dalton	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
67B:							
Dalton	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
68A:							
Volusia	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
						Gravel content	0.33
68B:							
Volusia	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
						Gravel content	0.33
68C:							
Volusia	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
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.33
69A:							
Erie	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
						Gravel content	0.06
69B:							
Erie	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
						Gravel content	0.06
69C:							
Erie	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
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.06
71E:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.23

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
71F:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.23
72B:							
Towerville	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
72C:							
Towerville	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
		Slope	0.63	Slope	0.63	Slope	0.63
72D:							
Towerville	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
72E:							
Towerville	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
72F:							
Towerville	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.95
73B:							
Gretor	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
						Gravel content	0.45

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
73C:							
Gretor	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.45
74:							
Ashville	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
75:							
Alden	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
76A:							
Orpark	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
76B:							
Orpark	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
76C:							
Orpark	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
77A:							
Chippewa	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
						Gravel content	0.01
78A:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
78B:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
78C:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Slope	0.63
78D:							
Hornell	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
78F:							
Hornell	40	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Depth to bedrock	1.00
		Slope	1.00	Depth to saturated zone	1.00	Slope	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
Hudson	35	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Too clayey	1.00			Hard to compact	1.00
						Depth to saturated zone	0.98
79B:							
Mongaup	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Gravel content	0.24
79C:							
Mongaup	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.24
79D:							
Mongaup	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.24

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
79E:							
Mongaup-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.24
79F:							
Mongaup-------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.24
80A:							
Fremont-------------	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
						Too clayey	0.50
80B:							
Fremont-------------	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
						Too clayey	0.50
80C:							
Fremont-------------	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
		Slope	0.63	Slope	0.63	Slope	0.63
						Too clayey	0.50
81B:							
Varysburg-----------	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Too clayey	1.00	Seepage	1.00	Too clayey	0.50
81C:							
Varysburg-----------	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Too clayey	1.00	Seepage	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Too clayey	0.50
81D:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Too clayey	1.00	Seepage	1.00	Too clayey	0.50
81E:							
Varysburg-----------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.78
		Too clayey	1.00	Seepage	1.00	Too clayey	0.50

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
82F:							
Rock outcrop	50	Not rated		Not rated		Not rated	
Manlius	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Gravel content	0.97
						Seepage	0.21
84B:							
Elko	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
						Gravel content	0.24
84C:							
Elko	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.99	Depth to saturated zone	0.99
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.24
85B:							
Onoville	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
		Too clayey	0.50			Too clayey	0.50
85C:							
Onoville	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
85D:							
Onoville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
86B:							
Eldred	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.04
86C:							
Eldred	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.04

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
86D:							
Eldred	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	0.95
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.04
87B:							
Shongo	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
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.10
87C:							
Shongo	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.10
88A:							
Ivory	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
		Too clayey	1.00			Too clayey	1.00
88B:							
Ivory	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
		Too clayey	1.00			Too clayey	1.00
88C:							
Ivory	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
		Too clayey	1.00	Slope	0.63	Too clayey	1.00
		Slope	0.63			Slope	0.63
88D:							
Ivory	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	1.00			Too clayey	1.00
89B:							
Portville	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
						Gravel content	0.29
89C:							
Portville	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
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.29

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
90A:							
Brinkerton----------	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
90B:							
Brinkerton----------	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
91A:							
Palms---------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Seepage	1.00		
92:							
Carlisle------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Organic matter content	1.00	Seepage	1.00	Organic matter content	1.00
		Seepage	1.00			Seepage	0.15
93:							
Saprists, inundated-	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Ponding	1.00	Ponding	1.00
		Ponding	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
				Seepage	1.00		
94B:							
Frewsburg-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.02
94C:							
Frewsburg-----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.02
95B:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
						Gravel content	0.96

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
95C:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Gravel content	0.96
						Slope	0.63
95D:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.96
95E:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.96
95F:							
Mandy---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.96
96B:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to saturated zone	0.50
						Gravel content	0.12
96C:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.12
96D:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.12
96E:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.12
96F:							
Carrollton----------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.12
97B:							
Kinzua--------------	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Gravel content	0.47

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
97C:							
Kinzua	85	Very limited		Very limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Slope	0.63
		Slope	0.63	Slope	0.63	Gravel content	0.47
97D:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.47
97E:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.47
97F:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.47
98D:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.47
98E:							
Kinzua	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.47
99B:							
Buchanan	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	0.93
						Gravel content	0.34
99C:							
Buchanan	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	0.93
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.34
99D:							
Buchanan	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.88	Depth to saturated zone	0.93
						Gravel content	0.34
100:							
Udorthents	85	Not rated		Not rated		Not rated	
101:							
Udorthents, refuse substratum	90	Not rated		Not rated		Not rated	

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
102C:							
Mandy	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.04	Slope	0.04	Gravel content	0.96
						Slope	0.04
Rock outcrop	35	Not rated		Not rated		Not rated	
103C:							
Knapp Creek	40	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Seepage	1.00	Seepage	1.00
		Seepage	1.00	Slope	0.04	Gravel content	0.72
		Slope	0.04	Depth to bedrock	0.01	Slope	0.04
						Depth to bedrock	0.01
Rock outcrop	35	Not rated		Not rated		Not rated	
104B:							
Flatiron	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
						Gravel content	0.03
104C:							
Flatiron	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Seepage	1.00	Seepage	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.03
104D:							
Flatiron	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
						Gravel content	0.03
104E:							
Flatiron	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Seepage	1.00	Seepage	1.00	Seepage	1.00
						Gravel content	0.03
108D:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Gravel content	0.90
		Seepage	1.00	Depth to bedrock	0.01	Seepage	0.22
						Depth to bedrock	0.01
108E:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Gravel content	0.90
		Seepage	1.00	Depth to bedrock	0.01	Seepage	0.22
						Depth to bedrock	0.01
108F:							
Hartleton	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Gravel content	0.90
		Seepage	1.00	Depth to bedrock	0.01	Seepage	0.22
						Depth to bedrock	0.01

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
131:							
Lamson	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
		Seepage	1.00	Seepage	1.00	Too sandy	0.50
		Too sandy	0.50			Seepage	0.21
132B:							
Wiscoy	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
		Too clayey	0.50				
132C:							
Wiscoy	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50				
135C:							
Hudson	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Too clayey	1.00
		Slope	0.63	Slope	0.63	Hard to compact	1.00
						Depth to saturated zone	0.98
						Slope	0.63
135D:							
Hudson	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Too clayey	1.00
						Hard to compact	1.00
						Depth to saturated zone	0.98
135E:							
Hudson	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Too clayey	1.00
						Hard to compact	1.00
						Depth to saturated zone	0.98
140D:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50
140E:							
Dunkirk	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Too clayey	0.50			Too clayey	0.50

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
185C:							
Onoville	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
185D:							
Onoville	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Too clayey	0.50			Too clayey	0.50
187B:							
Shongo	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
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.10
187C:							
Shongo	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
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Too clayey	0.50
						Gravel content	0.10
188B:							
Cavode	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
		Depth to bedrock	1.00			Too clayey	1.00
		Too clayey	1.00			Gravel content	0.11
188C:							
Cavode	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
		Depth to bedrock	1.00	Slope	0.63	Too clayey	1.00
		Too clayey	1.00			Slope	0.63
		Slope	0.63			Gravel content	0.11
188D:							
Cavode	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	1.00	Depth to saturated zone	1.00
		Depth to bedrock	1.00			Too clayey	1.00
		Too clayey	1.00			Gravel content	0.11
189B:							
Portville	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
						Gravel content	0.29

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill: Rating class and limiting features	Value	Area sanitary landfill: Rating class and limiting features	Value	Daily cover for landfill: Rating class and limiting features	Value
189C:							
Portville	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
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.29
195C:							
Mandy	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.04	Slope	0.04	Gravel content	0.96
						Slope	0.04
195D:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.96
195E:							
Mandy	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
						Gravel content	0.96
199C:							
Buchanan	85	Very limited		Somewhat limited		Somewhat limited	
		Depth to saturated zone	1.00	Depth to saturated zone	0.88	Depth to saturated zone	0.93
		Slope	0.63	Slope	0.63	Slope	0.63
						Gravel content	0.34
199D:							
Buchanan	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Slope	1.00	Slope	1.00
		Slope	1.00	Depth to saturated zone	0.88	Depth to saturated zone	0.93
						Gravel content	0.34
289B:							
Ceres	85	Very limited		Very limited		Somewhat limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.88
		Seepage	1.00	Depth to bedrock	0.88	Gravel content	0.85
						Seepage	0.22
289C:							
Ceres	85	Very limited		Very limited		Somewhat limited	
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.88
		Seepage	1.00	Depth to bedrock	0.88	Gravel content	0.85
		Slope	0.63	Slope	0.63	Slope	0.63
						Seepage	0.22
289D:							
Ceres	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.88
		Seepage	1.00	Depth to bedrock	0.88	Gravel content	0.85
						Seepage	0.22

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
289E:							
Ceres---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.88
		Seepage	1.00	Depth to bedrock	0.88	Gravel content	0.85
						Seepage	0.22
289F:							
Ceres---------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to bedrock	1.00	Seepage	1.00	Depth to bedrock	0.88
		Seepage	1.00	Depth to bedrock	0.88	Gravel content	0.85
						Seepage	0.22
400:							
Wakeville-----------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00		
496B:							
Gilpin--------------	85	Very limited		Very limited		Very limited	
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Gravel content	0.61
		Too clayey	0.50			Depth to saturated zone	0.50
						Too clayey	0.50
496C:							
Gilpin--------------	85	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to bedrock	1.00	Depth to bedrock	1.00
		Slope	0.63	Slope	0.63	Slope	0.63
		Too clayey	0.50			Gravel content	0.61
						Too clayey	0.50
496D:							
Gilpin--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Gravel content	0.61
						Too clayey	0.50
496E:							
Gilpin--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Gravel content	0.61
						Too clayey	0.50
496F:							
Gilpin--------------	85	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to bedrock	1.00
		Depth to bedrock	1.00	Depth to bedrock	1.00	Slope	1.00
		Too clayey	0.50			Gravel content	0.61
						Too clayey	0.50

Table 19.—Landfills—Continued

Map symbol and soil name	Pct. of map unit	Trench sanitary landfill		Area sanitary landfill		Daily cover for landfill	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
497D:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.05
497E:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.05
497F:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.05
498E:							
Rayne---------------	80	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
						Gravel content	0.05
800:							
Holderton-----------	80	Very limited		Very limited		Very limited	
		Flooding	1.00	Flooding	1.00	Depth to saturated zone	1.00
		Depth to saturated zone	1.00	Depth to saturated zone	1.00	Seepage	0.21
		Seepage	1.00	Seepage	1.00		
PG:							
Pits, gravel--------	85	Not rated		Not rated		Not rated	
Ur:							
Urban land----------	85	Not rated		Not rated		Not rated	
W:							
Water---------------	100	Not rated		Not rated		Not rated	

Table 20.—Ponds and Embankments

(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
1:							
Udifluvents	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Cutbanks cave	1.00
						Depth to saturated zone	0.81
Fluvaquents	35	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.86		
2:							
Hamlin	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Piping	1.00	Depth to saturated zone	0.96
						Slow refill	0.30
						Cutbanks cave	0.10
3:							
Tioga	85	Very limited		Somewhat limited		Somewhat limited	
		Seepage	1.00	Seepage	0.01	Depth to saturated zone	0.96
						Cutbanks cave	0.10
4:							
Teel	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		
5:							
Wayland	85	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	1.00	Slow refill	0.47
				Piping	1.00	Cutbanks cave	0.10
6A:							
Wyalusing	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.07		
7A:							
Philo	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Seepage	0.03		
8:							
Middlebury	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		
				Seepage	0.01		

Table 20.—Ponds and Embankments—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
9:							
Pawling-------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.86		
10:							
Atkins--------------	85	Very limited		Very limited		Somewhat limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		
				Seepage	0.03		
11B:							
Ischua--------------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.91	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Thin layer	0.91	Slow refill	0.30
				Piping	0.88	Cutbanks cave	0.10
11C:							
Ischua--------------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.91	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Thin layer	0.91	Slow refill	0.30
		Slope	0.01	Piping	0.88	Cutbanks cave	0.10
11D:							
Ischua--------------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.91	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Thin layer	0.91	Slow refill	0.30
		Slope	0.12	Piping	0.88	Cutbanks cave	0.10
11E:							
Ischua--------------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.91	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Thin layer	0.91	Slow refill	0.30
		Slope	0.50	Piping	0.88	Cutbanks cave	0.10
11F:							
Ischua--------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.91	Thin layer	0.91	Slow refill	0.30
		Seepage	0.70	Piping	0.88	Cutbanks cave	0.10
12B:							
Franklinville-------	85	Somewhat limited		Not limited		Somewhat limited	
		Seepage	0.70			Depth to saturated zone	0.96
						Slow refill	0.47
						Cutbanks cave	0.10
12C:							
Franklinville-------	85	Somewhat limited		Not limited		Somewhat limited	
		Seepage	0.70			Depth to saturated zone	0.96
		Slope	0.01			Slow refill	0.47
						Cutbanks cave	0.10

Table 20.—Ponds and Embankments—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
12D:							
Franklinville-------	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.12				
12E:							
Franklinville-------	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.50				
14B:							
Hornellsville-------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.05	Depth to saturated zone	1.00	Slow refill	1.00
				Thin layer	0.74	Cutbanks cave	0.10
				Piping	0.01		
14C:							
Hornellsville-------	85	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.05	Depth to saturated zone	1.00	Slow refill	1.00
		Slope	0.01	Thin layer	0.74	Cutbanks cave	0.10
				Piping	0.01		
15B:							
Willdin-------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
15C:							
Willdin-------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01				
15D:							
Willdin-------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.12				
16A:							
Almond--------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
				Piping	0.87	Cutbanks cave	0.10
16B:							
Almond--------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
				Piping	0.87	Cutbanks cave	0.10
16C:							
Almond--------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
		Slope	0.01	Piping	0.87	Cutbanks cave	0.10

Table 20.—Ponds and Embankments—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
17B:							
Salamanca-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.01	Depth to saturated zone	1.00	Slow refill	0.99
				Piping	0.88	Cutbanks cave	0.10
17C:							
Salamanca-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.01	Depth to saturated zone	1.00	Slow refill	0.99
		Slope	0.01	Piping	0.88	Cutbanks cave	0.10
17D:							
Salamanca-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.12	Depth to saturated zone	1.00	Slow refill	0.99
		Seepage	0.01	Piping	0.88	Cutbanks cave	0.10
17E:							
Salamanca-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.50	Depth to saturated zone	1.00	Slow refill	0.99
		Seepage	0.01	Piping	0.88	Cutbanks cave	0.10
18A:							
Pope----------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
19A:							
Olean---------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.12		
19B:							
Olean---------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.12		
20A:							
Unadilla------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.03		
20B:							
Unadilla------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
				Seepage	0.03		
20C:							
Unadilla------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.01	Seepage	0.03		
20D:							
Unadilla------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Depth to water	1.00
		Slope	0.12	Seepage	0.03		

Table 20.—Ponds and Embankments—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
22A:							
Allard	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
22B:							
Allard	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
25A:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
25B:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
25C:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.01				
25D:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.12				
25E:							
Chenango	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.50				
25F:							
Chenango	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.86	Depth to water	1.00
		Slope	0.94				
26A:							
Chenango, fan	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Cutbanks cave	1.00
						Depth to saturated zone	0.96
26B:							
Chenango, fan	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Cutbanks cave	1.00
						Depth to saturated zone	0.96
27A:							
Castile	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.86		
27B:							
Castile	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.86		

Table 20.—Ponds and Embankments—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
28A:							
Scio	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		
29A:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
29B:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
29C:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	0.01				
29D:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	0.12				
29E:							
Chenango	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.12	Depth to water	1.00
		Slope	0.50				
31B:							
Collamer	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	0.50
				Piping	1.00	Slow refill	0.30
31C:							
Collamer	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	0.50
		Slope	0.01	Piping	1.00	Slow refill	0.30
32A:							
Churchville	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	0.38	Slow refill	0.30
32B:							
Churchville	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	0.38	Slow refill	0.30
33A:							
Wallington	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		

Table 20.—Ponds and Embankments—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
34:							
Getzville-----------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.86		
35A:							
Rhinebeck-----------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Piping	0.73	Cutbanks cave	0.50
35B:							
Rhinebeck-----------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Slow refill	1.00
				Piping	0.73	Cutbanks cave	0.50
35C:							
Rhinebeck-----------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Slow refill	1.00
				Piping	0.73	Cutbanks cave	0.50
36:							
Canadice------------	75	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	1.00	Slow refill	0.47
				Hard to pack	0.09	Cutbanks cave	0.10
37A:							
Tonawanda-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Cutbanks cave	0.50
				Piping	1.00	Slow refill	0.47
37B:							
Tonawanda-----------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Cutbanks cave	0.50
				Piping	1.00	Slow refill	0.47
38A:							
Niagara-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Depth to saturated zone	1.00	Slow refill	0.97
				Piping	1.00	Cutbanks cave	0.10
38B:							
Niagara-------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Depth to saturated zone	1.00	Slow refill	0.97
				Piping	1.00	Cutbanks cave	0.10
39A:							
Halsey--------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Seepage	0.86		

Table 20.—Ponds and Embankments—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
40A:							
Williamson----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
40B:							
Williamson----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
40C:							
Williamson----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	1.00		
41A:							
Barcelona-----------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
		Depth to bedrock	0.01	Piping	1.00	Cutbanks cave	0.10
				Thin layer	0.22		
41B:							
Barcelona-----------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
		Depth to bedrock	0.01	Piping	1.00	Cutbanks cave	0.10
				Thin layer	0.22		
42A:							
Elnora--------------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.36		
42B:							
Elnora--------------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.36		
43:							
Canandaigua, silt loam---------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		
44:							
Canandaigua, mucky silt loam----------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		

Table 20.—Ponds and Embankments—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
45:							
Canandaigua, acid substratum---------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Ponding	1.00	Slow refill	0.30
				Depth to saturated zone	1.00	Cutbanks cave	0.10
				Piping	1.00		
46:							
Swormville----------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.86		
47A:							
Minoa---------------	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.01		
48A:							
Colonie-------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
48B:							
Colonie-------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
48C:							
Colonie-------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.36	Depth to water	1.00
		Slope	0.01				
49A:							
Red Hook------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.03		
50A:							
Canaseraga----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
50B:							
Canaseraga----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
50C:							
Canaseraga----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	1.00		

Table 20.—Ponds and Embankments—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
51B:							
Chadakoin-----------	85	Somewhat limited		Not limited		Somewhat limited	
		Seepage	0.70			Depth to saturated zone	0.81
						Slow refill	0.47
						Cutbanks cave	0.10
51C:							
Chadakoin-----------	85	Somewhat limited		Not limited		Somewhat limited	
		Seepage	0.70			Depth to saturated zone	0.81
		Slope	0.01			Slow refill	0.47
						Cutbanks cave	0.10
51D:							
Chadakoin-----------	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.12				
51E:							
Chadakoin-----------	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.50				
51F:							
Chadakoin-----------	85	Somewhat limited		Not limited		Very limited	
		Slope	0.94			Depth to water	1.00
		Seepage	0.70				
52B:							
Valois--------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
52C:							
Valois--------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
		Slope	0.01				
52D:							
Valois--------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
		Slope	0.12				
52E:							
Valois--------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
		Slope	0.50				
52F:							
Valois--------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
		Slope	0.94				

Table 20.—Ponds and Embankments—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
53C:							
Valois----------------	30	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.03	Depth to water	1.00
Volusia---------------	25	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
Mardin----------------	20	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
55A:							
Darien----------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.03	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	1.00	Slow refill	0.30
55B:							
Darien----------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.03	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	1.00	Slow refill	0.30
55C:							
Darien----------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.03	Depth to saturated zone	1.00	Cutbanks cave	1.00
		Slope	0.01	Piping	1.00	Slow refill	0.30
56B:							
Chautauqua------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	1.00
						Slow refill	0.30
56C:							
Chautauqua------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	1.00
		Slope	0.01			Slow refill	0.30
56D:							
Chautauqua------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	1.00
		Slope	0.12			Slow refill	0.30
57A:							
Busti-----------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Cutbanks cave	1.00
						Slow refill	0.47
57B:							
Busti-----------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Cutbanks cave	1.00
						Slow refill	0.47

Table 20.—Ponds and Embankments—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
57C:							
Busti	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Cutbanks cave	1.00
		Slope	0.01			Slow refill	0.47
58B:							
Rushford	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
58C:							
Rushford	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	1.00		
59B:							
Yorkshire	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
59C:							
Yorkshire	85	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
59D:							
Yorkshire	85	Somewhat limited		Very limited		Very limited	
		Slope	0.12	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
60A:							
Napoli	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.95		
60B:							
Napoli	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.95		
60C:							
Napoli	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.95		
60D:							
Napoli	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.12	Piping	0.95		

Table 20.—Ponds and Embankments—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
61B:							
Schuyler------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
				Piping	0.88	Cutbanks cave	0.10
61C:							
Schuyler------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
		Slope	0.01	Piping	0.88	Cutbanks cave	0.10
61D:							
Schuyler------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
		Slope	0.12	Piping	0.88	Cutbanks cave	0.10
61E:							
Schuyler------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
		Slope	0.50	Piping	0.88	Cutbanks cave	0.10
61F:							
Schuyler------------	80	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.94	Depth to saturated zone	1.00	Slow refill	0.47
		Seepage	0.53	Piping	0.88	Cutbanks cave	0.10
62B:							
Mardin--------------	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
62C:							
Mardin--------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
62D:							
Mardin--------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.12	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
63B:							
Langford------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.99		
63C:							
Langford------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.99		

Table 20.—Ponds and Embankments—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
63D:							
Langford------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.12	Piping	0.99		
64C:							
Mardin--------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
66B:							
Volusia-------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
67A:							
Dalton--------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
67B:							
Dalton--------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
68A:							
Volusia-------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
68B:							
Volusia-------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
68C:							
Volusia-------------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Depth to water	1.00
69A:							
Erie----------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.95		
69B:							
Erie----------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.95		
69C:							
Erie----------------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.95		

Table 20.—Ponds and Embankments—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
71E:							
Mongaup-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.93	Thin layer	0.93	Depth to water	1.00
		Seepage	0.70				
		Slope	0.50				
71F:							
Mongaup-------------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Seepage	0.70				
72B:							
Towerville----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.81	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Piping	0.88	Slow refill	0.30
				Thin layer	0.81	Cutbanks cave	0.10
72C:							
Towerville----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.81	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Piping	0.88	Slow refill	0.30
		Slope	0.01	Thin layer	0.81	Cutbanks cave	0.10
72D:							
Towerville----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.81	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Piping	0.88	Slow refill	0.30
		Slope	0.12	Thin layer	0.81	Cutbanks cave	0.10
72E:							
Towerville----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.81	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Piping	0.88	Slow refill	0.30
		Slope	0.50	Thin layer	0.81	Cutbanks cave	0.10
72F:							
Towerville----------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.81	Piping	0.88	Slow refill	0.30
		Seepage	0.70	Thin layer	0.81	Cutbanks cave	0.10
73B:							
Gretor--------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.96	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.03	Thin layer	0.96	Slow refill	0.97
				Piping	0.81	Cutbanks cave	0.10
73C:							
Gretor--------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.96	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.03	Thin layer	0.96	Slow refill	0.97
		Slope	0.01	Piping	0.81	Cutbanks cave	0.10

Table 20.—Ponds and Embankments—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
74:							
Ashville------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Depth to saturated zone	1.00	Slow refill	0.30
				Piping	1.00	Cutbanks cave	0.10
75:							
Alden---------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.03	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00	Slow refill	0.30
				Piping	1.00		
				Seepage	0.01		
76A:							
Orpark--------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.95	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.02	Piping	0.99	Slow refill	0.98
				Thin layer	0.95	Cutbanks cave	0.10
76B:							
Orpark--------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.95	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.02	Piping	0.99	Slow refill	0.98
				Thin layer	0.95	Cutbanks cave	0.10
76C:							
Orpark--------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.95	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.02	Piping	0.99	Slow refill	0.98
		Slope	0.01	Thin layer	0.95	Cutbanks cave	0.10
77A:							
Chippewa------------	80	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	1.00		
78A:							
Hornell-------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.05	Depth to saturated zone	1.00	Slow refill	1.00
				Thin layer	0.74	Cutbanks cave	0.10
				Piping	0.02		
78B:							
Hornell-------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.05	Depth to saturated zone	1.00	Slow refill	1.00
				Thin layer	0.74	Cutbanks cave	0.10
				Piping	0.02		
78C:							
Hornell-------------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.05	Depth to saturated zone	1.00	Slow refill	1.00
		Slope	0.01	Thin layer	0.74	Cutbanks cave	0.10
				Piping	0.02		

Table 20.—Ponds and Embankments—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
78D:							
Hornell-------------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.12	Depth to saturated zone	1.00	Slow refill	1.00
		Depth to bedrock	0.05	Thin layer	0.74	Cutbanks cave	0.10
				Piping	0.02		
78F:							
Hornell-------------	40	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Depth to saturated zone	1.00	Slow refill	1.00
		Depth to bedrock	0.05	Thin layer	0.74	Cutbanks cave	0.10
				Piping	0.02		
Hudson--------------	35	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	0.07	Cutbanks cave	0.50
79B:							
Mongaup-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.93	Thin layer	0.93	Depth to water	1.00
		Seepage	0.70				
79C:							
Mongaup-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.93	Thin layer	0.93	Depth to water	1.00
		Seepage	0.70				
		Slope	0.01				
79D:							
Mongaup-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.93	Thin layer	0.93	Depth to water	1.00
		Seepage	0.70				
		Slope	0.12				
79E:							
Mongaup-------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.93	Thin layer	0.93	Depth to water	1.00
		Seepage	0.70				
		Slope	0.50				
79F:							
Mongaup-------------	85	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.93	Depth to water	1.00
		Depth to bedrock	0.93				
		Seepage	0.70				
80A:							
Fremont-------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
				Piping	0.85	Cutbanks cave	0.10
80B:							
Fremont-------------	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
				Piping	0.85	Cutbanks cave	0.10

Table 20.—Ponds and Embankments—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
80C:							
Fremont	80	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.53	Depth to saturated zone	1.00	Slow refill	0.47
		Slope	0.01	Piping	0.85	Cutbanks cave	0.10
81B:							
Varysburg	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Cutbanks cave	1.00
				Depth to saturated zone	0.99	Depth to saturated zone	0.01
81C:							
Varysburg	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Cutbanks cave	1.00
		Slope	0.01	Depth to saturated zone	0.99	Depth to saturated zone	0.01
81D:							
Varysburg	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Cutbanks cave	1.00
		Slope	0.12	Depth to saturated zone	0.99	Depth to saturated zone	0.01
81E:							
Varysburg	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Piping	1.00	Cutbanks cave	1.00
		Slope	0.50	Depth to saturated zone	0.99	Depth to saturated zone	0.01
82F:							
Rock outcrop	50	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
		Slope	1.00				
Manlius	30	Very limited		Somewhat limited		Very limited	
		Slope	1.00	Thin layer	0.74	Depth to water	1.00
		Seepage	1.00				
		Depth to bedrock	0.74				
84B:							
Elko	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
84C:							
Elko	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01				
85B:							
Onoville	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.73		
85C:							
Onoville	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.73		

Table 20.—Ponds and Embankments—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
85D:							
Onoville------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.12	Piping	0.73		
86B:							
Eldred--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Depth to saturated zone	1.00	Slow refill	0.97
				Piping	0.98	Cutbanks cave	0.10
86C:							
Eldred--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Seepage	0.03	Depth to saturated zone	1.00	Slow refill	0.97
		Slope	0.01	Piping	0.98	Cutbanks cave	0.10
86D:							
Eldred--------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.12	Depth to saturated zone	1.00	Slow refill	0.97
		Seepage	0.03	Piping	0.98	Cutbanks cave	0.10
87B:							
Shongo--------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.78		
87C:							
Shongo--------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.78		
88A:							
Ivory---------------	85	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	1.00	Slow refill	0.97
				Piping	0.17	Cutbanks cave	0.10
88B:							
Ivory---------------	85	Not limited		Very limited		Somewhat limited	
				Depth to saturated zone	1.00	Slow refill	0.97
				Piping	0.17	Cutbanks cave	0.10
88C:							
Ivory---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.01	Depth to saturated zone	1.00	Slow refill	0.97
				Piping	0.17	Cutbanks cave	0.10
88D:							
Ivory---------------	85	Somewhat limited		Very limited		Somewhat limited	
		Slope	0.12	Depth to saturated zone	1.00	Slow refill	0.97
				Piping	0.17	Cutbanks cave	0.10

Table 20.—Ponds and Embankments—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
89B:							
Portville-----------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.76		
89C:							
Portville-----------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.76		
90A:							
Brinkerton----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.03	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.79		
90B:							
Brinkerton----------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.03	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.79		
91A:							
Palms---------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Piping	1.00		
92:							
Carlisle------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Organic matter content	1.00	Cutbanks cave	1.00
				Ponding	1.00		
				Depth to saturated zone	1.00		
				Piping	1.00		
93:							
Saprists, inundated-	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Ponding	1.00	Cutbanks cave	1.00
				Depth to saturated zone	1.00		
				Piping	1.00		
94B:							
Frewsburg-----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.56	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.53	Piping	0.95	Slow refill	0.47
				Thin layer	0.56	Cutbanks cave	0.10
94C:							
Frewsburg-----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.56	Depth to saturated zone	1.00	Depth to hard bedrock	1.00
		Seepage	0.53	Piping	0.95	Slow refill	0.47
		Slope	0.01	Thin layer	0.56	Cutbanks cave	0.10

Table 20.—Ponds and Embankments—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
95B:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70				
95C:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70				
		Slope	0.01				
95D:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70				
		Slope	0.12				
95E:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70				
		Slope	0.50				
95F:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.94	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77				
		Seepage	0.70				
96B:							
Carrollton-----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.86	Piping	1.00	Depth to hard bedrock	1.00
		Seepage	0.70	Depth to saturated zone	0.87	Slow refill	0.30
				Thin layer	0.86	Cutbanks cave	0.10
						Depth to saturated zone	0.06
96C:							
Carrollton-----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.86	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.86		
		Slope	0.01				
96D:							
Carrollton-----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.86	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.86		
		Slope	0.12				
96E:							
Carrollton-----------	80	Somewhat limited		Very limited		Very limited	
		Depth to bedrock	0.86	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.86		
		Slope	0.50				
96F:							
Carrollton-----------	80	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.86	Thin layer	0.86		
		Seepage	0.70				

Table 20.—Ponds and Embankments—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
97B:							
Kinzua	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
						Slow refill	0.97
97C:							
Kinzua	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.01			Slow refill	0.97
97D:							
Kinzua	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.12				
97E:							
Kinzua	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.50				
97F:							
Kinzua	85	Somewhat limited		Not limited		Very limited	
		Slope	0.99			Depth to water	1.00
		Seepage	0.70				
98D:							
Kinzua	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.12				
98E:							
Kinzua	85	Somewhat limited		Not limited		Very limited	
		Seepage	0.70			Depth to water	1.00
		Slope	0.50				
99B:							
Buchanan	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
99C:							
Buchanan	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01				
99D:							
Buchanan	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.12				
100:							
Udorthents	85	Not rated		Not rated		Not rated	
101:							
Udorthents, refuse substratum	90	Not rated		Not rated		Not rated	

Table 20.—Ponds and Embankments—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
102C:							
Mandy---------------	40	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70				
Rock outcrop--------	35	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
103C:							
Knapp Creek---------	40	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.25	Depth to water	1.00
		Depth to bedrock	0.01	Thin layer	0.01		
Rock outcrop--------	35	Very limited		Not rated		Not rated	
		Depth to bedrock	1.00				
104B:							
Flatiron------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
104C:							
Flatiron------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
		Slope	0.01				
104D:							
Flatiron------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
		Slope	0.12				
104E:							
Flatiron------------	80	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Seepage	0.01	Depth to water	1.00
		Slope	0.50				
108D:							
Hartleton-----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.01	Depth to water	1.00
		Slope	0.12				
		Depth to bedrock	0.01				
108E:							
Hartleton-----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.01	Depth to water	1.00
		Slope	0.50				
		Depth to bedrock	0.01				
108F:							
Hartleton-----------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.01	Depth to water	1.00
		Slope	0.94				
		Depth to bedrock	0.01				
131:							
Lamson--------------	85	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.02		

Table 20.—Ponds and Embankments—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
132B:							
Wiscoy--------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.02	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.97		
132C:							
Wiscoy--------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.02	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.97		
135C:							
Hudson--------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	0.07	Cutbanks cave	0.50
135D:							
Hudson--------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.12	Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	0.07	Cutbanks cave	0.50
135E:							
Hudson--------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.50	Depth to saturated zone	1.00	Slow refill	1.00
				Hard to pack	0.07	Cutbanks cave	0.50
140D:							
Dunkirk-------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.12	Piping	1.00	Depth to water	1.00
		Seepage	0.03				
140E:							
Dunkirk-------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.50	Piping	1.00	Depth to water	1.00
		Seepage	0.03				
185C:							
Onoville------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.73		
185D:							
Onoville------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.12	Piping	0.73		
187B:							
Shongo--------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.78		

Table 20.—Ponds and Embankments—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
187C:							
Shongo---------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.78		
188B:							
Cavode---------------	85	Not limited		Very limited		Very limited	
				Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.19		
188C:							
Cavode---------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.01	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.19		
188D:							
Cavode---------------	85	Somewhat limited		Very limited		Very limited	
		Slope	0.12	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.19		
189B:							
Portville------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
				Piping	0.76		
189C:							
Portville------------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.53	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01	Piping	0.76		
195C:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70				
195D:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Depth to bedrock	0.77	Thin layer	0.77	Depth to water	1.00
		Seepage	0.70				
		Slope	0.12				
195E:							
Mandy----------------	85	Somewhat limited		Somewhat limited		Very limited	
		Slope	0.82	Thin layer	0.77	Depth to water	1.00
		Depth to bedrock	0.77				
		Seepage	0.70				
199C:							
Buchanan-------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.01				

Table 20.—Ponds and Embankments—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
199D:							
Buchanan------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Depth to water	1.00
		Slope	0.12				
289B:							
Ceres---------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.29	Depth to water	1.00
		Depth to bedrock	0.29	Seepage	0.12		
289C:							
Ceres---------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.29	Depth to water	1.00
		Depth to bedrock	0.29	Seepage	0.12		
		Slope	0.01				
289D:							
Ceres---------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.29	Depth to water	1.00
		Depth to bedrock	0.29	Seepage	0.12		
		Slope	0.12				
289E:							
Ceres---------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.29	Depth to water	1.00
		Slope	0.50	Seepage	0.12		
		Depth to bedrock	0.29				
289F:							
Ceres---------------	85	Very limited		Somewhat limited		Very limited	
		Seepage	1.00	Thin layer	0.29	Depth to water	1.00
		Slope	0.94	Seepage	0.12		
		Depth to bedrock	0.29				
400:							
Wakeville-----------	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Piping	1.00	Slow refill	0.30
				Seepage	0.07		
496B:							
Gilpin--------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to hard bedrock	1.00
		Depth to bedrock	0.69	Depth to saturated zone	0.87	Slow refill	0.30
				Thin layer	0.70	Cutbanks cave	0.10
						Depth to saturated zone	0.06
496C:							
Gilpin--------------	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.69	Thin layer	0.70		
		Slope	0.01				

Table 20.—Ponds and Embankments—Continued

Map symbol and soil name	Pct. of map unit	Pond reservoir areas: Rating class and limiting features	Pond reservoir areas: Value	Embankments, dikes, and levees: Rating class and limiting features	Embankments, dikes, and levees: Value	Aquifer-fed excavated ponds: Rating class and limiting features	Aquifer-fed excavated ponds: Value
496D:							
Gilpin	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.69	Thin layer	0.70		
		Slope	0.12				
496E:							
Gilpin	85	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Depth to bedrock	0.69	Thin layer	0.70		
		Slope	0.50				
496F:							
Gilpin	85	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Piping	1.00	Depth to water	1.00
		Seepage	0.70	Thin layer	0.70		
		Depth to bedrock	0.69				
497D:							
Rayne	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.12				
497E:							
Rayne	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.50				
497F:							
Rayne	80	Somewhat limited		Very limited		Very limited	
		Slope	0.94	Piping	1.00	Depth to water	1.00
		Seepage	0.70				
498E:							
Rayne	80	Somewhat limited		Very limited		Very limited	
		Seepage	0.70	Piping	1.00	Depth to water	1.00
		Slope	0.50				
800:							
Holderton	80	Very limited		Very limited		Very limited	
		Seepage	1.00	Depth to saturated zone	1.00	Cutbanks cave	1.00
				Seepage	0.01		
PG:							
Pits, gravel	85	Not rated		Not rated		Not rated	
Ur:							
Urban land	85	Not rated		Not rated		Not rated	
W:							
Water	100	Not limited		Not rated		Not rated	

Table 21.—Engineering Properties

(Absence of an entry indicates that the data were not estimated.)

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
1:												
Udifluvents-----	0-9	Gravelly loamy sand	SC, ML, GM, CL, SM	A-2, A-1, A-4	0	0-10	45-100	25-100	15-100	5-80	0-25	NP-20
	9-70	Very gravelly sand, gravelly loam, silty clay loam	SP-SC, CL, GC, GM, ML	A-2, A-1, A-4, A-6	0	0-15	45-100	25-100	15-100	0-90	0-30	NP-20
Fluvaquents-----	0-12	Gravelly sandy loam	SC, ML, GM, CL, SM	A-2, A-1, A-4	0	0-10	45-100	25-100	15-100	10-90	0-25	NP-15
	12-72	Very gravelly sand, gravelly silt loam, silty clay loam	SP-SC, CL, GC, GM, ML, SC-SM	A-2, A-1, A-4, A-6	0	0-15	45-100	25-100	15-100	5-90	0-30	NP-20
2:												
Hamlin----------	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	80-100	45-90	15-35	2-15
	10-17	Very fine sandy loam, silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	80-100	45-90	15-35	2-15
	17-36	Silt loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	90-100	45-90	15-35	2-15
	36-72	Very fine sandy loam, silt loam, fine sandy loam	CL-ML, CL, ML, SC-SM, SM	A-4	0	0	95-100	92-100	65-100	35-90	0-25	NP-10
3:												
Tioga-----------	0-8	Silt loam	ML, SM	A-4	0	0	65-100	50-100	35-100	20-90	0-15	NP-4
	8-34	Silt loam, very fine sandy loam, loam, gravelly fine sandy loam	ML, GM, SM	A-4, A-2, A-1	0	0	65-100	50-100	35-100	20-90	0-15	NP-2
	34-72	Very fine sandy loam, fine sandy loam, silt loam, gravelly loam, very gravelly loamy sand	SM, ML, GW-GM, GM	A-2, A-1, A-3, A-4	0	0-10	50-100	30-100	15-100	5-90	0-15	NP-2

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
4:												
Teel------------	0-8	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	80-100	45-90	15-35	2-15
	8-34	Silt loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	80-100	45-90	15-35	2-15
	34-72	Silt loam, very fine sandy loam, fine sandy loam, gravelly very fine sandy loam	CL, ML, SC-SM, SM	A-4, A-2, A-6	0	0-5	75-100	70-100	50-100	30-90	0-35	NP-15
5:												
Wayland---------	0-9	Silt loam	ML, OL	A-5, A-7	0	0	96-100	95-100	70-100	40-95	40-50	5-15
	9-25	Silty clay loam, silt loam	ML, CL-ML, CL	A-4, A-6, A-7	0	0	96-100	95-100	80-100	70-95	25-45	5-15
	25-72	Silt loam, stratified silty clay loam to silt loam	CL, CL-ML	A-4	0	0	95-100	92-100	80-100	65-95	16-25	5-10
6A:												
Wyalusing-------	0-6	Silt loam	ML, SM	A-4	0	0-5	75-100	70-100	50-100	30-90	25-35	NP-10
	6-27	Silt loam, loam, gravelly fine sandy loam, fine sandy loam, gravelly loam	ML, SM	A-4, A-2	0	0-10	75-100	70-100	50-100	30-90	20-35	NP-10
	27-72	Stratified very gravelly loamy sand, sand	SP-SM, GM, SM	A-1, A-2	0	0-30	45-100	25-100	10-70	4-30	15-25	NP-2
7A:												
Philo-----------	0-8	Silt loam	CL-ML, ML	A-4	0	0	75-100	70-100	40-100	20-90	20-35	1-10
	8-34	Fine sandy loam, gravelly loam, sandy loam, silt loam	CL-ML, GM, ML, SM	A-4	0	0	75-100	70-100	40-100	20-90	20-35	1-10
	34-46	Fine sandy loam, gravelly sandy loam, loam, silt loam	CL-ML, GM, SM	A-4	0	0	75-100	70-100	40-100	20-90	20-35	1-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
7A:												
Philo----------	46-72	Sandy loam, gravelly loam, very gravelly fine sandy loam, silt loam	SC-SM, GC, GM, SC, SM	A-2, A-4	0	0	65-100	45-100	25-95	10-90	15-30	1-10
8:												
Middlebury------	0-8	Silt loam	CL, CL-ML, ML, SC-SM, SM	A-4, A-2	0	0	75-100	70-100	50-100	30-90	25-35	5-10
	8-30	Loam, silt loam, gravelly fine sandy loam	ML, CL-ML, SC-SM, SM	A-4, A-2	0	0	75-100	70-100	50-100	30-90	20-25	2-5
	30-72	Fine sandy loam, gravelly loam, very fine sandy loam, stratified very gravelly sand	SM, GW, GM, SW	A-1, A-2, A-3	0	0	50-100	35-100	20-95	0-70	0-14	NP
9:												
Pawling---------	0-9	Silt loam	CL-ML, CL, ML	A-4	0	0	85-100	85-100	65-100	50-90	20-30	3-10
	9-28	Silt loam, loam, fine sandy loam	CL-ML, ML, SC, SM	A-4	0	0	85-100	85-100	55-100	35-90	20-30	3-10
	28-72	Gravelly loamy sand, very gravelly sand, extremely gravelly sand	GP, GW, SP, SW	A-1	0	0-5	40-90	20-75	10-50	0-20	0-14	NP
10:												
Atkins----------	0-4	Silt loam	CL, CL-ML, ML	A-6, A-4	0	0	96-100	96-100	75-100	60-95	20-40	3-20
	4-38	Loam, silty clay loam, silt loam, gravelly fine sandy loam	CL, ML, SC, SM	A-6, A-4	0	0	96-100	96-100	65-100	40-95	20-40	3-20
	38-72	Sandy loam, gravelly sandy loam, silty clay loam	SC, CL, GM, ML, SM	A-2, A-4, A-6	0	0-10	45-100	30-100	15-95	10-90	20-40	1-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
11B,11C,11D,11E, 11F: Ischua----------	0-6	Channery silt loam	CL, CL-ML, SC, SC-SM	A-6, A-4	0	0-10	65-95	55-92	40-90	30-80	25-40	5-20
	6-23	Silt loam, channery silt loam, channery loam, channery silty clay loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-15	65-95	55-92	40-90	30-85	25-40	5-20
	23-28	Channery silty clay loam, very channery silt loam, loam	CL, CL-ML, GC, SC	A-6, A-4, A-2-6, A-2-4	0	0-15	45-92	35-85	25-80	20-75	25-40	5-20
	28-38	Unweathered bedrock			0	0	---	---	---	---	---	---
12B,12C,12D,12E Franklinville---	0-3	Channery silt loam	ML, GM, GC-GM, SM	A-4, A-6	0	0-5	65-95	55-92	40-90	30-80	20-40	1-12
	3-32	Channery silt loam, silt loam, channery loam, gravelly fine sandy loam	GM, GC-GM, ML, SM	A-4, A-2	0	0-5	65-95	55-92	35-90	20-80	15-25	NP-5
	32-42	Channery silt loam, channery loam, gravelly fine sandy loam	GM, GC-GM, ML, SM	A-4, A-2	0	0-10	65-90	50-75	35-70	20-65	15-25	NP-5
	42-72	Very channery silt loam, flaggy loam, gravelly sandy loam, very channery fine sandy loam	GM, GC-GM, ML, SM	A-2, A-1-b, A-4	0-1	0-15	45-85	30-70	15-65	10-60	15-25	NP-5
14B,14C: Hornellsville---	0-5	Silt loam	ML, CL	A-7, A-6	0	0	95-100	92-100	80-100	65-95	35-49	10-22
	5-34	Silty clay loam, silty clay, channery silty clay loam, clay	CL, GC, ML, CH	A-7, A-6	0	0-5	65-98	50-95	45-95	40-90	35-55	10-30
	34-48	Weathered bedrock			0	0	---	---	---	---	---	---

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
15B,15C,15D:												
Willdin---------	0-6	Channery silt loam	ML, GM, SM	A-4, A-5	0	0-15	65-95	55-92	40-90	30-85	25-45	3-10
	6-24	Channery silt loam, silt loam, channery loam, flaggy fine sandy loam	CL-ML, GC-GM, GM, SM	A-4, A-2-4	0	0-15	65-95	55-92	35-90	25-80	15-30	NP-10
	24-60	Very channery loam, channery silt loam, flaggy loam, very channery silt loam	GM, CL-ML, ML, SM	A-2, A-2-4, A-4	0	0-25	50-90	40-75	35-70	25-65	15-30	NP-7
	60-72	Very channery silt loam, gravelly silt loam, flaggy loam	GM, CL-ML, ML, SM	A-2, A-2-4, A-4	0	0-25	45-90	35-75	25-70	20-65	15-30	NP-7
16A,16B,16C:												
Almond----------	0-7	Silt loam	CL, ML	A-6, A-7	0	0-10	65-92	55-85	45-80	35-75	35-45	10-20
	7-37	Channery silty clay loam, silt loam, channery silt loam, silty clay loam	CL, GC, SC	A-6	0	0-10	65-92	55-85	45-80	35-75	25-40	10-20
	37-72	Channery silty clay loam, very channery silty clay loam, flaggy silt loam	CL, CL-ML, GC, SC-SM	A-4, A-2, A-1, A-6	0	0-25	45-90	30-75	25-70	20-65	25-40	5-15
17B,17C,17D,17E:												
Salamanca-------	0-8	Silt loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2	0	0-5	65-95	50-92	40-90	30-80	25-40	5-20
	8-16	Silt loam, channery silty clay loam, channery loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-10	65-95	50-92	40-90	30-85	25-40	5-20
	16-37	Channery silty clay loam, channery silt loam, very channery loam	CL, CL-ML, GC, SC	A-6, A-4, A-2-6, A-2-4	0	0-15	50-85	40-70	35-70	25-65	25-40	5-20

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Salamanca-------	37-72	Channery silt loam, channery silty clay loam, very channery loam	GC, CL-ML, CL, SC	A-6, A-4, A-2-6, A-2-4	0	0-15	50-85	40-70	35-70	25-65	25-40	5-20
18A:												
Pope------------	0-10	Fine sandy loam	SC-SM, CL, CL-ML, ML, SM	A-4	0	0	70-100	55-100	30-100	15-90	15-30	NP-10
	10-38	Very fine sandy loam, fine sandy loam, gravelly sandy loam, loam	ML, CL-ML, SC-SM, SM	A-4, A-2	0	0	70-100	55-100	30-100	15-90	15-30	NP-7
	38-72	Loam, sandy loam, very gravelly loamy sand, gravelly loam	ML, GM, SC-SM, SM	A-4, A-2, A-1	0	0-10	40-100	20-100	10-95	4-70	15-30	NP-7
19A,19B:												
Olean-----------	0-9	Silt loam	CL-ML, CL, ML	A-4	0	0	95-100	92-100	75-100	45-90	15-30	2-10
	9-23	Silt loam, very fine sandy loam	CL-ML, CL, ML	A-4	0	0	95-100	92-100	75-100	45-90	15-30	2-10
	23-36	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	92-100	80-100	65-90	20-40	5-15
	36-72	Very gravelly loamy sand, sand	GP-GM, GM, SM, SP-SM	A-1, A-2, A-3	0-2	0-10	40-100	20-100	10-75	0-30	0-14	NP
20A,20B,20C,20D:												
Unadilla--------	0-9	Silt loam	CL-ML, ML	A-4	0	0	100	92-100	75-100	45-90	0-35	NP-10
	9-55	Silt loam, very fine sandy loam	CL-ML, ML	A-4	0	0	95-100	92-100	75-100	45-90	0-25	NP-10
	55-72	Gravelly sandy loam, very gravelly sand, gravelly sand, fine sandy loam	SM, GP, GM, SP	A-1, A-2, A-3	0	0-10	45-100	30-100	15-75	1-45	0-14	NP
22A,22B:												
Allard----------	0-9	Silt loam	CL-ML, ML	A-4	0	0	100	92-100	70-100	40-90	0-35	NP-10
	9-34	Silt loam, very fine sandy loam	CL-ML, ML	A-4	0	0	100	92-100	75-100	45-90	0-35	NP-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Allard----------	34-72	Very gravelly loamy sand, stratified very gravelly sand, loamy sand	SP, GM, GW, SM, SW	A-1, A-2, A-3	0	0	40-100	25-100	10-75	0-30	0-14	NP
25A,25B,25C,25D, 25E,25F:												
Chenango--------	0-9	Gravelly silt loam	CL-ML, GM, ML, SM	A-4, A-2, A-1	0	0-10	50-92	40-85	25-80	15-70	0-35	NP-10
	9-30	Gravelly silt loam, very gravelly loam, very gravelly silt loam, gravelly fine sandy loam, fine sandy loam	GC-GM, GM, ML, SM	A-4, A-2, A-1	0	0-10	40-85	30-70	20-70	10-65	0-40	NP-10
	30-72	Stratified very gravelly sand, very gravelly coarse sandy loam, very gravelly loamy coarse sand, stratified gravelly sand, gravelly loamy fine sand	GW, GM, SM, SW	A-1	0	0-10	40-75	20-60	10-45	1-20	0-14	NP
26A,26B:												
Chenango, fan---	0-9	Channery silt loam	SC-SM, GM, ML, SM	A-4, A-2, A-1	0	0-5	50-92	35-85	15-80	10-70	0-35	NP-10
	9-45	Channery silt loam, very gravelly silt loam, very gravelly loam, channery loam, very channery fine sandy loam	GC-GM, GM, GP-GM, ML, SM	A-1, A-2, A-4	0	0-20	40-85	30-70	20-65	10-60	0-40	NP-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Chenango, fan---	45-72	Very gravelly coarse sandy loam, stratified gravelly sand, very gravelly loamy sand, very gravelly sand, gravelly loamy fine sand	GP-GM, GM, GW, SM, SP	A-1	0	0-20	40-75	25-55	10-40	0-15	0-14	NP
27A,27B:												
Castile---------	0-10	Gravelly silt loam	GC-GM, CL-ML, GM, ML, SM	A-4, A-2	0	0-10	70-90	60-75	40-70	15-65	0-30	NP-10
	10-30	Very gravelly loam, very gravelly silt loam, gravelly silt loam, very gravelly sandy loam	GC-GM, GM, ML, SM	A-2, A-1, A-3, A-4	0	0-10	45-85	30-70	15-65	5-65	0-30	NP-10
	30-72	Stratified very gravelly sand, very gravelly loam, very gravelly loamy sand, extremely gravelly loamy sand	GP, GW, GW-GM, SW-SM	A-1, A-2, A-4	0	0-10	40-70	25-50	10-45	0-40	0-14	NP
28A:												
Scio------------	0-9	Silt loam	ML	A-4	0	0	100	92-100	65-100	35-90	0-20	NP-4
	9-50	Silt loam, very fine sandy loam	ML	A-4	0	0	100	92-100	75-100	45-90	0-20	NP-4
	50-72	Gravelly loamy sand, stratified very gravelly sand to fine sandy loam	SM, ML, GP-GM, SP	A-1, A-2, A-3, A-4	0	0	45-100	30-100	15-95	1-80	0-10	NP-4

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
29A,29B,29C,29D, 29E:												
Chenango--------	0-9	Fine gravelly sandy loam	SC-SM, GM, ML, SM	A-1, A-2, A-4	0	0	65-96	35-85	15-80	10-70	0-35	NP-10
	9-30	Fine gravelly loam, loam, fine gravelly sandy loam, very gravelly loam, very gravelly silt loam, gravelly fine sandy loam	SC-SM, GM, ML, SM	A-1, A-2, A-4	0	0	55-92	30-75	15-70	10-65	0-40	NP-10
	30-72	Very gravelly coarse sandy loam, stratified very gravelly sand, very gravelly loamy sand, very gravelly sand, gravelly loamy fine sand	GW-GM, GM, GW, SM, SW	A-1	0	0-10	40-85	20-60	10-45	0-20	0-14	NP
31B,31C:												
Collamer--------	0-6	Silt loam	CL, CL-ML, ML, SC-SM, SM	A-4	0	0	95-100	92-100	65-100	40-90	25-35	5-10
	6-24	Silt loam, very fine sandy loam, fine sandy loam, loam	CL-ML, CL, ML, SC-SM	A-4	0	0	95-100	92-100	75-100	55-90	20-30	3-10
	24-45	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0	95-100	92-100	80-100	65-95	20-35	5-15
	45-72	Silt loam, very fine sand, silty clay loam, stratified very fine sand to silt	CL, CL-ML, ML, SM	A-4, A-6	0	0	95-100	92-100	65-100	30-95	20-35	3-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
32A,32B:												
Churchville-----	0-14	Silt loam	ML, MH, CL	A-7	0	0	90-100	85-100	75-100	60-95	40-55	15-25
	14-37	Silty clay loam, silty clay, clay loam	CL	A-7	0	0	90-100	85-100	70-100	60-95	40-50	25-35
	37-72	Gravelly silt loam, gravelly loam, silty clay loam	CL-ML, CL, GC, GM, ML	A-4, A-2	0	0-5	65-92	55-85	40-80	30-75	10-20	1-8
33A:												
Wallington------	0-8	Silt loam	CL-ML, ML	A-4	0	0	100	95-100	80-100	40-90	15-20	3-6
	8-14	Silt loam, very fine sandy loam	CL-ML, ML	A-4	0	0	100	95-100	80-100	40-90	15-20	3-6
	14-38	Silt loam, very fine sandy loam	CL-ML, ML	A-4	0	0	100	95-100	80-100	40-90	15-20	3-6
	38-72	Silt loam, very fine sandy loam, loamy very fine sand	ML, SM	A-4	0	0	95-100	92-100	80-100	40-90	0-20	NP-3
34:												
Getzville-------	0-9	Silt loam	CL, ML, OL	A-6, A-7	0	0	95-100	92-100	80-100	65-95	35-45	10-20
	9-24	Silt loam, silty clay loam	CL, CL-ML	A-6, A-4	0	0	95-100	92-100	80-100	65-95	20-40	5-20
	24-72	Fine sand, stratified fine sand to sand, sand, loamy fine sand, very gravelly sand	SP-SM, SM, SP, SW, SW-SM	A-3, A-2, A-1	0	0-5	55-100	45-100	20-80	1-35	0-14	NP
35A,35B,35C:												
Rhinebeck-------	0-9	Silt loam	CL, CH, MH, ML	A-7, A-6	0	0	92-100	85-100	70-100	55-95	30-55	10-25
	9-13	Silty clay loam, silty clay, silt loam	CL, CH	A-7, A-6	0	0	92-100	85-100	70-100	45-95	30-55	15-30
	13-38	Silty clay, silty clay loam	CL, CH	A-7, A-6	0	0	92-100	85-100	75-100	65-95	30-55	15-30

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Rhinebeck-------	38-72	Silty clay loam, stratified very fine sand to silt, clay, silty clay	CL-ML, CL, ML	A-4	0	0	92-100	85-100	70-100	60-95	10-30	NP-10
36:												
Canadice--------	0-8	Silty clay loam	MH, ML, OH, OL	A-7	0	0	100	95-100	80-100	65-95	40-65	10-25
	8-42	Silty clay loam, silty clay, clay	MH, CL, CH, ML	A-7	0	0	100	95-100	80-100	70-95	45-65	20-30
	42-72	Stratified silty clay loam to silty clay, silty clay, clay	MH, CL, CH, ML	A-7	0	0	100	92-100	80-100	70-95	45-65	20-30
37A,37B:												
Tonawanda-------	0-9	Silt loam	ML, CL-ML	A-4	0	0	100	96-100	75-100	45-90	0-25	NP-5
	9-38	Silt loam, silt, very fine sandy loam, loamy very fine sand	ML, CL-ML	A-4	0	0	100	96-100	70-100	35-90	0-25	NP-5
	38-72	Silt loam, stratified loamy fine sand to sand, silt, very fine sandy loam	ML, CL-ML	A-4	0	0	100	85-100	70-100	35-90	0-25	NP-5
38A,38B:												
Niagara---------	0-12	Silt loam	ML	A-4, A-5, A-6, A-7	0	0	95-100	92-100	75-100	50-90	30-45	5-15
	12-36	Silty clay loam, silt loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	75-100	50-95	25-35	3-13
	36-72	Silt loam, very fine sandy loam, silty clay loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	75-100	50-95	25-35	3-13

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas-ticity index
	In				Pct	Pct					Pct	
39A:												
Halsey----------	0-6	Silt loam	CL-ML, CL, ML, SC, SM	A-4, A-2	0	0-5	65-100	50-100	35-100	20-90	20-30	3-10
	6-34	Gravelly silt loam, gravelly loam, loam, gravelly fine sandy loam	CL-ML, CL, ML, SC, SM	A-4, A-2	0	0-5	65-100	50-100	35-100	20-90	20-30	3-10
	34-72	Very gravelly loamy fine sand, stratified gravelly sand	SW-SM, GM, GP, SM, SP	A-1, A-2, A-3	0	0-10	45-100	30-100	15-70	0-30	0-14	NP
40A,40B,40C:												
Williamson------	0-8	Silt loam	ML, SM	A-4, A-6, A-7	0	0	95-100	92-100	65-100	35-90	30-45	5-15
	8-20	Silt loam, very fine sandy loam	CL-ML, CL, ML	A-4	0	0	95-100	92-100	75-100	45-90	0-30	NP-10
	20-38	Silt loam, very fine sandy loam	CL-ML, CL, ML	A-4	0	0	95-100	92-100	75-100	45-90	0-30	NP-10
	38-72	Silt loam, stratified very fine sandy loam to silt loam	CL-ML, CL, ML	A-4	0	0	95-100	92-100	75-100	35-90	0-30	NP-10
41A,41B:												
Barcelona-------	0-9	Silt loam	ML	A-4, A-5, A-6, A-7	0	0	95-100	92-100	75-100	45-90	30-45	5-15
	9-36	Silt loam, silty clay loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	95-100	92-100	80-100	65-95	25-35	3-13
	36-46	Channery silt loam, very channery silt loam, channery silty clay loam	GC, CL, GM, ML	A-2, A-4, A-6	0	0-15	50-90	40-75	35-70	25-65	25-35	3-13
	46-56	Unweathered bedrock			0	0	---	---	---	---	---	---
42A,42B:												
Elnora----------	0-7	Fine sandy loam	SM, ML	A-4, A-2	0	0	100	95-100	60-85	20-55	0-14	NP
	7-27	Loamy fine sand, fine sand	SM	A-2	0	0	100	95-100	70-80	20-35	0-14	NP

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Elnora----------	27-72	Fine sand, loamy fine sand	SM	A-2	0	0	85-100	75-100	45-80	15-35	0-14	NP
43:												
Canandaigua, silt loam------	0-9	Silt loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	55-100	35-90	20-40	5-15
	9-32	Silty clay loam, silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	65-100	45-95	20-40	5-15
	32-72	Silty clay loam, silt loam, very fine sandy loam	CL-ML, CL, ML	A-4	0	0	95-100	85-100	65-100	45-95	20-30	3-10
44:												
Canandaigua, mucky silt loam	0-10	Mucky silt loam	OL, ML	A-5, A-4, A-6	0	0	90-100	85-100	55-100	35-90	35-55	5-15
	10-32	Silty clay loam, silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	65-100	45-95	20-40	5-15
	32-72	Silty clay loam, silt loam, very fine sandy loam	CL-ML, CL, ML	A-4	0	0	95-100	85-100	65-100	45-95	20-30	3-10
45:												
Canandaigua, acid substratum	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	55-100	35-90	20-40	5-15
	8-32	Silty clay loam, silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	90-100	85-100	65-100	45-95	20-40	5-15
	32-72	Silty clay loam, silt loam, very fine sandy loam	CL-ML, CL, ML	A-4	0	0	95-100	85-100	65-100	45-95	20-30	3-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
46:												
Swormville------	0-8	Silt loam	CL, ML, OL	A-6, A-7	0	0	95-100	92-100	80-100	65-95	35-45	10-20
	8-31	Silt loam, loam, clay loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	95-100	92-100	80-100	65-95	20-35	5-15
	31-35	Sandy loam, loamy fine sand, very gravelly very fine sandy loam	SM, ML, GW-GM, SW-SM	A-2, A-1, A-4	0	0	65-100	45-100	30-95	10-80	0-14	NP
	35-72	Loamy sand, sand, loamy fine sand, very gravelly sand	SW-SM, GM, GW, SM, SW	A-1, A-2, A-3	0	0-5	55-100	45-100	20-80	1-35	0-14	NP
47A:												
Minoa-----------	0-9	Very fine sandy loam	ML, SM	A-4	0	0	95-100	92-100	80-100	35-90	0-20	NP-4
	9-32	Very fine sandy loam, fine sandy loam, silt loam	SM, ML	A-4	0	0	95-100	92-100	55-100	30-90	0-20	NP-4
	32-36	Sandy loam, loamy very fine sand, fine sandy loam, silt loam	SM, ML	A-2, A-4	0	0	95-100	92-100	55-100	25-90	0-20	NP-4
	36-72	Stratified fine sandy loam to fine sand, silt loam, sandy loam, loamy fine sand	SM, ML	A-2, A-4	0	0	95-100	92-100	55-100	20-90	0-20	NP-4
48A,48B,48C:												
Colonie---------	0-9	Fine sandy loam	SM, ML	A-4	0	0	100	92-100	55-95	20-65	0-14	NP
	9-47	Loamy fine sand, fine sand	SM	A-2	0	0	100	92-100	55-80	20-35	0-14	NP
	47-72	Loamy fine sand, fine sand	SM	A-2	0	0	100	92-100	55-80	20-35	0-14	NP

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
49A:												
Red Hook--------	0-9	Silt loam	CL, CL-ML, ML, SC-SM, SM	A-4, A-2, A-6	0	0-5	65-95	50-92	35-90	20-80	15-40	1-15
	9-32	Gravelly loam, gravelly sandy loam, silt loam, very gravelly sandy loam	SC, GM, ML, SC-SM, SM	A-4, A-2, A-1, A-6	0	0-5	45-92	30-85	15-80	10-70	15-30	1-15
	32-72	Very gravelly sandy loam, gravelly silt loam, gravelly loam	GP-GC, GM, ML, SC-SM, SM	A-2, A-1, A-4, A-6	0	0-10	40-90	25-75	15-70	2-65	15-30	1-15
50A,50B,50C:												
Canaseraga------	0-5	Silt loam	ML	A-4	0	0	90-100	85-100	65-100	40-90	0-20	NP-4
	5-23	Silt loam, very fine sandy loam	ML, CL-ML	A-4	0	0	90-100	85-100	65-100	40-90	0-20	NP-6
	23-28	Silt loam, loam	CL-ML, CL, ML	A-4	0	0	90-100	85-100	65-100	50-90	20-25	3-8
	28-72	Channery silt loam, very channery loam, loam	CL-ML, CL, GC, GM, ML	A-4, A-2	0	0-10	60-92	50-85	40-80	30-70	20-25	3-8
51B,51C,51D,51E, 51F:												
Chadakoin-------	0-9	Channery silt loam	ML, GM, GC-GM, SM	A-4, A-2, A-6	0	0-10	65-95	55-92	40-90	30-80	20-40	1-12
	9-33	Channery silt loam, silt loam, gravelly loam, gravelly fine sandy loam	ML, GM, GC-GM, SM	A-4, A-2	0	0-10	65-90	55-75	35-70	20-65	15-25	NP-5
	33-54	Channery loam, channery silt loam, gravelly loam, very gravelly sandy loam	SM, ML, GM, GC-GM	A-4, A-2	0-5	0-10	55-85	45-70	30-70	10-65	15-25	NP-5

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Chadakoin-------	54-72	Very channery loam, channery silt loam, gravelly loam, very channery sandy loam	GM, GC-GM, CL-ML, SM	A-2, A-4	0-5	0-15	55-85	45-70	30-65	10-65	15-25	NP-5
52B,52C,52D,52E, 52F:												
Valois----------	0-6	Gravelly silt loam	ML, GM, GC-GM, SM	A-4, A-2, A-1	0	0-5	65-95	50-92	30-90	15-80	20-40	1-12
	6-27	Gravelly silt loam, fine sandy loam, very fine sandy loam, loam, gravelly sandy loam	ML, GM, GC-GM, SM	A-4, A-2, A-1	0	0-5	65-95	50-92	30-90	15-80	15-25	NP-5
	27-48	Gravelly loam, gravelly silt loam, gravelly sandy loam, gravelly fine sandy loam, gravelly very fine sandy loam	SM, ML, GM, GC-GM	A-4, A-2, A-1	0	0-10	65-90	50-75	30-70	15-65	15-25	NP-5
	48-72	Very gravelly sandy loam, very gravelly fine sandy loam, very gravelly loam, gravelly silt loam	SM, GC-GM, GM, GW, GW-GM	A-1, A-2, A-4	0-5	0-15	45-90	25-75	10-65	2-60	15-25	NP-7
53C:												
Valois----------	0-6	Gravelly silt loam	ML, GM, GC-GM, SM	A-4, A-2, A-1	0	0-5	65-95	50-92	30-90	15-80	20-40	1-12
	6-27	Gravelly silt loam, fine sandy loam, very fine sandy loam, loam, gravelly sandy loam	ML, GM, GC-GM, SM	A-4, A-2, A-1	0	0-5	65-95	50-92	30-90	15-80	15-25	NP-5

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Valois----------	27-48	Gravelly loam, gravelly silt loam, gravelly sandy loam, gravelly fine sandy loam, gravelly very fine sandy loam	SM, ML, GM, GC-GM	A-4, A-2, A-1	0	0-10	65-90	50-75	30-70	15-65	15-25	NP-5
	48-72	Very gravelly sandy loam, very gravelly fine sandy loam, very gravelly loam, gravelly silt loam	SM, GC-GM, GM, GW, GW-GM	A-1, A-2, A-4	0-5	0-15	45-90	25-75	10-65	2-60	15-25	NP-7
Volusia---------	0-7	Channery silt loam	CL, CL-ML, GC, SC	A-4	0	0-10	65-95	60-92	50-90	35-80	15-25	5-10
	7-16	Channery loam, channery silt loam, silt loam	SC, GC-GM, CL-ML, CL	A-4	0-1	0-10	65-95	60-92	50-90	35-80	15-25	5-10
	16-45	Channery silt loam, channery loam, silty clay loam	SC, CL-ML, CL, SC-SM	A-4	0-5	0-25	50-95	40-92	35-85	25-80	20-30	5-10
	45-72	Very channery silt loam, very gravelly loam, very channery loam, channery loam, silt loam	GC, CL, CL-ML, GC-GM, SC	A-4, A-2, A-1	0-5	0-25	45-92	35-85	25-80	20-70	20-30	5-10
Mardin----------	0-6	Channery silt loam	CL, GC, GM, ML	A-4	0	0-10	65-95	55-92	40-90	30-80	25-35	5-10
	6-17	Silt loam, channery silt loam, gravelly loam	CL, CL-ML, GC, SC-SM	A-4	0-1	0-10	65-95	55-92	40-90	30-80	15-25	5-10
	17-41	Channery silt loam, channery loam, very channery loam	CL, CL-ML, GC, SC	A-4, A-2, A-1	0-5	0-20	45-90	35-75	25-70	20-65	20-30	5-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Mardin----------	41-72	Channery loam, channery silt loam, very channery silt loam	CL, CL-ML, GC, SC	A-4, A-2, A-1	0-5	0-25	40-90	35-75	25-70	20-65	20-30	5-10
55A,55B,55C:												
Darien----------	0-7	Silt loam	ML, SM	A-4, A-7	0	0	65-98	50-96	40-90	30-85	35-45	5-15
	7-14	Silt loam, loam, gravelly channery silt loam, silty clay loam	CL, CL-ML, GC-GM, SC	A-4, A-6	0	0-5	65-98	50-96	40-90	30-85	25-35	5-15
	14-38	Silt loam, silty clay loam, channery gravelly silt loam, clay loam	CL, CL-ML, GC-GM, SC	A-4, A-6	0	0-5	65-98	50-96	45-90	35-85	25-35	5-15
	38-72	Gravelly silt loam, channery clay loam, very channery silt loam, loam, silty clay loam	CL, CL-ML, GC-GM, SC	A-4, A-2, A-6	0	0-10	45-92	30-85	25-80	20-75	25-35	5-15
56B,56C,56D:												
Chautauqua------	0-9	Silt loam	ML, CL-ML, SC-SM, SM	A-4, A-6	0	0-5	80-95	75-92	60-90	40-80	20-40	1-12
	9-36	Silt loam, gravelly silt loam, gravelly loam	SM, ML, GM, CL-ML	A-4	0	0-5	65-95	60-92	50-90	35-80	15-25	NP-5
	36-72	Gravelly loam, gravelly silt loam, very gravelly loam	SM, GM, GC-GM, CL-ML	A-4, A-2-4	0	0-5	55-90	45-75	35-70	25-65	15-25	NP-5
57A,57B,57C:												
Busti-----------	0-8	Silt loam	ML, SC-SM, SM	A-4, A-6	0	0-5	80-95	75-92	60-90	40-80	20-40	1-12
	8-13	Loam, silt loam	ML, CL-ML, SM	A-4, A-6	0	0-5	70-92	65-85	50-80	35-70	20-40	1-12
	13-39	Gravelly loam, silt loam, loam, gravelly silt loam	SM, ML, GM	A-4	0	0-5	70-92	65-85	50-80	35-70	15-25	NP-5
	39-72	Gravelly loam, gravelly silt loam	SM, ML, GM	A-4	0	0-5	65-90	50-75	40-70	30-65	15-25	NP-5

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
58B,58C:												
Rushford--------	0-4	Channery silt loam	ML, GM, CL-ML, SM	A-4, A-2, A-6	0	0-5	65-90	50-75	40-70	30-65	20-40	1-12
	4-21	Channery silt loam, channery loam, channery fine sandy loam	ML, GM, SC-SM, SM	A-4, A-2, A-6	0	0-10	65-90	50-75	35-70	25-65	20-40	1-12
	21-28	Channery loam, channery silt loam	SM, SC-SM, ML, GM	A-4, A-2, A-6	0	0-10	65-90	50-75	40-70	30-65	20-40	1-12
	28-36	Silt loam, silt	ML, CL-ML	A-4	0	0	100	92-100	80-100	65-95	0-20	NP-4
	36-72	Stratified silt loam to silty clay loam, silt	ML, CL-ML	A-4	0	0	100	92-100	80-100	65-95	0-20	NP-4
59B,59C,59D:												
Yorkshire-------	0-8	Channery silt loam	ML, GC, CL, SM	A-4, A-6	0	0-5	65-95	50-92	45-90	35-85	25-40	3-15
	8-19	Channery silt loam, channery loam, silty clay loam	ML, GC, CL, SC	A-4, A-6	0	0-10	65-95	50-92	40-90	30-85	25-40	3-15
	19-56	Channery silty clay loam, channery silt loam, channery loam, flaggy silt loam, very channery silty clay loam	CL, GC, SC, SC-SM	A-4, A-2-4, A-6	0	0-20	55-90	50-75	40-70	30-65	20-35	3-15
	56-72	Channery silt loam, channery loam, flaggy silt loam, very channery silty clay loam	GC, CL-ML, CL, GM	A-4, A-2-4, A-6	0	0-20	40-85	35-70	25-70	20-65	20-35	3-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
60A,60B,60C,60D: Napoli----------	0-9	Silt loam	CL, ML	A-6, A-7	0	0-5	65-95	50-92	45-90	35-85	35-45	10-20
	9-23	Silty clay loam, silt loam, very channery silt loam, channery clay loam	CL, GC, SC	A-6, A-2-6, A-7	0	0-10	55-92	40-85	35-80	30-75	25-45	10-20
	23-46	Channery silty clay loam, channery silt loam, very channery silty clay loam, flaggy loam	ML, GM, GC, CL	A-4, A-6, A-7	0	0-20	55-90	40-75	35-70	25-65	25-45	5-15
	46-72	Channery silty clay loam, very channery loam, flaggy silt loam	ML, GM, GC, CL	A-4, A-2, A-6, A-7	0	0-20	45-80	30-70	25-70	20-65	25-45	5-15
61B,61C,61D,61E 61F: Schuyler--------	0-6	Silt loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2	0	0-5	65-95	50-92	35-90	20-80	25-40	5-20
	6-35	Silt loam, channery silty clay loam, very channery loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-5	50-95	50-92	40-90	30-80	25-40	5-20
	35-72	Channery silty clay loam, very channery silt loam, channery loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-15	45-80	30-70	25-70	20-65	25-40	5-20
62B,62C,62D: Mardin----------	0-6	Channery silt loam	CL, GC, GM, ML	A-4	0	0-10	65-95	55-92	40-90	30-80	25-35	5-10
	6-17	Silt loam, channery silt loam, gravelly loam	CL, CL-ML, GC, SC-SM	A-4	0-1	0-10	65-95	55-92	40-90	30-80	15-25	5-10
	17-41	Channery silt loam, channery loam, very channery loam	CL, CL-ML, GC, SC	A-4, A-2, A-1	0-5	0-20	45-90	35-75	25-70	20-65	20-30	5-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Mardin----------	41-72	Channery loam, channery silt loam, very channery silt loam	CL, CL-ML, GC, SC	A-4, A-2, A-1	0-5	0-25	40-90	35-75	25-70	20-65	20-30	5-10
63B,63C,63D:												
Langford--------	0-7	Channery silt loam	CL, GM, ML, SM	A-4, A-2	0	0-10	65-95	55-92	40-90	25-80	25-35	5-10
	7-25	Silt loam, silty clay loam, channery silt loam, channery loam	CL, CL-ML, GC-GM, SC	A-4, A-2	0	0-10	60-95	55-92	40-90	30-80	15-25	5-10
	25-44	Channery silt loam, gravelly silt loam, channery silty clay loam, very channery loam	CL, GC, SC	A-6, A-2	0	0-25	45-90	30-75	25-70	20-65	25-35	10-15
	44-72	Gravelly silt loam, channery silt loam, channery silty clay loam, very channery loam	CL, GC, SC	A-6, A-2	0	0-25	45-90	30-75	25-70	20-65	25-35	10-15
64C:												
Mardin----------	0-6	Channery silt loam	CL, GC, GM, ML	A-4	0	0-10	65-95	55-92	40-90	30-80	25-35	5-10
	6-17	Silt loam, channery silt loam, gravelly loam	CL, CL-ML, GC, SC-SM	A-4	0-1	0-10	65-95	55-92	40-90	30-80	15-25	5-10
	17-41	Channery silt loam, channery loam, very channery loam	CL, CL-ML, GC, SC	A-4, A-2, A-1	0-5	0-20	45-90	35-75	25-70	20-65	20-30	5-10
	41-72	Channery loam, channery silt loam, very channery silt loam	CL, CL-ML, GC, SC	A-4, A-2, A-1	0-5	0-25	40-90	35-75	25-70	20-65	20-30	5-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
66B:												
Volusia---------	0-7	Channery silt loam	CL, CL-ML, GC, SC	A-4	0	0-10	65-95	60-92	50-90	35-80	15-25	5-10
	7-16	Channery loam, channery silt loam, silt loam	SC, GC-GM, CL-ML, CL	A-4	0-1	0-10	65-95	60-92	50-90	35-80	15-25	5-10
	16-45	Channery silt loam, channery loam, silty clay loam	SC, CL-ML, CL, SC-SM	A-4	0-5	0-25	50-95	40-92	35-85	25-80	20-30	5-10
	45-72	Very channery silt loam, very gravelly loam, very channery loam, channery loam, silt loam	GC, CL, CL-ML, GC-GM, SC	A-4, A-2, A-1	0-5	0-25	45-92	35-85	25-80	20-70	20-30	5-10
67A,67B:												
Dalton----------	0-9	Silt loam	ML	A-4	0	0-2	95-100	92-100	75-100	45-90	0-20	NP-4
	9-17	Silt loam, very fine sandy loam	ML, CL-ML	A-4	0	0-2	95-100	92-100	75-100	45-90	0-20	NP-6
	17-29	Silt loam, very fine sandy loam	ML, CL-ML	A-4	0	0-2	95-100	92-100	75-100	45-90	0-20	NP-6
	29-72	Gravelly silt loam, gravelly loam, channery loam, channery silt loam	GC-GM, GM, ML, SM	A-4, A-2	0	0-10	60-90	50-75	40-70	30-65	0-25	2-6
68A,68B,68C:												
Volusia---------	0-7	Channery silt loam	CL, CL-ML, GC, SC	A-4	0	0-10	65-95	60-92	50-90	35-80	15-25	5-10
	7-16	Channery loam, channery silt loam, silt loam	SC, GC-GM, CL-ML, CL	A-4	0-1	0-10	65-95	60-92	50-90	35-80	15-25	5-10
	16-45	Channery silt loam, channery loam, silty clay loam	SC, CL-ML, CL, SC-SM	A-4	0-5	0-25	50-95	40-92	35-85	25-80	20-30	5-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Volusia--------	45-72	Very channery silt loam, very gravelly loam, very channery loam, channery loam, silt loam	GC, CL, CL-ML, GC-GM, SC	A-4, A-2, A-1	0-5	0-25	45-92	35-85	25-80	20-70	20-30	5-10
69A,69B,69C:												
Erie------------	0-9	Channery silt loam	ML, GM, SM	A-4, A-2	0	0-10	65-95	50-92	40-90	30-80	30-40	5-10
	9-14	Silt loam, channery silty clay loam, channery silt loam, channery loam	CL, CL-ML, GC, SC	A-4, A-2	0	0-10	65-95	50-92	40-90	30-85	15-25	5-10
	14-45	Channery silt loam, channery silty clay loam, very channery loam	CL, GC, SC	A-6, A-2	0	0-25	45-90	30-75	25-70	20-65	25-35	10-15
	45-72	Channery silt loam, channery silty clay loam, very channery loam	SC, GC, CL	A-6, A-2	0	0-25	45-90	30-75	25-70	20-65	25-35	10-15
71E,71F:												
Mongaup---------	0-4	Channery silt loam	ML, GM, CL-ML, SM	A-4, A-2, A-1	1-5	0-5	65-95	50-92	30-90	15-80	0-20	NP-5
	4-27	Channery silt loam, gravelly silt loam, loam, gravelly sandy loam	SM, ML, GM, CL-ML	A-4, A-2, A-1	0-5	0-5	50-95	40-92	25-90	10-80	0-20	NP-5
	27-37	Unweathered bedrock			0	0	---	---	---	---	---	---
72B,72C,72D,72E, 72F:												
Towerville------	0-7	Silt loam	CL, CL-ML, SC, SC-SM	A-6, A-4, A-2	0	0-5	65-95	50-92	40-90	30-80	25-40	5-20
	7-23	Silt loam, channery loam, channery silty clay loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-15	65-95	50-92	40-90	30-85	25-40	5-20

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Towerville------	23-32	Channery silty clay loam, very channery silt loam, loam	CL, CL-ML, GC, SC	A-6, A-4	0	0-15	45-92	30-85	25-80	20-75	25-40	5-20
	32-42	Weathered bedrock			0	0	---	---	---	---	---	---
73B,73C:												
Gretor----------	0-8	Channery silt loam	GM, MH, ML, SM	A-7, A-6	0-1	0-10	65-95	55-92	50-90	30-85	35-55	10-20
	8-21	Channery silt loam, channery loam, clay loam, silty clay loam	GM, ML, SM	A-7, A-6	0-1	0-10	65-95	55-92	50-90	30-85	35-50	10-20
	21-25	Channery silty clay loam, clay loam, channery silt loam, channery loam	CL-ML, ML, SC-SM, SM	A-4	0-1	0-15	65-95	55-92	50-90	30-85	20-30	1-7
	25-29	Unweathered bedrock			0	0	---	---	---	---	---	---
74:												
Ashville--------	0-9	Silt loam	ML, OL	A-5, A-6, A-7	0	0	85-100	75-100	60-100	35-90	40-50	5-15
	9-44	Silt loam, channery silt loam, channery loam, silty clay loam	CL, CL-ML	A-4, A-6	0	0	85-100	75-100	60-100	40-95	20-35	5-15
	44-72	Channery silt loam, very gravelly silt loam, gravelly loam, fine sandy loam	SC, GC, CL-ML, CL	A-4, A-2, A-6	0	0-5	50-92	40-85	25-80	15-70	20-35	5-15
75:												
Alden-----------	0-6	Mucky silt loam	OL, ML	A-5, A-7	0	0	85-100	75-100	60-100	35-90	40-50	5-15
	6-25	Silt loam, silty clay loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	85-100	75-100	60-100	35-95	20-35	5-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Alden-----------	25-72	Silt loam, silty clay loam, loam, gravelly fine sandy loam, gravelly loam	SC, GC, CL-ML, CL	A-4, A-2, A-6	0	0-5	65-95	50-92	35-90	20-85	20-35	5-15
76A,76B,76C:												
Orpark----------	0-8	Silt loam	ML, OL	A-7, A-5, A-4	0	0	90-100	85-100	65-100	50-95	35-49	6-15
	8-22	Silt loam, silty clay loam, channery silt loam	ML, CL	A-6, A-4	0	0	75-100	70-100	65-100	50-95	30-40	6-15
	22-24	Silt loam, silty clay loam, channery silty clay loam, channery silt loam	ML, CL, SC, SM	A-6, A-4	0	0-5	65-100	50-100	45-100	35-95	30-40	6-15
	24-26	Extremely channery silty clay loam, very channery silt loam	GM	A-2-6, A-2, A-4	0-7	0-55	50-100	15-100	10-100	5-95	30-40	6-15
	26-36	Unweathered bedrock			0	0	---	---	---	---	---	---
77A:												
Chippewa--------	0-6	Silt loam	ML, OL	A-5, A-7	0	0-5	65-100	55-100	40-95	30-90	40-50	5-15
	6-19	Silt loam, silty clay loam, channery silt loam, loam, clay loam, channery silty clay loam	CL, CL-ML, GM, ML, SC-SM	A-4	0-1	0-10	65-100	50-100	40-95	30-90	25-35	5-10
	19-41	Channery silt loam, very channery loam, channery fine sandy loam, channery silty clay loam	CL, CL-ML, GC, SC	A-2, A-4	0-2	0-15	55-85	35-70	25-70	15-65	15-25	5-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Chippewa	41-72	Channery silt loam, very channery loam, channery fine sandy loam, channery silty clay loam	GC, CL-ML, GM, ML, SM	A-2, A-4	0-2	0-15	55-85	35-70	25-70	15-65	25-35	5-10
78A,78B,78C,78D: Hornell	0-8	Silt loam	ML, CL	A-7, A-6	0	0	65-100	50-100	40-100	30-95	35-49	10-22
	8-28	Silty clay loam, silty clay, channery silty clay loam, clay	CL, CH, GC, ML	A-7, A-6	0	0-5	65-98	50-98	45-95	40-85	35-55	10-30
	28-34	Channery silty clay loam, very channery silty clay, silty clay loam, channery clay	CL, CH, GC, ML	A-7, A-6, A-2	0	0-5	45-92	30-85	25-80	20-75	35-55	10-30
	34-44	Unweathered bedrock			0	0	---	---	---	---	---	---
78F: Hornell	0-8	Silt loam	ML, CL	A-7, A-6	0	0	65-100	50-100	40-100	30-95	35-49	10-22
	8-28	Silty clay loam, silty clay, channery silty clay loam, clay	CL, CH, GC, ML	A-7, A-6	0	0-5	65-98	50-98	45-95	40-85	35-55	10-30
	28-34	Channery silty clay loam, very channery silty clay, silty clay loam, channery clay	CL, CH, GC, ML	A-7, A-6, A-2	0	0-5	45-92	30-85	25-80	20-75	35-55	10-30
	34-44	Unweathered bedrock			0	0	---	---	---	---	---	---
Hudson	0-7	Silt loam	ML, CL-ML, CL, OL	A-6, A-4, A-7	0	0	75-100	65-100	50-100	35-95	25-48	5-19
	7-16	Silt loam, silty clay loam, silty clay	CH, CL	A-7, A-6	0	0	75-100	65-100	50-100	30-95	35-65	15-35

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Hudson----------	16-38	Silty clay, silty clay loam	CH, CL	A-7, A-6	0	0	90-100	85-100	70-100	60-95	35-65	15-35
	38-72	Silty clay, silt loam, stratified silty clay to silty clay loam to silt	CH, CL	A-7, A-6	0	0	90-100	85-100	70-100	60-95	35-65	15-35
79B,79C,79D,79E, 79F:												
Mongaup---------	0-4	Channery silt loam	ML, GM, CL-ML, SM	A-4, A-2, A-1	0-1	0-5	65-95	50-92	30-90	15-80	0-20	NP-5
	4-27	Channery silt loam, gravelly silt loam, loam, gravelly sandy loam	SM, ML, GM, CL-ML	A-4, A-2, A-1	0-5	0-5	50-95	40-92	25-90	10-80	0-20	NP-5
	27-37	Unweathered bedrock			0	0	---	---	---	---	---	---
80A,80B,80C:												
Fremont---------	0-9	Silt loam	CL, ML	A-6, A-7	0	0-10	65-92	55-85	45-80	35-75	35-45	10-20
	9-39	Silt loam, silty clay loam, channery silty clay loam	CL, GC, SC	A-6	0	0-10	65-92	55-85	45-80	35-75	25-40	10-20
	39-72	Channery silty clay loam, channery silt loam, very channery silty clay loam	CL, CL-ML, GC, SC-SM	A-4, A-2, A-1, A-6	0	0-10	45-85	30-70	25-70	20-65	25-40	5-15
81B,81C,81D,81E:												
Varysburg-------	0-5	Gravelly silt loam	CL-ML, GC, GM, ML, SM	A-4, A-2, A-1	0	0-10	55-92	45-85	30-80	15-70	20-30	2-10
	5-22	Gravelly loam, gravelly silt loam, very gravelly loam, very gravelly sandy loam	SC-SM, GM, ML, SM	A-4, A-2, A-1	0	0-10	55-92	45-85	30-80	15-70	0-30	NP-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
Varysburg-------	22-33	Very gravelly loam, very gravelly sandy clay loam, very gravelly sandy loam	GC-GM, GM, GW-GM, ML, SM	A-1, A-2, A-4	0	0-10	45-92	30-85	15-75	10-60	0-30	NP-10
	33-48	Silty clay loam, silty clay	CL, CL-ML	A-4, A-6	0	0	100	96-100	85-100	75-95	15-30	5-15
	48-72	Silty clay, clay, stratified silty clay to silt to clay, silty clay loam	CL, CL-ML	A-4, A-6	0	0	100	96-100	80-100	70-95	15-30	5-15
82F:												
Rock outcrop----	0-60	Unweathered bedrock			0	0	---	---	---	---	---	---
Manlius---------	0-4	Channery silt loam	ML, GM, CL-ML, SM	A-4, A-2	0	0-15	55-90	50-75	40-70	30-65	25-35	4-10
	4-23	Channery silt loam, very channery silt loam, very channery loam	GM, GC-GM	A-4, A-2, A-1	0	0-25	45-75	35-65	25-60	20-55	25-35	4-10
	23-34	Very channery silt loam, channery loam	GM, GC-GM	A-2, A-1, A-4	0-1	0-25	40-75	25-55	15-50	10-45	25-35	4-10
	34-44	Unweathered bedrock			0	0	---	---	---	---	---	---
84B,84C:												
Elko------------	0-6	Silt loam	CL, CL-ML	A-4	0	0-5	65-95	50-92	30-90	15-80	20-40	4-15
	6-26	Channery silt loam, channery loam, loam, channery silty clay loam	CL, CL-ML, GC, SC-SM	A-4, A-7, A-6	0	0-10	55-95	45-92	35-90	25-85	20-45	4-25
	26-64	Channery silt loam, very channery loam, channery silty clay loam	GC, CL-ML, CL, SC-SM	A-6, A-4, A-7	0	0-15	55-95	45-92	25-90	10-85	20-45	4-25

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	Percentage passing sieve number--: 10	Percentage passing sieve number--: 40	Percentage passing sieve number--: 200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Elko------------	64-72	Very channery loam, extremely channery loam, very channery silt loam, channery sandy loam, extremely channery silty clay loam	GC, CL, CL-ML, GC-GM, SC	A-2, A-4, A-6, A-7	0	0-20	45-90	25-75	10-70	5-65	20-45	4-20
85B,85C,85D:												
Onoville--------	0-8	Silt loam	CL, CL-ML	A-4, A-6	0	0	65-95	50-92	40-90	30-80	20-40	4-15
	8-22	Silt loam, loam, silty clay loam, channery silt loam, very flaggy loam	CL, CL-ML, GC, SC-SM	A-6, A-4, A-7	0	0-5	55-95	45-92	35-90	25-85	20-45	4-25
	22-65	Channery clay loam, channery loam, channery silty clay loam, very flaggy loam	CL, CL-ML, GC, SC-SM	A-6, A-4, A-7	0	0-10	55-95	45-92	35-90	25-85	20-45	4-25
	65-72	Channery clay loam, channery silty clay loam, channery loam, very channery silt loam, very channery clay loam, very flaggy loam	SC, GC-GM, CL-ML, CL	A-6, A-4, A-2, A-7	0	0-10	45-90	25-75	15-70	10-65	20-45	4-20
86B,86C,86D:												
Eldred----------	0-3	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	65-95	50-92	45-90	35-85	20-40	4-15
	3-14	Silty clay loam, channery silt loam, loam	CL, ML	A-6, A-7	0	0-5	65-95	50-92	40-90	30-85	35-45	10-25
	14-42	Channery silty clay loam, channery silt loam, channery clay loam	ML, GM, SM	A-4, A-6, A-7	0	0-10	65-95	50-92	45-90	35-85	30-45	5-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Eldred----------	42-72	Channery silty clay loam, very channery silt loam, channery clay loam	ML, GM, SM	A-4, A-2, A-6, A-7	0	0-15	45-92	30-85	25-80	20-75	30-45	5-15
87B,87C:												
Shongo----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	65-95	50-92	45-90	35-85	25-40	5-15
	6-24	Silt loam, silty clay loam, channery loam	CL, CL-ML	A-4, A-6	0-3	0-5	55-95	45-92	40-90	30-85	20-40	5-15
	24-56	Channery silty clay loam, clay loam, silt loam, channery loam	CL, CL-ML	A-6, A-4, A-7-6	0-3	0-10	50-95	45-92	40-90	30-85	20-45	5-25
	56-72	Channery silty clay loam, very channery clay loam, very channery silt loam, channery loam	GC, CL-ML, CL	A-6, A-4, A-7-6	0-3	0-10	50-95	45-92	40-90	30-85	20-45	5-25
88A,88B,88C,88D:												
Ivory-----------	0-6	Silt loam	ML	A-7, A-4, A-6, A-7-6	0	0-8	70-95	60-92	55-90	40-85	35-50	5-20
	6-14	Channery silt loam, channery silty clay loam, silty clay, clay	CL, CH, ML	A-7, A-6, A-4	0	0-8	70-95	60-92	55-90	40-85	30-55	5-30
	14-48	Channery silty clay loam, channery silty clay, clay	CL, CH, ML, SC	A-7, A-6, A-4	0	0-15	70-95	60-92	55-90	45-85	30-55	5-30
	48-72	Channery silty clay loam, channery silty clay, very channery clay	CL, CH, GC, ML	A-7, A-6, A-4, A-2	0	0-20	45-90	35-75	25-70	20-70	30-55	5-30

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
89B,89C:												
Portville-------	0-7	Silty clay loam	CL, CL-ML	A-4, A-6	0	0-5	80-98	75-96	60-90	40-85	25-40	5-15
	7-22	Channery silt loam, silty clay loam, loam	CL, CL-ML	A-4, A-6	0-1	0-5	55-95	45-92	35-90	25-85	20-40	5-15
	22-50	Channery silt loam, channery silty clay loam, loam, clay loam	GC, CL, CL-ML	A-6, A-4, A-7-6	0-3	0-10	70-95	45-92	35-90	25-85	20-45	5-25
	50-72	Channery silty clay loam, very gravelly silty clay loam, very channery silt loam, gravelly clay loam, channery loam	GC, CL-ML, CL	A-6, A-4, A-7-6	0-5	0-10	45-90	30-75	25-70	20-70	20-45	5-25
90A,90B:												
Brinkerton------	0-7	Silt loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-100	70-100	55-95	25-40	5-15
	7-25	Silty clay loam, silt loam	CL, CL-ML	A-4, A-6	0	0-5	90-100	85-100	70-100	55-95	20-40	5-15
	25-45	Channery silt loam, clay loam, channery loam, channery silty clay loam	CL, CL-ML	A-6, A-4, A-7	0	0-10	70-100	60-100	50-100	35-95	20-45	5-25
	45-72	Channery silt loam, extremely channery loam, silt loam, very gravelly silty clay loam	CL, CL-ML, GC, SC	A-6, A-4, A-7	0	0-20	35-92	20-85	15-80	10-75	20-45	5-25

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
91A:												
Palms-----------	0-12	Muck	PT	A-8	0	0	---	---	---	---	---	NP
	12-32	Muck	PT	A-8	0	0	---	---	---	---	---	NP
	32-72	Fine sandy loam, gravelly loam, clay loam, silty clay loam	SC, CL-ML, CL, SC-SM	A-6, A-4, A-2, A-7	0	0-10	70-100	65-100	40-100	25-95	20-45	5-20
92:												
Carlisle--------	0-72	Muck	PT	A-8	0	0	---	---	---	---	---	NP
93:												
Saprists, inundated------	0-38	Muck	PT	A-8	0	0	---	---	---	---	---	NP
	38-72	Gravelly loam, fine sandy loam, very gravelly loamy sand, clay loam, silty clay	SC, CL-ML, CL, SC-SM	A-6, A-4, A-2, A-7	0	0-10	70-100	65-100	40-100	25-95	20-45	5-20
94B,94C:												
Frewsburg-------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0	65-95	50-92	40-90	30-80	20-40	4-15
	6-18	Channery silty clay loam, channery silt loam, flaggy loam, silt loam, clay loam	CL, CL-ML, GC, SC-SM	A-6, A-4	0	0-5	65-95	50-92	40-90	30-85	20-40	4-20
	18-38	Channery silty clay loam, extremely channery clay loam, channery loam, very channery silt loam	CL, CL-ML, GC, SC-SM	A-6, A-4	0	0-10	35-90	20-75	15-70	10-65	20-40	4-20
	38-48	Unweathered bedrock			0	0	---	---	---	---	---	---

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
95B,95C,95D,95E 95F:												
Mandy-----------	0-2	Channery silt loam	SM, CL-ML, GM, ML	A-4	0	0-15	70-92	65-85	50-80	35-70	25-35	4-10
	2-24	Channery silt loam, very channery silt loam, extremely channery loam	GM, GC-GM	A-2, A-4	0-5	0-30	40-85	30-70	25-70	20-65	25-35	4-10
	24-33	Extremely flaggy silt loam, very channery silt loam, channery loam	GM, GC-GM	A-2, A-4	0-10	0-40	40-85	30-70	25-65	20-65	25-35	4-10
	33-43	Unweathered bedrock			0	0	---	---	---	---	---	---
96B,96C,96D,96E 96F:												
Carrollton------	0-2	Channery silt loam	CL, CL-ML, GC, SC-SM	A-4, A-6	0	0-5	65-90	50-75	40-70	30-65	20-40	4-15
	2-23	Channery silt loam, channery silty clay loam, channery loam, flaggy clay loam	CL, CL-ML, GC, SC-SM	A-4, A-6	0-2	0-10	65-90	50-75	40-70	30-65	20-40	4-15
	23-30	Channery silt loam, channery silty clay loam, very channery loam, flaggy silt loam	GC, CL-ML, CL, SC-SM	A-4, A-6	0-5	0-15	50-90	40-75	35-65	25-65	20-40	4-15
	30-40	Unweathered bedrock			0	0	---	---	---	---	---	---
97B,97C,97D,97E, 97F:												
Kinzua----------	0-3	Channery silt loam	CL, CL-ML, GC, SC-SM	A-4, A-6	0	0-5	65-95	55-92	40-90	30-80	20-40	4-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Kinzua----------	3-45	Channery silt loam, very channery silt loam, silty clay loam, channery loam	CL, CL-ML, GC, SC-SM	A-4, A-6	0-2	0-10	65-95	55-92	40-90	30-85	20-40	4-15
	45-72	Very channery silt loam, channery silty clay loam, very channery loam, clay loam	GC, CL-ML, CL, SC-SM	A-2, A-1-b, A-4, A-6	0-5	0-10	45-92	35-85	25-80	20-75	20-40	4-15
98D,98E:												
Kinzua----------	0-3	Channery silt loam	CL, CL-ML, GC, SC-SM	A-4, A-6	0	0-5	65-95	55-92	40-90	30-80	20-40	4-15
	3-45	Channery silt loam, very channery silt loam, silty clay loam, channery loam	CL, CL-ML, GC, SC-SM	A-4, A-6	0-2	0-10	65-95	55-92	40-90	30-85	20-40	4-15
	45-72	Very channery silt loam, channery silty clay loam, very channery loam, clay loam	GC, CL-ML, CL, SC-SM	A-2, A-1-b, A-4, A-6	0-5	0-10	45-92	35-85	25-80	20-75	20-40	4-15
99B,99C,99D:												
Buchanan--------	0-6	Silt loam	CL, CL-ML	A-4, A-6	0	0-10	60-100	45-100	30-100	15-90	20-40	4-15
	6-33	Channery silt loam, channery clay loam, gravelly loam, sandy clay loam	CL, CL-ML, SC-SM	A-6, A-4, A-7	0-5	0-10	60-100	45-100	40-100	20-90	20-45	4-25
	33-45	Channery silt loam, channery loam, very gravelly clay loam, sandy clay loam	SC, CL, CL-ML, GC, SC-SM	A-6, A-4, A-7	0-5	0-10	45-95	30-92	25-90	10-80	20-45	4-25

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Buchanan--------	45-72	Very gravelly silt loam, channery silt loam, clay loam, gravelly loam, sandy clay loam	GC, CL, CL-ML, GC-GM, SC	A-2, A-4, A-6, A-7	0-5	0-20	45-95	30-92	25-90	10-80	20-45	4-20
100:												
Udorthents------	0-4	Gravelly loam, gravelly loamy sand, gravelly sandy loam, loamy sand	SC-SM, GM, ML, SM	A-4, A-2, A-1	0	0-15	60-80	55-75	30-75	10-65	0-25	NP-8
	4-70	Very gravelly loamy sand, very gravelly silty clay, very gravelly loam, gravelly silt loam, gravelly silty clay, loamy sand	GC-GM, GM, GW-GM, SC-SM, SM	A-2, A-1, A-4	0	0-15	30-60	25-55	15-55	5-50	0-25	NP-8
101:												
Udorthents, refuse substratum-----	0-24	Gravelly loam,	SC, ML, CL, SM	A-4, A-2	0	0-5	60-100	55-100	30-100	10-90	0-30	NP-15
	24-70	Variable			0	0	---	---	---	---	---	---
102C:												
Mandy-----------	0-2	Channery silt loam	SM, CL-ML, GM, ML	A-4	0	0-15	70-92	65-85	50-80	35-70	25-35	4-10
	2-24	Channery silt loam, very channery silt loam, extremely channery loam	GM, GC-GM	A-2, A-4	0-5	0-30	40-85	30-70	25-70	20-65	25-35	4-10
	24-33	Extremely flaggy silt loam, very channery silt loam, channery loam	GM, GC-GM	A-2, A-4	0-10	0-40	40-85	30-70	25-65	20-65	25-35	4-10

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification		Fragments		Percentage passing sieve number--				Liquid limit	Plas- ticity index
			Unified	AASHTO	>10 inches	3-10 inches	4	10	40	200		
	In				Pct	Pct					Pct	
Mandy-----------	33-43	Unweathered bedrock			0	0	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			0	0	---	---	---	---	---	---
103C:												
Knapp Creek-----	0-3	Moderately decomposed plant material	OL, PT	A-4, A-8	0	0	---	---	---	---	---	---
	3-11	Gravelly loamy sand	SC-SM, GM, ML, SM	A-1, A-2, A-4	0	0-15	45-95	25-92	10-75	5-50	15-30	NP-8
	11-22	Very gravelly sandy loam, gravelly sandy loam, loam, extremely gravelly loamy sand, gravelly fine sandy loam	SC-SM, GM, ML, SC, SM	A-1, A-2, A-4	0	0-20	45-95	25-92	10-75	5-50	15-30	NP-8
	22-48	Extremely gravelly sandy loam, very gravelly loamy sand, very gravelly loam	SP-SC, GC, GM, SC, SM	A-1, A-2, A-4	0	0-40	45-95	25-92	10-75	5-50	15-30	NP-8
	48-58	Extremely gravelly sandy loam, extremely gravelly loamy sand, very gravelly loam	GP-GC	A-1	0	0-40	40-70	25-55	10-50	0-40	15-30	NP-8
	58-68	Weathered bedrock			0	0	---	---	---	---	---	---
Rock outcrop----	0-60	Unweathered bedrock			0	0	---	---	---	---	---	---
104B,104C,104D, 104E:												
Flatiron--------	0-1	Moderately decomposed plant material	OL, PT	A-4, A-8	1-5	0-5	---	---	---	---	---	---

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Flatiron--------	1-2	Loamy fine sand, loam, fine sandy loam, gravelly sandy loam, gravelly loamy sand	SM, ML, GM, GC-GM	A-2, A-4	1-5	0-5	65-95	50-92	25-85	10-70	20-40	1-12
	2-36	Gravelly fine sandy loam, gravelly loamy fine sand, loam	SM, ML, GM, GC-GM	A-2, A-1, A-4	0-3	0-10	65-95	50-92	25-85	10-70	15-25	NP-5
	36-47	Very gravelly sandy loam, gravelly loam, loamy sand	GM, GC-GM, ML, SM	A-1, A-2, A-4	0-5	0-10	45-92	30-85	15-75	5-60	15-25	NP-5
	47-60	Silty clay loam, gravelly loam, loamy sand, very gravelly sandy loam	ML, GM, GC-GM, SM	A-4, A-2, A-1	0-5	0-10	45-92	30-85	15-80	5-75	15-25	NP-5
	60-72	Gravelly loam, very gravelly sandy loam, loamy sand	SM, ML, GM, GC-GM	A-4, A-2, A-1	0-5	0-10	45-92	30-85	15-75	5-60	15-25	NP-5
108D,108E,108F:												
Hartleton-------	0-10	Channery silt loam	ML, SM	A-4	0	0-20	55-90	50-80	40-80	30-70	20-40	NP-7
	10-38	Channery silt loam, very channery silt loam, very channery loam, channery silty clay loam	GM, ML, SM	A-2, A-4	0-5	0-40	35-85	30-65	25-60	20-60	20-30	NP-7
	38-58	Extremely channery silt loam, very channery loam, very channery silt loam	GM, SM	A-1, A-2	0-5	5-40	35-65	20-45	15-40	10-35	20-30	NP-7
	58-68	Unweathered bedrock			0	0	---	---	---	---	---	---

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments >10 inches	Fragments 3-10 inches	Percentage passing sieve number-- 4	10	40	200	Liquid limit	Plas- ticity index
	In				Pct	Pct					Pct	
131:												
Lamson----------	0-16	Very fine sandy loam	ML, SM	A-4	0	0	95-100	90-100	70-100	35-90	0-20	NP-4
	16-35	Fine sandy loam, very fine sandy loam	SM, ML	A-4	0	0	92-100	75-100	55-95	30-65	0-20	NP-4
	35-72	Loamy fine sand, stratified fine sandy loam to loamy fine sand, fine sand, very fine sand, silt loam	SM, ML	A-2, A-4	0	0	92-100	75-100	45-100	15-90	0-14	NP
132B,132C:												
Wiscoy----------	0-7	Channery silt loam	CL, CL-ML, GC, SC	A-4	0	0-10	70-92	60-85	50-80	35-70	15-25	5-10
	7-12	Silt loam, channery loam	CL, CL-ML, GC-GM, SC	A-4	0	0-10	65-92	60-85	50-80	35-70	15-25	5-10
	12-36	Channery silt loam, channery loam, silty clay loam	CL, CL-ML, SC, SC-SM	A-4	0	0-15	70-92	60-85	50-80	35-75	20-30	5-10
	36-72	Silt loam, silty clay loam, silty clay, loam	CL, CL-ML, SC-SM	A-6, A-4, A-7	0	0	95-100	92-100	75-100	55-95	15-45	5-25
135C,135D,135E:												
Hudson----------	0-7	Silt loam	ML, CL-ML, CL, OL	A-6, A-4, A-7	0	0	75-100	65-100	50-100	35-95	25-48	5-19
	7-16	Silt loam, silty clay loam, silty clay	CH, CL	A-7, A-6	0	0	75-100	65-100	50-100	30-95	35-65	15-35
	16-38	Silty clay, silty clay loam	CH, CL	A-7, A-6	0	0	90-100	85-100	70-100	60-95	35-65	15-35
	38-72	Silty clay, silt loam, stratified silty clay to silty clay loam to silt	CH, CL	A-7, A-6	0	0	90-100	85-100	70-100	60-95	35-65	15-35

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
140D,140E:												
Dunkirk---------	0-4	Silt loam	CL, CL-ML	A-4	0	0	95-100	92-100	65-100	35-90	20-30	5-10
	4-14	Silt loam, very fine sandy loam, fine sandy loam	CL, CL-ML	A-4	0	0	95-100	92-100	65-100	35-90	20-30	5-10
	14-48	Silty clay loam, silt loam, very fine sandy loam	CL, CL-ML	A-4, A-6	0	0	95-100	92-100	75-100	45-95	20-30	5-15
	48-72	Silt loam, silt, very fine sand, silty clay loam	ML, SM	A-4	0	0	95-100	92-100	55-100	30-95	0-15	NP-4
185C,185D:												
Onoville--------	0-8	Silt loam	CL, CL-ML	A-4, A-6	1-5	0-5	65-95	50-92	40-90	30-80	20-40	4-15
	8-22	Silt loam, loam, silty clay loam, channery silt loam, very flaggy loam	CL, CL-ML, GC, SC-SM	A-6, A-4, A-7	0	0-5	55-95	45-92	35-90	25-85	20-45	4-25
	22-65	Channery clay loam, channery loam, channery silty clay loam, very flaggy loam	CL, CL-ML, GC, SC-SM	A-6, A-4, A-7	0	0-10	55-95	45-92	35-90	25-85	20-45	4-25
	65-72	Channery clay loam, channery silty clay loam, channery loam, very channery silt loam, very channery clay loam, very flaggy loam	SC, GC-GM, CL-ML, CL	A-6, A-4, A-2, A-7	0	0-10	45-90	25-75	15-70	10-65	20-45	4-20
187B,187C:												
Shongo----------	0-6	Silt loam	CL, CL-ML	A-4, A-6	1-5	0-5	65-95	50-92	45-90	35-85	25-40	5-15
	6-24	Silt loam, silty clay loam, channery loam	CL, CL-ML	A-4, A-6	0-3	0-5	55-95	45-92	40-90	30-85	20-40	5-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Shongo----------	24-56	Channery silty clay loam, clay loam, silt loam, channery loam	CL, CL-ML	A-6, A-4, A-7-6	0-3	0-10	50-95	45-92	40-90	30-85	20-45	5-25
	56-72	Channery silty clay loam, very channery clay loam, very channery silt loam, channery loam	GC, CL-ML, CL	A-6, A-4, A-7-6	0-3	0-10	50-95	45-92	40-90	30-85	20-45	5-25
188B,188C,188D:												
Cavode----------	0-7	Silt loam	ML	A-7, A-4, A-6, A-7-6	0	0-5	85-95	75-92	65-90	50-85	35-50	5-20
	7-14	Silt loam, channery silty clay loam, silty clay	CL, CH, ML	A-7, A-6, A-4	0	0-5	85-95	75-92	65-90	50-85	30-55	5-30
	14-44	Silty clay loam, channery silty clay, clay	CL, CH, ML	A-7, A-6, A-4	0	0-10	85-95	75-92	65-90	50-85	30-55	5-30
	44-68	Channery silty clay, very channery silty clay loam, channery clay, silty clay	GC, CL, CH, ML	A-7, A-6, A-4, A-2	0	0-20	45-100	35-100	25-100	20-95	30-55	5-30
	68-72	Unweathered bedrock			0	0	---	---	---	---	---	---
189B,189C:												
Portville-------	0-7	Silty clay loam	CL, CL-ML	A-4, A-6	1-5	0-5	80-98	75-96	60-90	40-85	25-40	5-15
	7-22	Channery silt loam, silty clay loam, loam	CL, CL-ML	A-4, A-6	0-1	0-5	55-95	45-92	35-90	25-85	20-40	5-15
	22-50	Channery silt loam, channery silty clay loam, loam, clay loam	GC, CL, CL-ML	A-6, A-4, A-7-6	0-3	0-10	70-95	45-92	35-90	25-85	20-45	5-25

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Portville-------	50-72	Channery silty clay loam, very gravelly silty clay loam, very channery silt loam, gravelly clay loam, channery loam	GC, CL-ML, CL	A-6, A-4, A-7-6	0-5	0-10	45-90	30-75	25-70	20-70	20-45	5-25
195C,195D,195E:												
Mandy-----------	0-2	Channery silt loam	SM, CL-ML, GM, ML	A-4	1-5	0-15	70-92	65-85	50-80	35-70	25-35	4-10
	2-24	Channery silt loam, very channery silt loam, extremely channery loam	GM, GC-GM	A-2, A-4	0-5	0-30	40-85	30-70	25-70	20-65	25-35	4-10
	24-33	Extremely flaggy silt loam, very channery silt loam, channery loam	GM, GC-GM	A-2, A-4	0-10	0-40	40-85	30-70	25-65	20-65	25-35	4-10
	33-43	Unweathered bedrock			0	0	---	---	---	---	---	---
199C,199D:												
Buchanan--------	0-6	Silt loam	CL, CL-ML	A-4, A-6	1-5	0-10	60-100	45-100	30-100	15-90	20-40	4-15
	6-33	Channery silt loam, channery clay loam, gravelly loam, sandy clay loam	CL, CL-ML, SC-SM	A-6, A-4, A-7	0-5	0-10	60-100	45-100	40-100	20-90	20-45	4-25
	33-45	Channery silt loam, channery loam, very gravelly clay loam, sandy clay loam	SC, CL, CL-ML, GC, SC-SM	A-6, A-4, A-7	0-5	0-10	45-95	30-92	25-90	10-80	20-45	4-25
	45-72	Very gravelly silt loam, channery silt loam, clay loam, gravelly loam, sandy clay loam	GC, CL, CL-ML, GC-GM, SC	A-2, A-4, A-6, A-7	0-5	0-20	45-95	30-92	25-90	10-80	20-45	4-20

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
289B,289C,289D, 289E,289F:												
Ceres-----------	0-7	Channery silt loam	CL, GM, ML, SM	A-4, A-2	0	0-5	75-95	65-92	40-90	25-80	5-15	2-15
	7-29	Channery silt loam, very channery silty clay loam, clay loam, channery loam	GC, CL, GM, SC	A-4, A-2, A-6	0-3	0-10	65-92	50-85	40-80	30-75	23-40	2-17
	29-44	Extremely channery silt loam, extremely channery silty clay loam, extremely channery loam	GM, SM	A-2, A-1	0-5	0-25	35-60	15-30	8-30	5-30	25-40	2-13
	44-54	Unweathered bedrock			0	0	---	---	---	---	---	---
400:												
Wakeville-------	0-10	Silt loam	CL, CL-ML, ML	A-4, A-6	0	0	100	92-100	75-100	45-90	15-35	2-15
	10-43	Silt loam, very fine sandy loam	CL, CL-ML, ML	A-4, A-6	0	0	100	92-100	75-100	45-90	15-35	2-15
	43-52	Silt loam, very gravelly loamy sand, fine sandy loam, gravelly very fine sandy loam	CL, ML, SC-SM, SM	A-4, A-2, A-6	0	0-5	50-100	40-100	20-100	5-90	15-25	NP-15
	52-72	Very gravelly loamy sand, loam, fine sandy loam, gravelly very fine sandy loam	SP-SC, CL, ML, SC-SM, SM	A-2, A-4, A-6	0	0-5	50-100	40-100	20-95	5-75	15-25	NP-15
496B,496C,496D, 496E,496F:												
Gilpin----------	0-4	Channery silt loam	CL, CL-ML, GC, SC	A-4, A-2, A-6	0	0-15	60-95	45-92	35-90	25-80	20-40	4-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Gilpin----------	4-26	Channery silt loam, channery silty clay loam, silty clay loam, loam, clay loam	CL, CL-ML, GC, SC	A-4, A-2, A-6	0-5	0-20	60-95	45-92	35-90	25-85	20-40	4-15
	26-35	Very channery silt loam, very channery silty clay loam, channery loam, extremely channery loam	GC, GC-GM	A-4, A-2, A-1, A-6	0-5	0-30	35-75	20-55	15-50	10-50	20-40	4-15
	35-45	Unweathered bedrock			0	0	---	---	---	---	---	---
497D,497E,497F:												
Rayne-----------	0-4	Channery silt loam	ML, GM, CL, SM	A-4	0	0-10	60-95	50-92	40-90	30-80	20-40	2-14
	4-38	Channery silt loam, channery silty clay loam, loam, channery clay loam	CL, GC, GM, ML	A-4, A-2, A-6	0-3	0-15	60-95	50-92	40-90	30-85	20-40	2-15
	38-72	Channery silt loam, channery silty clay loam, channery clay loam, very channery loam	ML, GM, SM	A-4, A-2, A-1	0-5	0-20	45-90	30-75	25-70	20-65	20-35	NP-10
498E:												
Rayne-----------	0-4	Channery silt loam	ML, GM, CL, SM	A-4	0	0-10	60-95	50-92	40-90	30-80	20-40	2-14
	4-38	Channery silt loam, channery silty clay loam, loam, channery clay loam	CL, GC, GM, ML	A-4, A-2, A-6	0-3	0-15	60-95	50-92	40-90	30-85	20-40	2-15

Table 21.—Engineering Properties—Continued

Map symbol and soil name	Depth	USDA texture	Classification: Unified	Classification: AASHTO	Fragments: >10 inches	Fragments: 3-10 inches	Percentage passing sieve number--: 4	10	40	200	Liquid limit	Plasticity index
	In				Pct	Pct					Pct	
Rayne	38-72	Channery silt loam, channery silty clay loam, channery clay loam, very channery loam	ML, GM, SM	A-4, A-2, A-1	0-5	0-20	45-90	30-75	25-70	20-65	20-35	NP-10
800:												
Holderton	0-6	Silt loam	CL, CL-ML, ML	A-4	0	0	90-100	85-100	55-100	35-90	25-35	5-10
	6-36	Fine sandy loam, loam, silt loam, gravelly fine sandy loam	SM, SC-SM, ML, CL-ML	A-4, A-2	0	0	75-100	70-100	50-100	30-90	20-25	2-5
	36-72	Gravelly loam, very gravelly sandy loam, silt loam, loam	SM, ML, GC-GM, CL-ML	A-4, A-2, A-1	0	0-5	65-100	55-100	30-100	15-90	10-20	2-5
PG:												
Pits, gravel	---	---	---	---	---	---	---	---	---	---	---	---
Ur:												
Urban land	---	---	---	---	---	---	---	---	---	---	---	---
W:												
Water	---	---	---	---	---	---	---	---	---	---	---	---

Table 22.—Physical Properties of the Soils

(Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Wind erodibility index" apply only to the surface layer. Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
1:												
Udifluvents-----------	0-9	70-91	0-29	0-15	1.10-1.50	0.2-20	0.03-0.15	0.0-2.9	0.0-3.0	.10	.17	-
	9-70	0-100	0-73	0-40	1.20-1.70	0.06-20	0.03-0.16	0.0-2.9	0.0-1.0	---	---	
Fluvaquents-----------	0-12	44-85	0-49	0-20	1.10-1.50	0.2-20	0.06-0.18	0.0-2.9	0.0-5.0	.10	.17	-
	12-72	0-100	0-80	0-40	1.20-1.60	0.06-20	0.03-0.16	0.0-2.9	0.0-1.0	.28	.32	
2:												
Hamlin----------------	0-10	0-50	50-80	0-17	1.15-1.40	0.6-2	0.18-0.21	0.0-2.9	2.0-6.0	.43	.43	5
	10-17	0-85	0-80	0-17	1.15-1.45	0.6-2	0.17-0.19	0.0-2.9	0.0-1.0	.49	.49	
	17-36	0-85	0-80	0-17	1.15-1.45	0.6-2	0.17-0.19	0.0-2.9	0.0-1.0	.49	.49	
	36-72	0-85	0-80	0-17	1.25-1.55	0.6-2	0.17-0.19	0.0-2.9	0.0-1.0	.49	.49	
3:												
Tioga-----------------	0-8	15-50	50-80	0-17	1.15-1.40	0.6-6	0.15-0.21	0.0-2.9	2.0-6.0	.37	.37	5
	8-34	15-85	0-80	0-17	1.15-1.45	0.6-6	0.07-0.20	0.0-2.9	0.0-1.0	.28	.32	
	34-72	15-91	0-80	0-17	1.25-1.55	0.6-20	0.02-0.20	0.0-2.9	0.0-1.0	.28	.32	
4:												
Teel------------------	0-8	0-50	50-80	0-17	1.15-1.40	0.6-2	0.18-0.21	0.0-2.9	2.0-6.0	.43	.43	5
	8-34	0-85	0-80	0-17	1.15-1.45	0.6-2	0.17-0.19	0.0-2.9	0.0-1.0	.49	.49	
	34-72	0-85	0-80	0-17	1.25-1.55	0.6-20	0.12-0.18	0.0-2.9	0.0-1.0	.49	.49	
5:												
Wayland---------------	0-9	0-32	50-80	15-27	1.05-1.40	0.2-2	0.17-0.22	0.0-2.9	3.0-6.0	.43	.43	5
	9-25	0-32	50-80	18-35	1.10-1.60	0.06-0.2	0.16-0.20	0.0-2.9	1.0-3.0	.43	.43	
	25-72	0-82	0-80	15-35	1.25-1.55	0.06-0.2	0.08-0.19	0.0-2.9	1.0-2.0	.43	.43	
6A:												
Wyalusing-------------	0-6	15-50	50-80	0-17	1.15-1.40	0.6-2	0.14-0.20	0.0-2.9	2.0-6.0	.37	.37	3
	6-27	15-85	0-80	0-17	1.40-1.65	0.6-2	0.10-0.16	0.0-2.9	1.0-3.0	.28	.32	
	27-72	32-91	0-50	0-17	1.25-1.55	6-20	0.02-0.10	0.0-2.9	1.0-2.0	.17	.24	
7A:												
Philo-----------------	0-8	15-50	50-80	0-17	1.20-1.40	0.6-2	0.14-0.20	0.0-2.9	2.0-4.0	.37	.37	5
	8-34	15-85	0-80	0-17	1.20-1.40	0.6-2	0.10-0.20	0.0-2.9	0.5-1.0	.32	.32	
	34-46	15-85	0-80	0-17	1.20-1.50	0.6-6	0.05-0.10	0.0-2.9	0.5-1.0	.24	.28	
	46-72	15-85	0-80	0-17	1.20-1.50	0.6-6	0.03-0.06	0.0-2.9	0.5-1.0	.17	.20	
8:												
Middlebury------------	0-8	15-50	50-80	0-17	1.15-1.40	0.6-2	0.14-0.21	0.0-2.9	3.0-7.0	.37	.37	5
	8-30	25-85	0-80	0-17	1.15-1.45	0.6-2	0.10-0.20	0.0-2.9	0.5-1.0	.28	.28	
	30-72	32-100	0-50	0-17	1.25-1.55	2-20	0.01-0.10	0.0-2.9	0.0-1.0	.20	.24	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
9:												
Pawling---------------	0-9	15-50	50-80	0-17	1.15-1.40	0.6-2	0.14-0.21	0.0-2.9	4.0-6.0	.37	.37	3
	9-28	15-85	0-80	0-17	1.15-1.45	0.6-2	0.11-0.17	0.0-2.9	1.0-3.0	.49	.49	
	28-72	70-100	0-29	0-15	1.25-1.55	2-20	0.01-0.11	0.0-2.9	0.0-2.0	.17	.24	
10:												
Atkins----------------	0-4	15-32	50-80	0-27	1.20-1.40	0.6-2	0.14-0.22	0.0-2.9	2.0-4.0	.32	.32	5
	4-38	15-82	0-80	18-35	1.20-1.50	0.06-2	0.14-0.18	0.0-2.9	0.5-1.0	.32	.37	
	38-72	15-82	0-73	18-35	1.20-1.50	0.6-6	0.08-0.18	0.0-2.9	0.0-1.0	.28	.43	
11B,11C,11D,11E,11F:												
Ischua----------------	0-6	15-32	50-80	0-27	1.10-1.40	0.6-2	0.12-0.19	0.0-2.9	3.0-8.0	.24	.32	3
	6-23	15-52	28-80	18-35	1.20-1.50	0.6-2	0.12-0.18	0.0-2.9	0.0-1.0	.28	.32	
	23-28	15-52	28-80	18-35	1.50-1.70	0.06-0.6	0.09-0.18	0.0-2.9	0.0-1.0	.28	.32	
	28-38	---	---	---	---	0.0000-0.06	---	---	---	---	---	
12B,12C,12D,12E:												
Franklinville---------	0-3	15-50	50-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	2.0-6.0	.24	.32	4
	3-32	15-85	0-80	0-17	1.20-1.50	0.6-2	0.08-0.16	0.0-2.9	0.0-1.0	.24	.28	
	32-42	15-85	0-80	0-17	1.40-1.60	0.2-2	0.07-0.14	0.0-2.9	0.0-1.0	.24	.28	
	42-72	15-85	0-80	0-17	1.40-1.70	0.2-2	0.07-0.14	0.0-2.9	0.0-1.0	.24	.32	
14B,14C:												
Hornellsville---------	0-5	0-50	50-80	18-27	1.10-1.40	0.6-2	0.16-0.21	0.0-2.9	3.0-7.0	.37	.43	3
	5-34	0-45	0-65	35-60	1.20-1.50	0.0015-0.2	0.11-0.13	3.0-5.9	0.0-2.0	.28	.32	
	34-48	---	---	---	---	0.0000-0.06	---	---	---	---	---	
15B,15C,15D:												
Willdin---------------	0-6	15-50	50-80	0-17	1.10-1.40	0.6-2	0.12-0.18	0.0-2.9	3.0-7.0	.24	.32	2
	6-24	15-85	0-80	0-17	1.20-1.50	0.6-2	0.09-0.17	0.0-2.9	0.0-1.0	.24	.28	
	24-60	15-52	28-80	0-17	1.65-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	60-72	15-52	28-80	0-17	1.60-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
16A,16B,16C:												
Almond----------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.17-0.21	0.0-2.9	3.0-8.0	.28	.32	4
	7-37	15-32	45-80	18-35	1.20-1.50	0.2-2	0.12-0.19	0.0-2.9	0.0-1.0	.32	.37	
	37-72	15-32	45-80	18-35	1.40-1.65	0.0015-0.2	0.08-0.14	0.0-2.9	0.0-1.0	.24	.32	
17B,17C,17D,17E:												
Salamanca-------------	0-8	15-32	50-80	0-27	1.10-1.40	0.6-2	0.12-0.19	0.0-2.9	3.0-8.0	.28	.32	4
	8-16	15-52	28-80	18-35	1.20-1.50	0.6-2	0.10-0.18	0.0-2.9	0.0-1.0	.28	.32	
	16-37	15-52	28-80	18-35	1.20-1.50	0.0015-0.6	0.11-0.18	0.0-2.9	0.0-1.0	.28	.32	
	37-72	15-52	28-80	18-35	1.45-1.65	0.0015-0.6	0.09-0.18	0.0-2.9	0.0-1.0	.28	.32	
18A:												
Pope------------------	0-10	44-85	0-49	0-17	1.20-1.40	0.6-6	0.14-0.23	0.0-2.9	1.0-4.0	.37	.37	5
	10-38	32-85	0-50	0-17	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.5-1.0	.28	.28	
	38-72	32-91	0-50	0-17	1.30-1.60	0.6-6	0.10-0.18	0.0-2.9	0.0-1.0	.28	.20	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
19A,19B:												
Olean-----------------	0-9	0-14	50-80	0-27	1.20-1.40	0.6-2	0.18-0.20	0.0-2.9	2.0-7.0	.43	.43	3
	9-23	0-82	0-80	0-27	1.20-1.40	0.6-2	0.18-0.21	0.0-2.9	0.0-1.0	.43	.43	
	23-36	0-14	50-80	18-35	1.20-1.60	0.2-2	0.15-0.20	3.0-5.9	0.0-1.0	.43	.43	
	36-72	70-100	0-29	0-15	1.20-1.40	6-101	0.01-0.05	0.0-2.9	0.0-1.0	.17	.20	
20A,20B,20C,20D:												
Unadilla--------------	0-9	0-50	50-80	0-17	1.20-1.50	0.6-2	0.18-0.21	0.0-2.9	2.0-7.0	.49	.49	4
	9-55	0-85	0-80	0-17	1.20-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-1.0	.64	.64	
	55-72	44-100	0-49	0-17	1.45-1.65	2-20	0.01-0.10	0.0-2.9	0.0-0.5	.17	.20	
22A,22B:												
Allard----------------	0-9	0-50	50-80	0-17	1.20-1.50	0.6-2	0.16-0.21	0.0-2.9	2.0-7.0	.43	.43	3
	9-34	0-85	0-80	0-17	1.20-1.50	0.6-2	0.15-0.20	0.0-2.9	0.0-1.0	.64	.64	
	34-72	70-100	0-29	0-15	1.45-1.65	6-101	0.01-0.03	0.0-2.9	0.0-1.0	.17	.20	
25A,25B,25C,25D,25E, 25F:												
Chenango--------------	0-9	0-50	50-80	0-27	1.20-1.50	0.6-6	0.08-0.16	0.0-2.9	2.0-6.0	.24	.32	3
	9-30	0-85	0-80	0-27	1.25-1.55	0.6-6	0.07-0.15	0.0-2.9	0.0-1.0	.17	.24	
	30-72	44-100	0-49	0-20	1.45-1.65	6-20	0.01-0.05	0.0-2.9	0.0-1.0	.17	.24	
26A,26B:												
Chenango, fan---------	0-9	0-50	50-80	0-27	1.20-1.50	0.6-6	0.08-0.14	0.0-2.9	2.0-6.0	.24	.32	3
	9-45	0-85	0-80	0-27	1.25-1.55	0.6-6	0.05-0.13	0.0-2.9	0.0-1.0	.17	.24	
	45-72	44-100	0-49	0-20	1.45-1.65	6-20	0.01-0.05	0.0-2.9	0.0-1.0	.17	.28	
27A,27B:												
Castile---------------	0-10	0-50	50-80	0-27	1.10-1.40	0.6-6	0.09-0.16	0.0-2.9	2.0-6.0	.24	.32	3
	10-30	0-85	0-80	0-27	1.25-1.55	2-6	0.05-0.13	0.0-2.9	0.0-1.0	.17	.24	
	30-72	24-100	0-50	0-27	1.45-1.65	6-20	0.01-0.02	0.0-2.9	0.0-1.0	.17	.24	
28A:												
Scio------------------	0-9	0-50	50-80	0-17	1.20-1.50	0.6-2	0.18-0.21	0.0-2.9	2.0-8.0	.49	.49	4
	9-50	0-85	0-80	0-17	1.20-1.50	0.6-2	0.17-0.20	0.0-2.9	0.0-1.0	.24	.24	
	50-72	0-100	0-80	0-17	1.45-1.65	2-20	0.02-0.19	0.0-2.9	0.0-1.0	.24	.28	
29A,29B,29C,29D,29E:												
Chenango--------------	0-9	44-85	0-49	0-20	1.20-1.50	0.6-6	0.08-0.16	0.0-2.9	2.0-6.0	.15	.20	3
	9-30	0-85	0-80	0-27	1.25-1.55	0.6-6	0.07-0.15	0.0-2.9	0.0-1.0	.17	.24	
	30-72	44-100	0-49	0-20	1.45-1.65	6-20	0.01-0.05	0.0-2.9	0.0-1.0	.17	.24	
31B,31C:												
Collamer--------------	0-6	0-50	50-80	0-27	1.20-1.50	0.6-2	0.14-0.21	0.0-2.9	2.0-5.0	.49	.49	4
	6-24	0-82	0-80	0-27	1.20-1.50	0.6-2	0.14-0.20	0.0-2.9	0.0-1.0	.49	.49	
	24-45	0-50	50-80	18-35	1.20-1.50	0.06-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.49	.49	
	45-72	0-100	0-100	0-40	1.45-1.65	0.06-0.6	0.12-0.20	0.0-2.9	0.0-1.0	.64	.64	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
32A,32B:												
Churchville------------	0-14	0-50	50-80	0-27	1.00-1.25	0.6-2	0.16-0.21	0.0-2.9	2.0-6.0	.49	.49	3
	14-37	0-45	15-65	35-60	1.20-1.40	0.0015-0.2	0.13-0.17	3.0-5.9	0.0-1.0	.28	.28	
	37-72	0-85	0-80	0-40	1.50-1.80	0.0015-0.2	0.07-0.17	0.0-2.9	0.0-1.0	.28	.32	
33A:												
Wallington------------	0-8	0-50	50-80	0-17	1.20-1.50	0.6-2	0.19-0.21	0.0-2.9	2.0-6.0	.49	.49	2
	8-14	0-85	0-80	0-17	1.20-1.50	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.64	.64	
	14-38	0-85	0-80	0-17	1.50-1.80	0.06-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.64	.64	
	38-72	0-91	0-80	0-17	1.45-1.65	0.06-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.64	.64	
34:												
Getzville-------------	0-9	0-32	50-80	0-27	1.20-1.50	0.2-2	0.15-0.22	0.0-2.9	4.0-8.0	.49	.49	3
	9-24	0-32	50-80	18-35	1.20-1.50	0.2-2	0.15-0.20	0.0-2.9	0.0-1.0	.43	.43	
	24-72	70-100	0-29	0-15	1.45-1.65	2-6	0.02-0.08	0.0-2.9	0.0-1.0	.17	.20	
35A,35B,35C:												
Rhinebeck-------------	0-9	0-50	50-80	0-27	1.00-1.25	0.2-2	0.16-0.21	3.0-5.9	3.0-7.0	.49	.49	3
	9-13	0-85	0-80	0-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-3.0	.28	.28	
	13-38	0-45	0-65	35-60	1.20-1.40	0.06-0.2	0.12-0.14	3.0-5.9	1.0-3.0	.28	.28	
	38-72	0-100	0-100	0-90	1.45-1.65	0.06-0.2	0.12-0.15	0.0-2.9	0.0-1.0	.28	.28	
36:												
Canadice--------------	0-8	0-20	40-65	27-40	1.35-1.55	0.2-2	0.17-0.21	3.0-5.9	3.0-8.0	.49	.49	3
	8-42	0-45	0-65	35-60	1.40-1.75	0.0015-0.06	0.12-0.17	3.0-5.9	0.0-1.0	.28	.28	
	42-72	0-45	0-65	27-60	1.40-1.50	0.0015-0.06	0.13-0.17	3.0-5.9	0.0-1.0	.28	.28	
37A,37B:												
Tonawanda-------------	0-9	0-50	50-80	0-17	1.20-1.50	0.2-2	0.18-0.24	0.0-2.9	3.0-8.0	.49	.49	4
	9-38	0-91	0-100	0-17	1.20-1.50	0.2-2	0.18-0.22	0.0-2.9	0.0-1.0	.64	.64	
	38-72	0-100	0-100	0-17	1.20-1.60	0.06-0.6	0.17-0.21	0.0-2.9	0.0-1.0	.64	.64	
38A,38B:												
Niagara---------------	0-12	0-50	50-80	0-27	1.20-1.50	0.6-2	0.17-0.22	0.0-2.9	2.0-6.0	.49	.49	4
	12-36	0-82	0-80	18-35	1.20-1.50	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.49	.49	
	36-72	0-82	0-80	0-40	1.20-1.50	0.06-0.6	0.12-0.20	0.0-2.9	0.0-1.0	.64	.64	
39A:												
Halsey----------------	0-6	15-50	50-80	0-17	1.10-1.30	0.6-2	0.16-0.24	0.0-2.9	3.0-5.0	.28	.32	3
	6-34	15-85	0-80	0-17	1.20-1.40	0.6-6	0.12-0.18	0.0-2.9	0.0-0.5	.24	.28	
	34-72	70-100	0-29	0-15	1.40-1.60	6-20	0.02-0.07	0.0-2.9	0.0-0.0	.10	.17	
40A,40B,40C:												
Williamson------------	0-8	0-50	50-80	0-17	1.10-1.40	0.6-2	0.18-0.20	0.0-2.9	3.0-6.0	.49	.49	3
	8-20	0-85	0-80	0-17	1.10-1.40	0.6-2	0.18-0.20	0.0-2.9	0.0-1.0	.64	.64	
	20-38	0-85	0-80	0-17	1.30-1.60	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.64	.64	
	38-72	0-85	0-80	0-17	1.30-1.60	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.64	.64	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
41A,41B:												
Barcelona-------------	0-9	0-50	50-80	0-27	1.20-1.50	0.6-2	0.17-0.20	0.0-2.9	2.0-6.0	.49	.49	4
	9-36	0-85	0-80	18-35	1.20-1.50	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.43	.43	
	36-46	0-50	50-80	0-40	1.45-1.65	0.2-2	0.08-0.14	0.0-2.9	0.0-1.0	.28	.37	
	46-56	---	---	---	---	0.0000-0.06	---	---	---	---	---	
42A,42B:												
Elnora----------------	0-7	44-85	0-49	0-20	1.20-1.50	2-6	0.08-0.16	0.0-2.9	2.0-6.0	.28	.28	4
	7-27	70-100	0-29	0-15	1.20-1.50	6-20	0.07-0.09	0.0-2.9	0.0-1.0	.17	.17	
	27-72	70-100	0-29	0-15	1.45-1.65	6-20	0.04-0.06	0.0-2.9	0.0-1.0	.17	.17	
43:												
Canandaigua, silt loam	0-9	0-32	50-80	0-27	1.20-1.40	0.6-2	0.18-0.24	0.0-2.9	4.0-8.0	.49	.49	4
	9-32	0-82	0-80	18-35	1.20-1.40	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.49	.49	
	32-72	0-82	0-80	18-35	1.15-1.40	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.64	.64	
44:												
Canandaigua, mucky silt loam------------	0-10	0-32	50-80	0-27	1.00-1.25	0.6-2	0.18-0.30	0.0-2.9	10-20	.43	.43	4
	10-32	0-82	0-80	18-35	1.20-1.40	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.49	.49	
	32-72	0-82	0-80	18-35	1.15-1.40	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.64	.64	
45:												
Canandaigua, acid substratum-----------	0-8	0-32	50-80	0-27	1.20-1.40	0.6-2	0.17-0.22	0.0-2.9	4.0-8.0	.49	.49	4
	8-32	0-82	0-80	18-35	1.20-1.40	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.49	.49	
	32-72	0-82	0-80	18-35	1.15-1.40	0.2-0.6	0.16-0.20	0.0-2.9	0.0-1.0	.64	.64	
46:												
Swormville------------	0-8	0-50	50-80	0-27	1.20-1.50	0.2-0.6	0.17-0.22	0.0-2.9	3.0-6.0	.49	.49	3
	8-31	0-52	20-80	18-35	1.55-1.70	0.06-0.6	0.15-0.17	0.0-2.9	0.0-1.0	.43	.43	
	31-35	44-91	0-49	0-20	1.60-1.75	2-6	0.03-0.08	0.0-2.9	0.0-1.0	.17	.20	
	35-72	70-100	0-29	0-15	1.60-1.75	2-6	0.02-0.08	0.0-2.9	0.0-1.0	.17	.20	
47A:												
Minoa-----------------	0-9	44-85	0-49	0-17	1.20-1.50	0.6-2	0.13-0.21	0.0-2.9	3.0-6.0	.37	.37	4
	9-32	15-91	0-80	0-17	1.20-1.50	0.6-2	0.13-0.20	0.0-2.9	0.0-1.0	.32	.32	
	32-36	15-91	0-80	0-17	1.20-1.50	0.6-2	0.13-0.20	0.0-2.9	0.0-1.0	.24	.24	
	36-72	15-100	0-80	0-17	1.20-1.50	0.6-6	0.07-0.20	0.0-2.9	0.0-1.0	.24	.24	
48A,48B,48C:												
Colonie---------------	0-9	44-85	0-49	0-20	1.20-1.50	2-6	0.08-0.16	0.0-2.9	1.0-2.0	.28	.28	5
	9-47	70-100	0-29	0-15	1.20-1.50	2-20	0.06-0.08	0.0-2.9	0.0-1.0	.17	.17	
	47-72	70-100	0-29	0-15	1.45-1.65	2-20	0.04-0.07	0.0-2.9	0.0-1.0	.17	.17	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
49A:												
Red Hook---------------	0-9	15-50	50-80	0-17	1.10-1.40	0.6-2	0.14-0.19	0.0-2.9	4.0-8.0	.28	.32	4
	9-32	15-85	0-80	0-17	1.25-1.55	0.6-2	0.04-0.17	0.0-2.9	0.0-1.0	.24	.28	
	32-72	15-85	0-80	0-17	1.45-1.65	0.6-6	0.04-0.11	0.0-2.9	0.0-1.0	.17	.24	
50A,50B,50C:												
Canaseraga------------	0-5	0-50	50-80	0-17	1.10-1.40	0.6-2	0.17-0.21	0.0-2.9	2.0-4.0	.49	.49	3
	5-23	0-85	0-80	0-17	1.20-1.50	0.6-2	0.16-0.20	0.0-2.9	0.0-1.0	.64	.64	
	23-28	0-52	28-80	0-17	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.28	.32	
	28-72	0-52	28-80	0-17	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.28	.32	
51B,51C,51D,51E,51F:												
Chadakoin-------------	0-9	15-50	50-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	2.0-6.0	.24	.32	4
	9-33	15-85	0-80	0-17	1.20-1.50	0.6-2	0.08-0.16	0.0-2.9	0.0-1.0	.24	.28	
	33-54	15-85	0-80	0-17	1.40-1.60	0.2-2	0.07-0.14	0.0-2.9	0.0-1.0	.24	.28	
	54-72	15-85	0-80	0-17	1.40-1.70	0.2-2	0.07-0.14	0.0-2.9	0.0-1.0	.24	.32	
52B,52C,52D,52E,52F:												
Valois----------------	0-6	15-50	50-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	2.0-6.0	.24	.32	4
	6-27	15-85	0-80	0-17	1.20-1.50	0.6-2	0.07-0.14	0.0-2.9	0.0-1.0	.24	.28	
	27-48	15-85	0-80	0-17	1.20-1.50	0.6-6	0.07-0.14	0.0-2.9	0.0-1.0	.24	.28	
	48-72	15-85	0-80	0-17	1.40-1.60	0.6-6	0.03-0.09	0.0-2.9	0.0-1.0	.24	.32	
53C:												
Valois----------------	0-6	15-50	50-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	2.0-6.0	.24	.32	4
	6-27	15-85	0-80	0-17	1.20-1.50	0.6-2	0.07-0.14	0.0-2.9	0.0-1.0	.24	.28	
	27-48	15-85	0-80	0-17	1.20-1.50	0.6-6	0.07-0.14	0.0-2.9	0.0-1.0	.24	.28	
	48-72	15-85	0-80	0-17	1.40-1.60	0.6-6	0.03-0.09	0.0-2.9	0.0-1.0	.24	.32	
Volusia---------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.11-0.17	0.0-2.9	2.0-7.0	.24	.32	2
	7-16	15-52	28-80	18-27	1.30-1.60	0.6-2	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	16-45	15-52	28-80	18-35	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	45-72	15-52	28-80	18-27	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
Mardin----------------	0-6	15-50	50-80	0-17	1.10-1.40	0.6-2	0.11-0.17	0.0-2.9	3.0-7.0	.24	.32	2
	6-17	15-52	28-80	0-17	1.20-1.50	0.6-2	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	17-41	15-52	28-80	0-17	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
	41-72	15-52	28-80	0-17	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
55A,55B,55C:												
Darien----------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.15-0.20	0.0-2.9	3.0-8.0	.28	.32	3
	7-14	15-52	28-80	18-35	1.50-1.75	0.6-2	0.09-0.16	3.0-5.9	0.0-1.0	.24	.28	
	14-38	15-45	20-80	18-35	1.50-1.75	0.2-0.6	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	38-72	15-52	20-80	0-40	1.50-1.85	0.06-0.2	0.05-0.14	0.0-2.9	0.0-1.0	.24	.28	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
56B,56C,56D:												
Chautauqua------------	0-9	15-50	50-80	0-17	1.10-1.40	0.6-2	0.13-0.20	0.0-2.9	2.0-6.0	.28	.32	4
	9-36	15-52	28-80	0-17	1.20-1.50	0.6-2	0.08-0.15	0.0-2.9	0.0-1.0	.24	.28	
	36-72	15-52	28-80	0-17	1.40-1.70	0.2-0.6	0.08-0.14	0.0-2.9	0.0-1.0	.24	.28	
57A,57B,57C:												
Busti-----------------	0-8	15-50	50-80	0-17	1.10-1.40	0.2-2	0.13-0.20	0.0-2.9	2.0-6.0	.28	.32	4
	8-13	15-52	28-80	0-17	1.10-1.40	0.2-2	0.13-0.20	0.0-2.9	0.0-1.0	.32	.32	
	13-39	15-52	28-80	0-17	1.20-1.50	0.2-2	0.08-0.15	0.0-2.9	0.0-1.0	.24	.28	
	39-72	15-52	28-80	0-17	1.40-1.70	0.06-0.6	0.08-0.14	0.0-2.9	0.0-1.0	.24	.28	
58B,58C:												
Rushford--------------	0-4	15-50	50-80	0-17	1.10-1.40	0.6-2	0.11-0.17	0.0-2.9	3.0-8.0	.24	.32	3
	4-21	15-85	0-80	0-17	1.10-1.40	0.6-2	0.09-0.16	0.0-2.9	0.0-2.0	.24	.28	
	21-28	15-52	28-80	0-17	1.75-1.90	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	28-36	15-50	50-100	0-17	1.70-1.85	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.49	.49	
	36-72	0-50	40-100	0-40	1.40-1.70	0.2-0.6	0.00-0.00	0.0-2.9	0.0-1.0	.49	.49	
59B,59C,59D:												
Yorkshire-------------	0-8	15-32	50-80	0-27	1.10-1.40	0.6-2	0.15-0.18	0.0-2.9	3.0-8.0	.28	.32	3
	8-19	15-52	28-80	0-35	1.20-1.60	0.6-2	0.12-0.18	0.0-2.9	0.0-1.0	.32	.37	
	19-56	15-52	28-80	18-35	1.65-1.85	0.06-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	56-72	15-52	28-80	0-40	1.65-1.85	0.06-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
60A,60B,60C,60D:												
Napoli----------------	0-9	15-32	50-80	0-27	1.10-1.40	0.2-2	0.18-0.22	0.0-2.9	3.0-8.0	.28	.32	3
	9-23	15-45	20-80	0-35	1.20-1.60	0.2-2	0.12-0.18	0.0-2.9	0.0-1.0	.32	.37	
	23-46	15-52	28-80	18-35	1.65-1.85	0.06-0.6	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	46-72	15-52	28-80	0-40	1.65-1.85	0.06-0.6	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
61B,61C,61D,61E,61F:												
Schuyler--------------	0-6	15-32	50-80	0-27	1.10-1.40	0.6-2	0.12-0.19	0.0-2.9	3.0-8.0	.28	.32	4
	6-35	15-52	28-80	18-35	1.20-1.50	0.2-2	0.11-0.18	0.0-2.9	0.0-1.0	.37	.43	
	35-72	15-52	28-80	18-35	1.70-1.95	0.06-0.6	0.09-0.18	0.0-2.9	0.0-1.0	.28	.32	
62B,62C,62D:												
Mardin----------------	0-6	15-50	50-80	0-17	1.10-1.40	0.6-2	0.11-0.17	0.0-2.9	3.0-7.0	.24	.32	2
	6-17	15-52	28-80	0-17	1.20-1.50	0.6-2	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	17-41	15-52	28-80	0-17	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
	41-72	15-52	28-80	0-17	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
63B,63C,63D:												
Langford--------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.10-0.17	0.0-2.9	3.0-9.0	.24	.32	3
	7-25	15-52	28-80	18-35	1.20-1.50	0.6-2	0.08-0.14	0.0-2.9	0.0-1.0	.28	.32	
	25-44	15-52	28-80	18-35	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.28	.37	
	44-72	15-52	28-80	18-35	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.28	.37	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
64C:												
Mardin----------------	0-6	15-50	50-80	0-17	1.10-1.40	0.6-2	0.11-0.17	0.0-2.9	3.0-7.0	.24	.32	2
	6-17	15-52	28-80	0-17	1.20-1.50	0.6-2	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	17-41	15-52	28-80	0-17	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
	41-72	15-52	28-80	0-17	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
66B:												
Volusia---------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.11-0.17	0.0-2.9	2.0-7.0	.24	.32	2
	7-16	15-52	28-80	18-27	1.30-1.60	0.6-2	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	16-45	15-52	28-80	18-35	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	45-72	15-52	28-80	18-27	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
67A,67B:												
Dalton----------------	0-9	0-50	50-80	0-17	1.10-1.40	0.6-2	0.17-0.21	0.0-2.9	2.0-4.0	.43	.49	2
	9-17	0-85	0-80	0-17	1.20-1.50	0.6-2	0.16-0.20	0.0-2.9	0.0-1.0	.64	.64	
	17-29	0-85	0-80	0-17	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.28	.32	
	29-72	0-52	28-80	0-17	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.28	.32	
68A,68B,68C:												
Volusia---------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.11-0.17	0.0-2.9	2.0-7.0	.24	.32	2
	7-16	15-52	28-80	18-27	1.30-1.60	0.6-2	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	16-45	15-52	28-80	18-35	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	45-72	15-52	28-80	18-27	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
69A,69B,69C:												
Erie------------------	0-9	15-32	50-80	0-27	1.10-1.40	0.6-2	0.10-0.18	0.0-2.9	3.0-7.0	.24	.32	2
	9-14	15-52	28-80	18-35	1.20-1.50	0.6-2	0.09-0.16	0.0-2.9	0.0-1.0	.24	.28	
	14-45	15-52	28-80	18-35	1.70-2.00	0.06-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
	45-72	15-52	28-80	18-35	1.65-1.95	0.06-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.32	
71E,71F:												
Mongaup---------------	0-4	15-50	50-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	2.0-6.0	.24	.32	3
	4-27	15-85	0-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	0.0-2.0	.24	.28	
	27-37	---	---	---	---	0.0000-0.2	---	---	---	---	---	
72B,72C,72D,72E,72F:												
Towerville------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.12-0.19	0.0-2.9	3.0-8.0	.28	.32	3
	7-23	15-52	28-80	18-35	1.20-1.50	0.6-2	0.12-0.18	0.0-2.9	0.0-1.0	.28	.32	
	23-32	15-52	28-80	18-35	1.60-1.80	0.06-0.6	0.09-0.18	0.0-2.9	0.0-1.0	.28	.32	
	32-42	---	---	---	---	0.0000-0.06	---	---	---	---	---	
73B,73C:												
Gretor----------------	0-8	15-32	50-80	0-27	1.00-1.30	0.6-2	0.12-0.17	0.0-2.9	3.0-9.0	.24	.32	3
	8-21	15-52	20-80	18-35	1.10-1.40	0.2-0.6	0.12-0.16	0.0-2.9	0.0-1.0	.28	.32	
	21-25	15-52	20-80	18-35	1.30-1.65	0.2-0.6	0.08-0.14	0.0-2.9	0.0-1.0	.28	.32	
	25-29	---	---	---	---	0.0000-0.2	---	---	---	---	---	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
74:												
Ashville--------------	0-9	15-32	50-80	0-27	1.10-1.40	0.6-2	0.16-0.22	0.0-2.9	4.0-8.0	.28	.32	4
	9-44	15-52	28-80	18-35	1.20-1.50	0.2-0.6	0.14-0.20	0.0-2.9	0.0-1.0	.37	.37	
	44-72	15-82	0-80	18-27	1.50-1.80	0.06-0.6	0.11-0.18	0.0-2.9	0.0-1.0	.28	.32	
75:												
Alden-----------------	0-6	15-32	50-80	0-27	1.10-1.40	0.6-2	0.16-0.22	0.0-2.9	10-20	.24	.28	4
	6-25	15-82	0-80	18-35	1.20-1.50	0.2-0.6	0.14-0.20	0.0-2.9	0.0-1.0	.37	.37	
	25-72	15-82	0-73	18-35	1.50-1.80	0.06-0.6	0.08-0.15	0.0-2.9	0.0-1.0	.28	.32	
76A,76B,76C:												
Orpark----------------	0-8	15-32	50-80	0-27	1.10-1.40	0.6-2	0.14-0.21	0.0-2.9	3.0-7.0	.28	.32	3
	8-22	15-32	45-80	18-35	1.20-1.60	0.06-0.6	0.14-0.20	0.0-2.9	0.0-1.0	.32	.32	
	22-24	15-32	45-80	18-35	1.30-1.60	0.06-0.6	0.13-0.18	0.0-2.9	0.0-1.0	.32	.37	
	24-26	15-32	45-80	18-35	1.30-1.60	0.0000-0.2	0.13-0.18	0.0-2.9	0.0-1.0	.32	.37	
	26-36	---	---	---	---	0.0000-0.06	---	---	---	---	---	
77A:												
Chippewa--------------	0-6	15-32	50-80	0-27	1.00-1.30	0.6-2	0.17-0.19	0.0-2.9	3.0-10	.28	.32	2
	6-19	15-52	20-80	18-35	1.20-1.50	0.6-2	0.10-0.16	0.0-2.9	0.0-2.0	.32	.37	
	19-41	15-82	0-80	18-35	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	41-72	15-82	0-80	18-35	1.65-1.95	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-0.0	.24	.32	
78A,78B,78C,78D:												
Hornell---------------	0-8	0-50	50-80	18-27	1.10-1.40	0.6-2	0.16-0.21	0.0-2.9	3.0-7.0	.37	.43	3
	8-28	0-45	0-65	35-60	1.20-1.50	0.0015-0.2	0.11-0.13	3.0-5.9	0.0-1.0	.28	.32	
	28-34	0-45	0-65	35-60	1.30-1.55	0.0015-0.2	0.06-0.12	3.0-5.9	0.0-0.5	.28	.32	
	34-44	---	---	---	---	0.0000-0.0015	---	---	---	---	---	
78F:												
Hornell---------------	0-8	0-50	50-80	18-27	1.10-1.40	0.6-2	0.16-0.21	0.0-2.9	3.0-7.0	.37	.43	3
	8-28	0-45	0-65	35-60	1.20-1.50	0.0015-0.2	0.11-0.13	3.0-5.9	0.0-1.0	.28	.32	
	28-34	0-45	0-65	35-60	1.30-1.55	0.0015-0.2	0.06-0.12	3.0-5.9	0.0-0.5	.28	.32	
	34-44	---	---	---	---	0.0000-0.0015	---	---	---	---	---	
Hudson----------------	0-7	0-50	50-80	18-27	1.00-1.25	0.2-2	0.16-0.21	3.0-5.9	3.0-6.0	.49	.49	3
	7-16	0-50	40-80	18-60	1.15-1.40	0.06-2	0.13-0.17	3.0-5.9	0.0-1.0	.28	.28	
	16-38	0-20	40-65	35-60	1.15-1.40	0.0015-0.2	0.13-0.17	3.0-5.9	0.0-1.0	.28	.28	
	38-72	0-50	40-100	0-60	1.15-1.40	0.0015-0.2	0.12-0.20	3.0-5.9	0.0-1.0	.28	.28	
79B,79C,79D,79E,79F:												
Mongaup---------------	0-4	15-50	50-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	2.0-6.0	.24	.32	3
	4-27	15-85	0-80	0-17	1.10-1.40	0.6-2	0.08-0.16	0.0-2.9	0.0-2.0	.24	.28	
	27-37	---	---	---	---	0.0000-0.2	---	---	---	---	---	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
80A,80B,80C:												
Fremont---------------	0-9	15-32	50-80	0-27	1.10-1.40	0.6-2	0.16-0.21	0.0-2.9	3.0-8.0	.28	.32	4
	9-39	15-32	45-80	18-35	1.20-1.50	0.2-2	0.12-0.19	0.0-2.9	0.0-1.0	.32	.37	
	39-72	15-32	45-80	18-35	1.40-1.65	0.0015-0.2	0.08-0.14	0.0-2.9	0.0-1.0	.24	.32	
81B,81C,81D,81E:												
Varysburg-------------	0-5	0-52	50-80	0-27	1.10-1.40	0.6-6	0.08-0.17	0.0-2.9	2.0-6.0	.24	.32	3
	5-22	0-85	0-80	0-27	1.25-1.55	0.6-6	0.05-0.12	0.0-2.9	0.0-1.0	.24	.32	
	22-33	24-85	0-50	0-34	1.25-1.55	0.6-6	0.05-0.09	0.0-2.9	0.0-1.0	.24	.32	
	33-48	0-20	40-73	35-60	1.20-1.40	0.0015-0.06	0.14-0.17	3.0-5.9	0.0-1.0	.32	.32	
	48-72	0-52	0- 100	0-90	1.15-1.40	0.0015-0.06	0.13-0.14	3.0-5.9	0.0-1.0	.32	.32	
82F:												
Rock Outcrop----------	0-60	---	---	---	---	0.0000-0.01	---	---	---	---	---	-
Manlius---------------	0-4	0-50	50-80	0-27	1.10-1.40	0.6-6	0.10-0.18	0.0-2.9	1.0-5.0	.24	.32	3
	4-23	0-52	28-80	0-27	1.20-1.50	0.6-6	0.08-0.12	0.0-2.9	0.0-1.0	.20	.28	
	23-34	0-52	28-80	0-27	1.70-1.95	0.6-6	0.03-0.09	0.0-2.9	0.0-0.0	.20	.32	
	34-44	---	---	0-0	---	0.0000- 0.0015	0.00-0.00	---	---	---	---	
84B,84C:												
Elko------------------	0-6	15-32	50-80	0-27	1.25-1.50	0.6-2	0.16-0.20	0.0-2.9	3.0-7.0	.28	.32	3
	6-26	15-52	28-80	18-35	1.35-1.65	0.6-2	0.12-0.16	3.0-5.9	0.0-1.0	.24	.28	
	26-64	15-52	28-80	18-35	1.65-1.85	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.17	.24	
	64-72	15-82	0-80	0-40	1.55-1.80	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.24	.28	
85B,85C,85D:												
Onoville--------------	0-8	15-32	50-80	0-27	1.25-1.50	0.6-2	0.16-0.24	0.0-2.9	3.0-7.0	.28	.32	3
	8-22	15-52	28-80	18-35	1.35-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-1.0	.24	.28	
	22-65	15-52	20-73	18-35	1.65-1.85	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.24	.28	
	65-72	0-52	0-80	0-90	1.55-1.80	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.24	.32	
86B,86C,86D:												
Eldred----------------	0-3	15-32	50-80	0-27	1.10-1.30	0.6-2	0.16-0.20	0.0-2.9	1.0-4.0	.28	.32	4
	3-14	15-52	28-80	0-35	1.20-1.50	0.6-2	0.12-0.16	3.0-5.9	0.0-1.0	.24	.28	
	14-42	15-45	20-80	18-35	1.20-1.60	0.2-0.6	0.08-0.12	3.0-5.9	0.0-1.0	.17	.24	
	42-72	15-45	20-80	0-40	1.20-1.60	0.06-0.6	0.08-0.12	3.0-5.9	0.0-1.0	.24	.28	
87B,87C:												
Shongo----------------	0-6	15-32	50-80	0-27	1.20-1.40	0.2-2	0.18-0.21	0.0-2.9	4.0-7.0	.28	.32	3
	6-24	15-52	28-80	0-35	1.20-1.40	0.2-2	0.16-0.20	3.0-5.9	0.0-1.0	.43	.43	
	24-56	15-52	20-80	18-35	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	
	56-72	15-52	20-80	0-40	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
88A,88B,88C,88D:												
Ivory-----------------	0-6	0-50	50-80	0-27	1.20-1.40	0.2-0.6	0.18-0.22	0.0-2.9	3.0-7.0	.43	.49	3
	6-14	0-50	0-80	0-60	1.30-1.55	0.2-0.6	0.10-0.14	3.0-5.9	0.0-1.0	.28	.28	
	14-48	0-45	0-65	35-60	1.30-1.55	0.06-0.2	0.07-0.16	3.0-5.9	0.0-1.0	.28	.32	
	48-72	0-45	0-65	27-60	1.50-1.75	0.06-0.2	0.05-0.15	3.0-5.9	0.0-1.0	.28	.32	
89B,89C:												
Portville-------------	0-7	15-20	45-73	0-35	1.20-1.40	0.2-2	0.18-0.22	0.0-2.9	4.0-7.0	.32	.37	3
	7-22	15-52	28-80	18-35	1.20-1.40	0.2-2	0.16-0.22	3.0-5.9	0.0-1.0	.43	.43	
	22-50	15-52	20-80	18-35	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	
	50-72	15-52	20-80	0-40	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	
90A,90B:												
Brinkerton------------	0-7	0-50	50-80	0-27	1.20-1.40	0.6-2	0.18-0.24	0.0-2.9	1.0-4.0	.37	.43	3
	7-25	0-50	50-80	18-35	1.20-1.50	0.2-0.6	0.14-0.18	3.0-5.9	0.0-0.5	.37	.43	
	25-45	0-52	20-80	18-35	1.60-1.80	0.06-0.2	0.00-0.00	3.0-5.9	0.0-0.5	.32	.43	
	45-72	0-52	28-80	0-40	1.40-1.55	0.06-0.2	0.00-0.00	0.0-2.9	0.0-0.5	.20	.64	
91A:												
Palms-----------------	0-12	---	---	0-0	0.30-0.40	0.2-6	0.35-0.45	---	75-99	---	---	2
	12-32	---	---	0-0	0.15-0.30	0.2-6	0.35-0.45	---	75-99	---	---	
	32-72	0-85	0-73	0-34	1.45-1.75	0.2-2	0.14-0.22	0.0-2.9	4.0-8.0	.37	.37	
92:												
Carlisle--------------	0-72	---	---	0-0	0.13-0.23	0.2-6	0.35-0.45	---	70-99	---	---	3
93:												
Saprists, Inundated---	0-38	---	---	0-0	0.30-0.60	0.2-20	0.35-0.45	---	50-95	---	---	2
	38-72	0-85	0-73	0-34	1.45-1.75	0.2-2	0.14-0.22	0.0-2.9	4.0-8.0	.37	.37	
94B,94C:												
Frewsburg-------------	0-6	15-32	50-80	0-27	1.25-1.50	0.6-2	0.15-0.23	0.0-2.9	3.0-7.0	.28	.32	3
	6-18	15-52	20-80	18-35	1.40-1.65	0.2-2	0.12-0.19	0.0-2.9	0.0-1.0	.24	.28	
	18-38	15-52	20-80	18-35	1.35-1.65	0.2-2	0.09-0.15	0.0-2.9	0.0-1.0	.24	.28	
	38-48	---	---	---	---	0.0000-0.06	---	---	---	---	---	
95B,95C,95D,95E,95F:												
Mandy-----------------	0-2	0-50	50-80	0-27	1.20-1.50	0.6-2	0.08-0.12	0.0-2.9	0.5-3.0	.24	.32	3
	2-24	0-52	28-80	0-27	1.20-1.60	0.6-2	0.04-0.10	0.0-2.9	0.0-1.0	.17	.24	
	24-33	0-52	28-80	0-27	1.20-1.60	0.6-2	0.04-0.10	0.0-2.9	0.0-1.0	.17	.24	
	33-43	---	---	---	---	0.0000-20	---	---	---	---	---	
96B,96C,96D,96E,96F:												
Carrollton------------	0-2	15-32	50-80	0-27	1.25-1.50	0.6-2	0.16-0.20	0.0-2.9	3.0-7.0	.24	.32	3
	2-23	15-52	28-80	18-35	1.35-1.65	0.6-2	0.12-0.17	0.0-2.9	0.0-1.0	.24	.32	
	23-30	15-52	28-80	18-35	1.35-1.65	0.6-2	0.12-0.17	0.0-2.9	0.0-1.0	.24	.32	
	30-40	---	---	---	---	0.0000-0.06	---	---	---	---	---	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea-bility (Ksat)	Available water capacity	Linear extensi-bility	Organic matter	Erosion factors Kw	Erosion factors Kf	Erosion factors T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
97B,97C,97D,97E,97F:												
Kinzua----------------	0-3	15-32	50-80	0-27	1.25-1.50	0.6-2	0.13-0.24	0.0-2.9	3.0-7.0	.24	.32	4
	3-45	15-52	28-80	18-35	1.40-1.70	0.6-2	0.08-0.13	0.0-2.9	0.0-1.0	.24	.28	
	45-72	15-52	20-80	18-40	1.60-1.80	0.2-0.6	0.10-0.16	0.0-2.9	0.0-1.0	.24	.28	
98D,98E:												
Kinzua----------------	0-3	15-32	50-80	0-27	1.25-1.50	0.6-2	0.13-0.24	0.0-2.9	3.0-7.0	.24	.32	4
	3-45	15-52	28-80	18-35	1.40-1.70	0.6-2	0.08-0.13	0.0-2.9	0.0-1.0	.24	.28	
	45-72	15-52	20-80	18-40	1.60-1.80	0.2-0.6	0.10-0.16	0.0-2.9	0.0-1.0	.24	.28	
99B,99C,99D:												
Buchanan--------------	0-6	15-32	50-80	0-27	1.20-1.40	0.6-2	0.14-0.20	0.0-2.9	2.0-4.0	.28	.32	3
	6-33	15-80	0-80	18-35	1.30-1.50	0.6-2	0.12-0.16	3.0-5.9	0.0-0.5	.32	.32	
	33-45	15-80	0-80	18-35	1.40-1.70	0.06-0.2	0.00-0.00	0.0-2.9	0.0-0.5	.32	.37	
	45-72	15-80	0-80	0-40	1.30-1.60	0.06-0.2	0.00-0.00	3.0-5.9	0.0-0.5	.32	.37	
100:												
Udorthents------------	0-4	44-85	0-49	0-20	1.20-1.60	0.6-20	0.04-0.13	0.0-2.9	0.0-4.0	.10	.17	-
	4-70	0-100	0-80	0-60	1.30-1.70	0.6-20	0.02-0.11	0.0-2.9	0.0-1.0	.17	.24	
101:												
Udorthents, Refuse Substratum-----------	0-24	25-52	28-50	7-27	1.20-1.80	0.06-20	0.03-0.15	0.0-2.9	0.0-4.0	.10	.17	-
	24-70	---	---	---	---	0.06-20	---	---	0.0-1.0	---	---	
102C:												
Mandy-----------------	0-2	0-50	50-80	0-27	1.20-1.50	0.6-2	0.08-0.12	0.0-2.9	0.5-3.0	.24	.32	3
	2-24	0-52	28-80	0-27	1.20-1.60	0.6-2	0.04-0.10	0.0-2.9	0.0-1.0	.17	.24	
	24-33	0-52	28-80	0-27	1.20-1.60	0.6-2	0.04-0.10	0.0-2.9	0.0-1.0	.17	.24	
	33-43	---	---	---	---	0.0000-20	---	---	---	---	---	
Rock Outcrop----------	0-60	---	---	---	---	0.0000-0.01	---	---	---	---	---	-
103C:												
Knapp Creek-----------	0-3	---	---	0-0	0.30-0.40	2-20	0.20-0.35	---	65-90	---	---	4
	3-11	70-91	0-29	5-18	1.20-1.40	2-20	0.06-0.10	0.0-2.9	2.0-4.0	.17	.24	
	11-22	24-91	0-50	0-27	1.20-1.40	2-20	0.06-0.10	0.0-2.9	0.0-1.0	.17	.20	
	22-48	24-91	0-50	0-27	1.20-1.40	2-20	0.06-0.10	0.0-2.9	0.0-1.0	.17	.20	
	48-58	24-91	0-50	0-27	1.20-1.40	2-20	0.06-0.10	0.0-2.9	0.0-1.0	.17	.20	
	58-68	---	---	---	---	0.0000-0.2	---	---	---	---	---	
Rock Outcrop----------	0-60	---	---	---	---	0.0000-0.01	---	---	---	---	---	-

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
104B,104C,104D,104E:												
Flatiron--------------	0-1	---	---	0-0	0.30-0.40	2-20	0.20-0.35	---	65-90	---	---	4
	1-2	32-91	0-50	0-17	1.10-1.40	2-20	0.08-0.16	0.0-2.9	2.0-6.0	.15	.17	
	2-36	32-91	0-50	0-17	1.20-1.40	2-20	0.06-0.12	0.0-2.9	0.0-1.0	.24	.28	
	36-47	32-91	0-50	0-17	1.20-1.60	0.2-6	0.06-0.12	0.0-2.9	0.0-1.0	.24	.28	
	47-60	0-91	0-73	0-40	---	0.2-6	0.10-0.17	0.0-2.9	0.0-1.0	.28	.28	
	60-72	32-91	0-50	0-17	---	0.2-6	0.08-0.14	0.0-2.9	0.0-1.0	.15	.20	
108D,108E,108F:												
Hartleton-------------	0-10	0-50	50-80	0-27	1.20-1.40	0.6-6	0.10-0.14	0.0-2.9	1.0-3.0	.24	.32	4
	10-38	0-52	28-80	0-34	1.40-1.60	0.6-6	0.06-0.10	0.0-2.9	0.0-0.5	.20	.64	
	38-58	0-52	28-80	0-27	1.40-1.60	0.6-6	0.04-0.08	0.0-2.9	0.0-0.5	.20	.32	
	58-68	---	---	---	---	0.0000-0.2	---	---	---	---	---	
131:												
Lamson----------------	0-16	44-85	0-49	0-17	1.10-1.40	0.6-6	0.15-0.22	0.0-2.9	3.0-10	.37	.37	4
	16-35	44-85	0-49	0-17	1.25-1.55	0.6-6	0.12-0.17	0.0-2.9	0.0-4.0	.20	.20	
	35-72	15-100	0-80	0-17	1.45-1.65	0.6-6	0.02-0.04	0.0-2.9	0.0-0.5	.20	.20	
132B,132C:												
Wiscoy----------------	0-7	15-32	50-80	0-27	1.10-1.40	0.6-2	0.11-0.22	0.0-2.9	2.0-7.0	.24	.32	2
	7-12	15-82	0-80	18-27	1.30-1.60	0.6-2	0.09-0.21	0.0-2.9	0.0-1.0	.24	.28	
	12-36	15-52	28-80	18-35	1.70-2.00	0.0015-0.2	0.00-0.00	0.0-2.9	0.0-1.0	.24	.28	
	36-72	15-82	0-80	18-35	1.40-1.50	0.06-0.6	0.00-0.00	0.0-2.9	0.0-1.0	.64	.64	
135C,135D,135E:												
Hudson----------------	0-7	0-50	50-80	18-27	1.00-1.25	0.2-2	0.16-0.21	3.0-5.9	3.0-6.0	.49	.49	3
	7-16	0-50	40-80	18-60	1.15-1.40	0.06-2	0.13-0.17	3.0-5.9	0.0-1.0	.28	.28	
	16-38	0-20	40-65	35-60	1.15-1.40	0.06-0.2	0.13-0.17	3.0-5.9	0.0-1.0	.28	.28	
	38-72	0-50	40-100	0-60	1.15-1.40	0.06-0.2	0.12-0.20	3.0-5.9	0.0-1.0	.28	.28	
140D,140E:												
Dunkirk---------------	0-4	0-50	50-80	0-27	1.35-1.55	0.6-2	0.16-0.21	0.0-2.9	3.0-6.0	.49	.49	4
	4-14	0-82	0-80	0-27	1.40-1.70	0.6-2	0.16-0.20	0.0-2.9	1.0-3.0	.49	.49	
	14-48	0-82	0-80	18-35	1.40-1.75	0.2-0.6	0.16-0.20	0.0-2.9	0.0-2.0	.49	.49	
	48-72	0-100	0-100	0-40	1.40-1.65	0.2-0.6	0.12-0.20	0.0-2.9	0.0-1.0	.64	.64	
185C,185D:												
Onoville--------------	0-8	15-32	50-80	10-27	1.25-1.50	0.6-2	0.16-0.24	0.0-2.9	3.0-7.0	.28	.32	3
	8-22	15-52	28-80	18-35	1.35-1.65	0.6-2	0.12-0.19	3.0-5.9	0.0-1.0	.24	.28	
	22-65	15-52	20-73	18-35	1.65-1.85	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.24	.28	
	65-72	0-52	0-80	18-60	1.55-1.80	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.24	.32	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors		
										Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
187B,187C:												
Shongo----------------	0-6	15-32	50-80	0-27	1.20-1.40	0.2-2	0.18-0.21	0.0-2.9	4.0-7.0	.28	.32	3
	6-24	15-52	28-80	18-35	1.20-1.40	0.2-2	0.16-0.20	3.0-5.9	0.0-1.0	.43	.43	
	24-56	15-52	20-80	18-35	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	
	56-72	15-52	20-80	0-40	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	
188B,188C,188D:												
Cavode----------------	0-7	0-50	50-80	18-27	1.20-1.40	0.2-2	0.18-0.22	0.0-2.9	3.0-7.0	.43	.43	3
	7-14	0-50	40-80	18-60	1.30-1.55	0.2-2	0.10-0.14	3.0-5.9	0.0-1.0	.28	.28	
	14-44	0-45	0-65	35-60	1.30-1.55	0.06-0.2	0.07-0.16	3.0-5.9	0.0-1.0	.28	.32	
	44-68	0-45	0-65	27-60	1.50-1.75	0.06-0.2	0.05-0.15	3.0-5.9	0.0-1.0	.28	.32	
	68-72	---	---	---	---	0.0000-0.2	---	---	---	---	---	
189B,189C:												
Portville-------------	0-7	15-20	45-73	27-35	1.20-1.40	0.2-2	0.18-0.22	0.0-2.9	4.0-7.0	.32	.37	3
	7-22	15-52	28-80	18-35	1.20-1.40	0.2-2	0.16-0.22	3.0-5.9	0.0-1.0	.43	.43	
	22-50	15-52	20-80	18-35	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	
	50-72	15-52	20-80	0-40	1.30-1.60	0.06-0.6	0.00-0.00	3.0-5.9	0.0-1.0	.28	.37	
195C,195D,195E:												
Mandy-----------------	0-2	0-50	50-80	0-27	1.20-1.50	0.6-2	0.08-0.12	0.0-2.9	0.5-3.0	.24	.32	3
	2-24	0-52	28-80	0-27	1.20-1.60	0.6-2	0.04-0.10	0.0-2.9	0.0-1.0	.17	.24	
	24-33	0-52	28-80	0-27	1.20-1.60	0.6-2	0.04-0.10	0.0-2.9	0.0-1.0	.17	.24	
	33-43	---	---	---	---	0.0000-20	---	---	---	---	---	
199C,199D:												
Buchanan--------------	0-6	15-32	50-80	0-27	1.20-1.40	0.6-2	0.14-0.20	0.0-2.9	2.0-4.0	.28	.32	3
	6-33	15-80	0-80	18-35	1.30-1.50	0.6-2	0.12-0.16	3.0-5.9	0.0-0.5	.32	.32	
	33-45	15-80	0-80	18-35	1.40-1.70	0.06-0.2	0.00-0.00	0.0-2.9	0.0-0.5	.32	.37	
	45-72	15-80	0-80	0-40	1.30-1.60	0.06-0.2	0.00-0.00	3.0-5.9	0.0-0.5	.32	.37	
289B,289C,289D,289E, 289F:												
Ceres-----------------	0-7	15-32	50-80	0-27	1.20-1.50	0.6-6	0.14-0.18	0.0-2.9	1.0-3.0	.24	.32	4
	7-29	15-52	20-80	18-35	1.40-1.70	0.6-6	0.12-0.16	0.0-2.9	0.0-0.5	.24	.28	
	29-44	15-52	20-80	18-40	1.30-1.60	0.6-6	0.04-0.08	0.0-2.9	0.0-0.5	.17	.28	
	44-54	---	---	---	---	0.0000-0.06	---	---	---	---	---	
400:												
Wakeville-------------	0-10	0-50	50-80	0-17	1.15-1.40	0.6-2	0.18-0.21	0.0-2.9	2.0-6.0	.43	.43	5
	10-43	0-85	0-80	0-17	1.15-1.45	0.6-2	0.18-0.19	0.0-2.9	0.0-2.0	.49	.49	
	43-52	0-91	0-80	0-17	1.25-1.55	0.6-2	0.12-0.19	0.0-2.9	0.0-1.0	.49	.49	
	52-72	32-91	0-50	0-17	1.25-1.55	0.6-2	0.12-0.19	0.0-2.9	0.0-1.0	.49	.64	

Table 22.—Physical Properties of the Soils—Continued

Map symbol and soil name	Depth	Sand	Silt	Clay	Moist bulk density	Permea- bility (Ksat)	Available water capacity	Linear extensi- bility	Organic matter	Erosion factors Kw	Kf	T
	In	Pct	Pct	Pct	g/cc	In/hr	In/in	Pct	Pct			
496B,496C,496D,496E, 496F:												
Gilpin----------------	0-4	15-32	50-80	0-27	1.20-1.40	0.6-2	0.12-0.16	0.0-2.9	2.0-4.0	.24	.32	3
	4-26	15-52	20-80	18-35	1.20-1.50	0.6-2	0.12-0.16	0.0-2.9	0.0-1.0	.24	.28	
	26-35	15-52	28-80	0-40	1.20-1.50	0.6-2	0.08-0.12	0.0-2.9	0.0-1.0	.24	.32	
	35-45	---	---	---	---	0.0000-0.06	---	---	---	---	---	
497D,497E,497F:												
Rayne-----------------	0-4	15-32	50-80	0-27	1.20-1.40	0.6-2	0.12-0.16	0.0-2.9	2.0-4.0	.24	.32	4
	4-38	15-52	20-80	18-35	1.40-1.60	0.6-2	0.12-0.16	0.0-2.9	0.0-1.0	.20	.24	
	38-72	15-52	20-80	0-40	1.40-1.60	0.6-2	0.10-0.16	0.0-2.9	0.0-1.0	.20	.28	
498E:												
Rayne-----------------	0-4	15-32	50-80	0-27	1.20-1.40	0.6-2	0.12-0.16	0.0-2.9	2.0-4.0	.24	.32	4
	4-38	15-52	20-80	18-35	1.40-1.60	0.6-2	0.12-0.16	0.0-2.9	0.0-1.0	.20	.24	
	38-72	15-52	28-80	0-40	1.40-1.60	0.6-2	0.10-0.16	0.0-2.9	0.0-1.0	.20	.28	
800:												
Holderton-------------	0-6	15-50	50-80	0-17	1.15-1.40	0.6-2	0.18-0.21	0.0-2.9	2.0-6.0	.37	.37	5
	6-36	15-85	0-80	0-17	1.15-1.45	0.6-2	0.10-0.20	0.0-2.9	0.0-1.0	.28	.28	
	36-72	15-85	0-80	0-17	1.25-1.55	0.6-6	0.01-0.10	0.0-2.9	0.0-1.0	.20	.24	
PG:												
Pits, Gravel----------	---	---	---	---	---	---	---	---	---	---	---	-
Ur:												
Urban Land------------	---	---	---	---	---	---	---	---	---	---	---	-
W:												
Water-----------------	---	---	---	---	---	---	---	---	---	---	---	-

Table 23.—Chemical Soil Properties

(Absence of an entry indicates that data were not estimated.)

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
1:		
Udifluvents	0-9	4.5-7.3
	9-70	4.5-8.4
Fluvaquents	0-12	4.5-7.3
	12-72	4.5-8.4
2:		
Hamlin	0-10	5.1-7.3
	10-17	5.1-7.3
	17-36	5.6-7.8
	36-72	5.6-7.8
3:		
Tioga	0-8	5.1-7.3
	8-34	5.1-7.3
	34-72	5.6-7.8
4:		
Teel	0-8	5.1-7.3
	8-34	5.1-7.3
	34-72	5.6-7.8
5:		
Wayland	0-9	5.1-7.8
	9-25	5.1-7.8
	25-72	5.6-8.4
6A:		
Wyalusing	0-6	5.1-6.5
	6-27	5.1-6.5
	27-72	5.1-6.5
7A:		
Philo	0-8	4.5-6.0
	8-34	4.5-6.0
	34-46	4.5-6.0
	46-72	4.5-6.0
8:		
Middlebury	0-8	5.1-6.5
	8-30	5.6-7.3
	30-72	5.6-7.3
9:		
Pawling	0-9	5.1-6.0
	9-28	5.1-6.0
	28-72	5.6-7.3
10:		
Atkins	0-4	4.5-5.5
	4-38	4.5-5.5
	38-72	4.5-6.0
11B,11C,11D,11E,11F:		
Ischua	0-6	4.5-6.0
	6-23	4.5-6.0
	23-28	4.5-6.5
	28-38	---

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
12B,12C,12D,12E:		
Franklinville--------	0-3	4.5-6.0
	3-32	4.5-6.0
	32-42	4.5-6.0
	42-72	5.1-6.5
14B,14C:		
Hornellsville--------	0-5	3.5-5.5
	5-34	4.5-5.5
	34-48	---
15B,15C,15D:		
Willdin--------------	0-6	4.5-6.0
	6-24	4.5-6.0
	24-60	4.5-6.5
	60-72	5.1-6.5
16A,16B,16C:		
Almond---------------	0-7	4.5-6.0
	7-37	4.5-6.0
	37-72	5.1-7.3
17B,17C,17D,17E:		
Salamanca------------	0-8	4.5-6.0
	8-16	4.5-6.0
	16-37	4.5-6.0
	37-72	4.5-6.5
18A:		
Pope-----------------	0-10	4.5-5.5
	10-38	4.5-5.5
	38-72	4.5-5.5
19A,19B:		
Olean----------------	0-9	4.5-6.0
	9-23	4.5-6.0
	23-36	4.5-6.0
	36-72	4.5-7.3
20A,20B,20C,20D:		
Unadilla-------------	0-9	4.5-6.0
	9-55	4.5-6.0
	55-72	5.1-7.8
22A,22B:		
Allard---------------	0-9	4.5-6.0
	9-34	4.5-6.0
	34-72	5.1-7.3
25A,25B,25C,25D,25E, 25F:		
Chenango-------------	0-9	4.5-6.0
	9-30	4.5-6.0
	30-72	5.1-7.8
26A,26B:		
Chenango, fan--------	0-9	4.5-6.0
	9-45	4.5-6.0
	45-72	5.1-7.8

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
27A,27B:		
Castile----------------	0-10	4.5-6.0
	10-30	4.5-6.0
	30-72	5.1-7.3
28A:		
Scio------------------	0-9	4.5-7.0
	9-50	4.5-6.0
	50-72	5.1-7.8
29A,29B,29C,29D,29E:		
Chenango--------------	0-9	4.5-6.0
	9-30	4.5-6.0
	30-72	5.1-7.8
31B,31C:		
Collamer--------------	0-6	5.1-7.3
	6-24	5.1-7.3
	24-45	5.6-7.8
	45-72	6.1-8.4
32A,32B:		
Churchville-----------	0-14	5.6-7.3
	14-37	6.1-7.8
	37-72	7.4-8.4
33A:		
Wallington------------	0-8	4.5-6.0
	8-14	4.5-6.0
	14-38	4.5-7.3
	38-72	5.6-7.3
34:		
Getzville-------------	0-9	5.1-7.3
	9-24	5.6-7.3
	24-72	6.6-7.8
35A,35B,35C:		
Rhinebeck-------------	0-9	5.1-7.3
	9-13	5.1-7.8
	13-38	5.1-7.8
	38-72	6.1-8.4
36:		
Canadice--------------	0-8	4.5-6.5
	8-42	4.5-7.8
	42-72	6.6-8.4
37A,37B:		
Tonawanda-------------	0-9	5.1-7.3
	9-38	5.1-7.3
	38-72	5.6-7.8
38A,38B:		
Niagara---------------	0-12	5.1-7.3
	12-36	5.6-7.8
	36-72	6.6-8.4
39A:		
Halsey----------------	0-6	5.6-7.3
	6-34	5.6-7.3
	34-72	6.1-8.4

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
40A,40B,40C:		
Williamson-----------	0-8	4.5-6.0
	8-20	4.5-6.0
	20-38	4.5-6.0
	38-72	5.1-7.3
41A,41B:		
Barcelona------------	0-9	5.6-7.3
	9-36	5.6-7.8
	36-46	5.6-7.8
	46-56	---
42A,42B:		
Elnora---------------	0-7	3.5-6.5
	7-27	3.5-6.5
	27-72	5.1-7.3
43:		
Canandaigua, silt loam----------------	0-9	5.6-7.8
	9-32	5.6-7.8
	32-72	6.1-8.4
44:		
Canandaigua, mucky silt loam-----------	0-10	5.6-7.8
	10-32	5.6-7.8
	32-72	6.1-8.4
45:		
Canandaigua, acid substratum----------	0-8	5.6-7.8
	8-32	5.6-7.8
	32-72	5.6-7.3
46:		
Swormville-----------	0-8	5.1-7.3
	8-31	5.6-7.3
	31-35	5.6-7.3
	35-72	6.1-7.8
47A:		
Minoa----------------	0-9	5.1-7.3
	9-32	5.6-7.3
	32-36	5.6-7.3
	36-72	5.6-8.4
48A,48B,48C:		
Colonie--------------	0-9	4.5-6.5
	9-47	4.5-6.5
	47-72	5.6-7.3
49A:		
Red Hook-------------	0-9	5.1-6.5
	9-32	5.6-7.3
	32-72	5.6-7.8
50A,50B,50C:		
Canaseraga-----------	0-5	4.5-6.0
	5-23	4.5-6.0
	23-28	5.1-7.3
	28-72	5.6-8.4

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
51B,51C,51D,51E,51F:		
Chadakoin------------	0-9	4.5-6.0
	9-33	4.5-6.0
	33-54	5.1-6.5
	54-72	5.1-6.5
52B,52C,52D,52E,52F:		
Valois---------------	0-6	3.5-6.0
	6-27	3.5-6.0
	27-48	3.5-6.0
	48-72	4.5-7.3
53C:		
Valois---------------	0-6	3.5-6.0
	6-27	3.5-6.0
	27-48	3.5-6.0
	48-72	4.5-7.3
Volusia--------------	0-7	4.5-6.0
	7-16	4.5-6.5
	16-45	5.1-6.5
	45-72	5.1-7.8
Mardin---------------	0-6	4.5-6.0
	6-17	4.5-6.0
	17-41	4.5-6.5
	41-72	5.1-7.3
55A,55B,55C:		
Darien---------------	0-7	5.1-7.3
	7-14	5.1-7.3
	14-38	5.1-7.3
	38-72	7.4-8.4
56B,56C,56D:		
Chautauqua-----------	0-9	5.6-6.5
	9-36	5.1-6.5
	36-72	5.1-6.5
57A,57B,57C:		
Busti----------------	0-8	5.6-7.3
	8-13	5.6-7.3
	13-39	5.6-7.3
	39-72	5.6-7.3
58B,58C:		
Rushford-------------	0-4	4.5-6.5
	4-21	4.5-6.0
	21-28	4.5-6.0
	28-36	4.5-6.5
	36-72	4.5-6.5
59B,59C,59D:		
Yorkshire------------	0-8	4.5-6.5
	8-19	4.5-6.0
	19-56	4.5-6.5
	56-72	5.1-7.3

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
60A,60B,60C,60D:		
Napoli	0-9	4.5-6.5
	9-23	4.5-6.0
	23-46	4.5-6.5
	46-72	5.1-7.3
61B,61C,61D,61E,61F:		
Schuyler	0-6	4.5-6.0
	6-35	4.5-6.0
	35-72	4.5-6.0
62B,62C,62D:		
Mardin	0-6	4.5-6.0
	6-17	4.5-6.0
	17-41	4.5-6.5
	41-72	5.1-7.3
63B,63C,63D:		
Langford	0-7	4.5-6.5
	7-25	5.1-7.3
	25-44	5.1-7.8
	44-72	6.6-8.4
64C:		
Mardin	0-6	4.5-6.0
	6-17	4.5-6.0
	17-41	4.5-6.5
	41-72	5.1-7.3
66B:		
Volusia	0-7	4.5-6.0
	7-16	4.5-6.5
	16-45	5.1-6.5
	45-72	5.1-7.8
67A,67B:		
Dalton	0-9	4.5-6.0
	9-17	4.5-6.0
	17-29	5.1-6.0
	29-72	5.6-7.3
68A,68B,68C:		
Volusia	0-7	4.5-6.0
	7-16	4.5-6.5
	16-45	5.1-6.5
	45-72	5.1-7.8
69A,69B,69C:		
Erie	0-9	5.1-6.5
	9-14	5.1-6.5
	14-45	5.6-7.8
	45-72	6.1-8.4
71E,71F:		
Mongaup	0-4	3.5-5.5
	4-27	3.5-6.0
	27-37	---
72B,72C,72D,72E,72F:		
Towerville	0-7	4.5-6.0
	7-23	4.5-6.0
	23-32	4.5-6.0
	32-42	---

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
73B,73C:		
Gretor	0-8	4.5-6.0
	8-21	4.5-6.0
	21-25	4.5-6.0
	25-29	---
74:		
Ashville	0-9	5.1-7.3
	9-44	5.6-7.3
	44-72	5.6-8.4
75:		
Alden	0-6	5.1-7.3
	6-25	5.6-7.3
	25-72	5.6-7.8
76A,76B,76C:		
Orpark	0-8	4.5-6.1
	8-22	4.5-5.5
	22-24	4.5-5.5
	24-26	4.5-5.5
	26-36	---
77A:		
Chippewa	0-6	4.5-6.5
	6-19	4.5-6.5
	19-41	5.1-7.3
	41-72	5.6-8.4
78A,78B,78C,78D:		
Hornell	0-8	3.5-5.5
	8-28	4.5-5.5
	28-34	4.5-5.5
	34-44	---
78F:		
Hornell	0-8	3.5-5.5
	8-28	4.5-5.5
	28-34	4.5-5.5
	34-44	---
Hudson	0-7	5.1-7.3
	7-16	5.1-7.3
	16-38	5.6-7.8
	38-72	6.6-8.4
79B,79C,79D,79E,79F:		
Mongaup	0-4	3.5-5.5
	4-27	3.5-6.0
	27-37	---
80A,80B,80C:		
Fremont	0-9	4.5-6.3
	9-39	4.5-6.0
	39-72	5.1-7.3
81B,81C,81D,81E:		
Varysburg	0-5	5.1-6.0
	5-22	5.1-6.0
	22-33	5.1-6.0
	33-48	6.1-8.4
	48-72	6.1-8.4

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
82F:		
Rock outcrop	0-60	---
Manlius	0-4	3.5-6.0
	4-23	3.5-6.0
	23-34	4.5-6.5
	34-44	---
84B,84C:		
Elko	0-6	3.5-5.5
	6-26	3.5-5.5
	26-64	3.5-5.5
	64-72	3.5-5.5
85B,85C,85D:		
Onoville	0-8	4.5-5.5
	8-22	4.5-5.5
	22-65	4.5-5.5
	65-72	4.5-6.0
86B,86C,86D:		
Eldred	0-3	3.5-5.5
	3-14	3.5-5.5
	14-42	3.5-5.5
	42-72	3.5-5.5
87B,87C:		
Shongo	0-6	4.5-6.0
	6-24	4.5-6.0
	24-56	4.5-6.0
	56-72	4.5-6.0
88A,88B,88C,88D:		
Ivory	0-6	4.5-6.0
	6-14	4.5-6.0
	14-48	4.5-6.0
	48-72	4.5-6.0
89B,89C:		
Portville	0-7	4.5-6.0
	7-22	4.5-6.0
	22-50	4.5-6.0
	50-72	4.5-6.5
90A,90B:		
Brinkerton	0-7	4.5-6.0
	7-25	4.5-6.0
	25-45	4.5-6.0
	45-72	5.1-6.5
91A:		
Palms	0-12	5.1-7.8
	12-32	5.1-7.8
	32-72	6.1-8.4
92:		
Carlisle	0-72	4.5-7.8
93:		
Saprists, inundated	0-38	5.1-7.3
	38-72	5.1-8.4

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
94B,94C:		
Frewsburg------------	0-6	4.5-5.5
	6-18	4.5-5.5
	18-38	4.5-5.5
	38-48	---
95B,95C,95D,95E,95F:		
Mandy----------------	0-2	3.5-5.5
	2-24	3.5-5.5
	24-33	3.5-5.5
	33-43	---
96B,96C,96D,96E,96F:		
Carrollton-----------	0-2	4.5-5.5
	2-23	4.5-5.5
	23-30	4.5-5.5
	30-40	---
97B,97C,97D,97E,97F:		
Kinzua---------------	0-3	4.5-5.5
	3-45	4.5-5.5
	45-72	4.5-5.5
98D,98E:		
Kinzua---------------	0-3	4.5-5.5
	3-45	4.5-5.5
	45-72	4.5-5.5
99B,99C,99D:		
Buchanan-------------	0-6	3.5-5.5
	6-33	3.5-5.5
	33-45	3.5-5.5
	45-72	3.5-5.5
100:		
Udorthents-----------	0-4	4.5-8.4
	4-70	4.5-8.4
101:		
Udorthents, refuse substratum----------	0-24	4.5-8.4
	24-70	---
102C:		
Mandy----------------	0-2	3.5-5.5
	2-24	3.5-5.5
	24-33	3.5-5.5
	33-43	---
Rock outcrop---------	0-60	---
103C:		
Knapp Creek----------	0-3	3.5-5.5
	3-11	3.5-5.5
	11-22	3.5-5.5
	22-48	3.5-5.5
	48-58	3.5-5.5
	58-68	---
Rock outcrop---------	0-60	---

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
104B,104C,104D,104E:		
Flatiron	0-1	3.5-5.5
	1-2	3.5-5.5
	2-36	3.5-5.5
	36-47	3.5-5.5
	47-60	3.5-5.5
	60-72	3.5-5.5
108D,108E,108F:		
Hartleton	0-10	4.5-5.5
	10-38	4.5-5.5
	38-58	4.5-5.5
	58-68	---
131:		
Lamson	0-16	5.6-7.8
	16-35	6.1-8.4
	35-72	6.1-8.4
132B,132C:		
Wiscoy	0-7	4.5-7.3
	7-12	4.5-7.3
	12-36	4.5-7.3
	36-72	4.5-7.3
135C,135D,135E:		
Hudson	0-7	5.1-7.3
	7-16	5.1-7.3
	16-38	5.6-7.8
	38-72	6.6-8.4
140D,140E:		
Dunkirk	0-4	5.1-6.5
	4-14	5.1-7.3
	14-48	5.6-7.8
	48-72	6.1-8.4
185C,185D:		
Onoville	0-8	4.5-5.5
	8-22	4.5-5.5
	22-65	4.5-5.5
	65-72	4.5-6.0
187B,187C:		
Shongo	0-6	4.5-6.0
	6-24	4.5-6.0
	24-56	4.5-6.0
	56-72	4.5-6.0
188B,188C,188D:		
Cavode	0-7	3.5-5.5
	7-14	3.5-5.5
	14-44	3.5-5.5
	44-68	3.5-5.5
	68-72	---
189B,189C:		
Portville	0-7	4.5-6.0
	7-22	4.5-6.0
	22-50	4.5-6.0
	50-72	4.5-6.5

Table 23.—Chemical Soil Properties—Continued

Map symbol and soil name	Depth	Soil reaction
	Inches	pH
195C,195D,195E:		
Mandy----------------	0-2	3.5-5.5
	2-24	3.5-5.5
	24-33	3.5-5.5
	33-43	---
199C,199D:		
Buchanan-------------	0-6	3.5-5.5
	6-33	3.5-5.5
	33-45	3.5-5.5
	45-72	3.5-5.5
289B,289C,289D,289E, 289F:		
Ceres----------------	0-7	3.5-7.3
	7-29	3.5-7.3
	29-44	4.5-6.0
	44-54	---
400:		
Wakeville------------	0-10	5.6-7.3
	10-43	5.6-7.3
	43-52	5.6-7.8
	52-72	5.6-7.8
496B,496C,496D,496E, 496F:		
Gilpin---------------	0-4	3.5-5.5
	4-26	3.5-5.5
	26-35	3.5-5.5
	35-45	---
497D,497E,497F:		
Rayne----------------	0-4	4.5-5.5
	4-38	4.5-5.5
	38-72	4.5-5.5
498E:		
Rayne----------------	0-4	4.5-5.5
	4-38	4.5-5.5
	38-72	4.5-5.5
800:		
Holderton------------	0-6	5.6-7.3
	6-36	5.6-7.3
	36-72	6.1-7.8
PG:		
Pits, gravel---------	---	---
Ur:		
Urban land-----------	---	---
W:		
Water----------------	---	---

Table 24.—Water Features

(Depths of layers are in feet. See text for definitions of terms used in this table. Estimates of the frequency of ponding and flooding apply to the whole year rather than to individual months. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
1:									
Udifluvents	B								
		January	2.0-6.0	>6.0	---	---	None	Brief	Frequent
		February	2.0-6.0	>6.0	---	---	None	Brief	Frequent
		March	2.0-6.0	>6.0	---	---	None	Brief	Frequent
		April	2.0-6.0	>6.0	---	---	None	Brief	Frequent
		May	2.0-6.0	>6.0	---	---	None	Brief	Frequent
		November	2.0-6.0	>6.0	---	---	None	Brief	Frequent
		December	2.0-6.0	>6.0	---	---	None	Brief	Frequent
Fluvaquents	D								
		January	0.0	>6.0	---	---	None	Brief	Frequent
		February	0.0	>6.0	---	---	None	Brief	Frequent
		March	0.0	>6.0	---	---	None	Brief	Frequent
		April	0.0	>6.0	---	---	None	Brief	Frequent
		May	0.0	>6.0	---	---	None	Brief	Frequent
		June	0.0	>6.0	---	---	None	Brief	Frequent
		July	0.0	>6.0	---	---	None	Brief	Frequent
		August	0.0	>6.0	---	---	None	Brief	Frequent
		September	0.0	>6.0	---	---	None	Brief	Frequent
		October	0.0	>6.0	---	---	None	Brief	Frequent
		November	0.0	>6.0	---	---	None	Brief	Frequent
		December	0.0	>6.0	---	---	None	Brief	Frequent
2:									
Hamlin	B								
		January	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		February	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		March	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		April	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		May	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		November	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		December	3.0-6.0	>6.0	---	---	None	Brief	Occasional
3:									
Tioga	B								
		January	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		February	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		March	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		April	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		May	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		November	3.0-6.0	>6.0	---	---	None	Brief	Occasional
		December	3.0-6.0	>6.0	---	---	None	Brief	Occasional

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
4:									
Teel	B								
		January	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		February	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		March	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		April	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		May	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		November	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		December	1.5-2.0	>6.0	---	---	None	Brief	Occasional
5:									
Wayland	C/D								
		January	0.0-0.5	>6.0	---	---	None	Long	Frequent
		February	0.0-0.5	>6.0	---	---	None	Long	Frequent
		March	0.0-0.5	>6.0	---	---	None	Long	Frequent
		April	0.0-0.5	>6.0	---	---	None	Long	Frequent
		May	0.0-0.5	>6.0	---	---	None	Long	Frequent
		June	0.0-0.5	>6.0	---	---	None	Long	Frequent
		October	0.0-0.5	>6.0	---	---	None	Long	Frequent
		November	0.0-0.5	>6.0	---	---	None	Long	Frequent
		December	0.0-0.5	>6.0	---	---	None	Long	Frequent
6A:									
Wyalusing	D								
		January	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		February	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		March	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		April	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		May	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		November	0.0-0.5	>6.0	---	---	None	Brief	Frequent
		December	0.0-0.5	>6.0	---	---	None	Brief	Frequent
7A:									
Philo	B								
		January	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		February	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		March	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		April	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		May	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		November	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		December	1.5-2.0	>6.0	---	---	None	Brief	Occasional
8:									
Middlebury	B								
		January	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		February	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		March	1.5-2.0	>6.0	---	---	None	Brief	Occasional

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
8:									
Middlebury		April	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		May	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		November	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		December	1.5-2.0	>6.0	---	---	None	Brief	Occasional
9:									
Pawling	B								
		January	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		February	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		March	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		April	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		May	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		November	1.5-2.0	>6.0	---	---	None	Brief	Occasional
		December	1.5-2.0	>6.0	---	---	None	Brief	Occasional
10:									
Atkins	D								
		January	0.0-0.5	>6.0	---	---	None	Long	Frequent
		February	0.0-0.5	>6.0	---	---	None	Long	Frequent
		March	0.0-0.5	>6.0	---	---	None	Long	Frequent
		April	0.0-0.5	>6.0	---	---	None	Long	Frequent
		May	0.0-0.5	>6.0	---	---	None	Long	Frequent
		June	0.0-0.5	>6.0	---	---	None	Long	Frequent
		October	0.0-0.5	>6.0	---	---	None	Long	Frequent
		November	0.0-0.5	>6.0	---	---	None	Long	Frequent
		December	0.0-0.5	>6.0	---	---	None	Long	Frequent
11B,11C,11D,11E,11F:									
Ischua	B								
		January	1.5-2.0	1.7-3.3	---	---	None	---	None
		February	1.5-2.0	1.7-3.3	---	---	None	---	None
		March	1.5-2.0	1.7-3.3	---	---	None	---	None
		April	1.5-2.0	1.7-3.3	---	---	None	---	None
		May	1.5-2.0	1.7-3.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	1.7-3.3	---	---	None	---	None
		December	1.5-2.0	1.7-3.3	---	---	None	---	None
12B,12C:									
Franklinville	B								
		January	3.0-6.0	>6.0	---	---	None	---	None
		February	3.0-6.0	>6.0	---	---	None	---	None
		March	3.0-6.0	>6.0	---	---	None	---	None
		April	3.0-6.0	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
12B,12C:									
Franklinville		May	3.0-6.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	3.0-6.0	>6.0	---	---	None	---	None
		December	3.0-6.0	>6.0	---	---	None	---	None
12D,12E:									
Franklinville	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
14B,14C:									
Hornellsville	D								
		January	0.5-1.5	1.7-3.3	---	---	None	---	None
		February	0.5-1.5	1.7-3.3	---	---	None	---	None
		March	0.5-1.5	1.7-3.3	---	---	None	---	None
		April	0.5-1.5	1.7-3.3	---	---	None	---	None
		May	0.5-1.5	1.7-3.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.7-3.3	---	---	None	---	None
		December	0.5-1.5	1.7-3.3	---	---	None	---	None
15B,15C,15D:									
Willdin	C								
		January	1.2-2.0	1.3-2.2	---	---	None	---	None
		February	1.2-2.0	1.3-2.2	---	---	None	---	None
		March	1.2-2.0	1.3-2.2	---	---	None	---	None
		April	1.2-2.0	1.3-2.2	---	---	None	---	None
		May	1.2-2.0	1.3-2.2	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
15B,15C,15D:		August	---	---	---	---	None	---	None
Willdin-------------------		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.2-2.0	1.3-2.2	---	---	None	---	None
		December	1.2-2.0	1.3-2.2	---	---	None	---	None
16A,16B,16C:									
Almond--------------------	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
17B,17C,17D,17E:									
Salamanca-----------------	B								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
18A:									
Pope----------------------	B								
		January	---	---	---	---	None	Brief	Occasional
		February	---	---	---	---	None	Brief	Occasional
		March	---	---	---	---	None	Brief	Occasional
		April	---	---	---	---	None	Brief	Occasional
		May	---	---	---	---	None	Brief	Occasional
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
18A:									
Pope		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	Brief	Occasional
		December	---	---	---	---	None	Brief	Occasional
19A,19B:									
Olean	B								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
20A,20B,20C,20D:									
Unadilla	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
22A,22B:									
Allard	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
22A,22B:									
Allard		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
25A,25B,25C,25D,25E,25F:									
Chenango	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
26A,26B:									
Chenango, fan	A								
		January	3.0-6.0	>6.0	---	---	None	Very brief	Rare
		February	3.0-6.0	>6.0	---	---	None	Very brief	Rare
		March	3.0-6.0	>6.0	---	---	None	Very brief	Rare
		April	3.0-6.0	>6.0	---	---	None	Very brief	Rare
		May	3.0-6.0	>6.0	---	---	None	Very brief	Rare
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	3.0-6.0	>6.0	---	---	None	Very brief	Rare
		December	3.0-6.0	>6.0	---	---	None	Very brief	Rare
27A,27B:									
Castile	B								
		January	1.5-2.0	>6.0	---	---	None	---	---
		February	1.5-2.0	>6.0	---	---	None	---	---
		March	1.5-2.0	>6.0	---	---	None	---	---
		April	1.5-2.0	>6.0	---	---	None	---	---
		May	1.5-2.0	>6.0	---	---	None	---	---
		November	1.5-2.0	>6.0	---	---	None	---	---
		December	1.5-2.0	>6.0	---	---	None	---	---

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
28A:									
Scio	B								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
29A,29B,29C,29D,29E:									
Chenango	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
31B,31C:									
Collamer	C								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
32A,32B:									
Churchville----------------	D								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
33A:									
Wallington----------------	C								
		January	0.5-1.5	1.0-2.0	---	---	None	---	None
		February	0.5-1.5	1.0-2.0	---	---	None	---	None
		March	0.5-1.5	1.0-2.0	---	---	None	---	None
		April	0.5-1.5	1.0-2.0	---	---	None	---	None
		May	0.5-1.5	1.0-2.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.0-2.0	---	---	None	---	None
		December	0.5-1.5	1.0-2.0	---	---	None	---	None
34:									
Getzville-----------------	D								
		January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
35A,35B,35C:									
Rhinebeck	D								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
36:									
Canadice	D								
		January	0.0-1.0	>6.0	---	---	None	---	None
		February	0.0-1.0	>6.0	---	---	None	---	None
		March	0.0-1.0	>6.0	---	---	None	---	None
		April	0.0-1.0	>6.0	---	---	None	---	None
		May	0.0-1.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.0-1.0	>6.0	---	---	None	---	None
		December	0.0-1.0	>6.0	---	---	None	---	None
37A,37B:									
Tonawanda	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro- logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
38A,38B:									
Niagara-------------------	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
39A:									
Halsey--------------------	C/D								
		January	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		February	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	0.0-0.5	>6.0	---	---	None	---	None
		October	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		November	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		December	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
40A,40B,40C:									
Williamson----------------	C								
		January	1.2-1.8	1.2-2.0	---	---	None	---	None
		February	1.2-1.8	1.2-2.0	---	---	None	---	None
		March	1.2-1.8	1.2-2.0	---	---	None	---	None
		April	1.2-1.8	1.2-2.0	---	---	None	---	None
		May	1.2-1.8	1.2-2.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.2-1.8	1.2-2.0	---	---	None	---	None
		December	1.2-1.8	1.2-2.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
41A,41B:									
Barcelona	C								
		January	0.5-1.5	3.3-5.0	---	---	None	---	None
		February	0.5-1.5	3.3-5.0	---	---	None	---	None
		March	0.5-1.5	3.3-5.0	---	---	None	---	None
		April	0.5-1.5	3.3-5.0	---	---	None	---	None
		May	0.5-1.5	3.3-5.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	3.3-5.0	---	---	None	---	None
		December	0.5-1.5	3.3-5.0	---	---	None	---	None
42A,42B:									
Elnora	B								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
43:									
Canandaigua, silt loam	D								
		January	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		February	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	0.0-0.5	>6.0	---	---	None	---	None
		October	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		November	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		December	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
44:									
Canandaigua, mucky silt loam	D								
		January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-0.5	Long	Occasional	---	None
		July	0.0	>6.0	0.0-0.5	Long	Occasional	---	None
		August	0.0	>6.0	0.0-0.5	Long	Occasional	---	None
		September	0.0	>6.0	0.0-0.5	Long	Occasional	---	None
		October	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
45:									
Canandaigua, acid substratum	D								
		January	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		February	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		March	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		April	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		May	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		June	0.0-0.5	>6.0	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	0.0-0.5	>6.0	---	---	None	---	None
		October	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		November	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
		December	0.0-0.5	>6.0	0.0-0.5	Long	Frequent	---	None
46:									
Swormville	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
47A:									
Minoa	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
48A,48B,48C:									
Colonie	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
49A:									
Red Hook	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
50A,50B,50C:									
Canaseraga----------------	C								
		January	1.2-1.9	1.5-2.8	---	---	None	---	None
		February	1.2-1.9	1.5-2.8	---	---	None	---	None
		March	1.2-1.9	1.5-2.8	---	---	None	---	None
		April	1.2-1.9	1.5-2.8	---	---	None	---	None
		May	1.2-1.9	1.5-2.8	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.2-1.9	1.5-2.8	---	---	None	---	None
		December	1.2-1.9	1.5-2.8	---	---	None	---	None
51B,51C:									
Chadakoin-----------------	B								
		January	2.0-6.0	>6.0	---	---	None	---	None
		February	2.0-6.0	>6.0	---	---	None	---	None
		March	2.0-6.0	>6.0	---	---	None	---	None
		April	2.0-6.0	>6.0	---	---	None	---	None
		May	2.0-6.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	2.0-6.0	>6.0	---	---	None	---	None
		December	2.0-6.0	>6.0	---	---	None	---	None
51D,51E,51F:									
Chadakoin-----------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
52B,52C,52D,52E,52F:									
Valois	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
53C:									
Valois	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Volusia	C								
		January	0.5-1.5	0.8-1.8	---	---	None	---	None
		February	0.5-1.5	0.8-1.8	---	---	None	---	None
		March	0.5-1.5	0.8-1.8	---	---	None	---	None
		April	0.5-1.5	0.8-1.8	---	---	None	---	None
		May	0.5-1.5	0.8-1.8	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	0.8-1.8	---	---	None	---	None
		December	0.5-1.5	0.8-1.8	---	---	None	---	None
Mardin	C								
		January	1.1-2.0	1.2-2.2	---	---	None	---	None
		February	1.1-2.0	1.2-2.2	---	---	None	---	None
		March	1.1-2.0	1.2-2.2	---	---	None	---	None
		April	1.1-2.0	1.2-2.2	---	---	None	---	None
		May	1.1-2.0	1.2-2.2	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Mardin		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.1-2.0	1.2-2.2	---	---	None	---	None
		December	1.1-2.0	1.2-2.2	---	---	None	---	None
55A,55B,55C:									
Darien	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
56B,56C,56D:									
Chautauqua	C								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
57A,57B,57C:									
Busti	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
57A,57B,57C:									
Busti----------------------		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
58B,58C:									
Rushford------------------	B								
		January	1.1-2.0	1.2-2.3	---	---	None	---	None
		February	1.1-2.0	1.2-2.3	---	---	None	---	None
		March	1.1-2.0	1.2-2.3	---	---	None	---	None
		April	1.1-2.0	1.2-2.3	---	---	None	---	None
		May	1.1-2.0	1.2-2.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.1-2.0	1.2-2.3	---	---	None	---	None
		December	1.1-2.0	1.2-2.3	---	---	None	---	None
59B,59C,59D:									
Yorkshire-----------------	C								
		January	1.2-2.0	1.3-2.5	---	---	None	---	None
		February	1.2-2.0	1.3-2.5	---	---	None	---	None
		March	1.2-2.0	1.3-2.5	---	---	None	---	None
		April	1.2-2.0	1.3-2.5	---	---	None	---	None
		May	1.2-2.0	1.3-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.2-2.0	1.3-2.5	---	---	None	---	None
		December	1.2-2.0	1.3-2.5	---	---	None	---	None
60A,60B,60C,60D:									
Napoli--------------------	C								
		January	0.5-1.5	1.0-2.3	---	---	None	---	None
		February	0.5-1.5	1.0-2.3	---	---	None	---	None
		March	0.5-1.5	1.0-2.3	---	---	None	---	None
		April	0.5-1.5	1.0-2.3	---	---	None	---	None
		May	0.5-1.5	1.0-2.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
60A,60B,60C,60D:		September	---	---	---	---	None	---	None
Napoli		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.0-2.3	---	---	None	---	None
		December	0.5-1.5	1.0-2.3	---	---	None	---	None
61B,61C,61D,61E,61F:									
Schuyler	B								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
62B,62C,62D:									
Mardin	C								
		January	1.1-2.0	1.2-2.2	---	---	None	---	None
		February	1.1-2.0	1.2-2.2	---	---	None	---	None
		March	1.1-2.0	1.2-2.2	---	---	None	---	None
		April	1.1-2.0	1.2-2.2	---	---	None	---	None
		May	1.1-2.0	1.2-2.2	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.1-2.0	1.2-2.2	---	---	None	---	None
		December	1.1-2.0	1.2-2.2	---	---	None	---	None
63B,63C,63D:									
Langford	C								
		January	1.2-2.0	1.2-2.3	---	---	None	---	None
		February	1.2-2.0	1.2-2.3	---	---	None	---	None
		March	1.2-2.0	1.2-2.3	---	---	None	---	None
		April	1.2-2.0	1.2-2.3	---	---	None	---	None
		May	1.2-2.0	1.2-2.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.2-2.0	1.2-2.3	---	---	None	---	None
		December	1.2-2.0	1.2-2.3	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
64C:									
Mardin	C								
		January	1.1-2.0	1.2-2.2	---	---	None	---	None
		February	1.1-2.0	1.2-2.2	---	---	None	---	None
		March	1.1-2.0	1.2-2.2	---	---	None	---	None
		April	1.1-2.0	1.2-2.2	---	---	None	---	None
		May	1.1-2.0	1.2-2.2	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.1-2.0	1.2-2.2	---	---	None	---	None
		December	1.1-2.0	1.2-2.2	---	---	None	---	None
66B:									
Volusia	C								
		January	0.5-1.5	0.8-1.8	---	---	None	---	None
		February	0.5-1.5	0.8-1.8	---	---	None	---	None
		March	0.5-1.5	0.8-1.8	---	---	None	---	None
		April	0.5-1.5	0.8-1.8	---	---	None	---	None
		May	0.5-1.5	0.8-1.8	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	0.8-1.8	---	---	None	---	None
		December	0.5-1.5	0.8-1.8	---	---	None	---	None
67A, 67B:									
Dalton	C								
		January	0.5-1.5	1.0-1.8	---	---	None	---	None
		February	0.5-1.5	1.0-1.8	---	---	None	---	None
		March	0.5-1.5	1.0-1.8	---	---	None	---	None
		April	0.5-1.5	1.0-1.8	---	---	None	---	None
		May	0.5-1.5	1.0-1.8	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.0-1.8	---	---	None	---	None
		December	0.5-1.5	1.0-1.8	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
68A,68B,68C:									
Volusia	C								
		January	0.5-1.5	0.8-1.8	---	---	None	---	None
		February	0.5-1.5	0.8-1.8	---	---	None	---	None
		March	0.5-1.5	0.8-1.8	---	---	None	---	None
		April	0.5-1.5	0.8-1.8	---	---	None	---	None
		May	0.5-1.5	0.8-1.8	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	0.8-1.8	---	---	None	---	None
		December	0.5-1.5	0.8-1.8	---	---	None	---	None
69A,69B,69C:									
Erie	C								
		January	0.5-1.5	0.8-1.7	---	---	None	---	None
		February	0.5-1.5	0.8-1.7	---	---	None	---	None
		March	0.5-1.5	0.8-1.7	---	---	None	---	None
		April	0.5-1.5	0.8-1.7	---	---	None	---	None
		May	0.5-1.5	0.8-1.7	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	0.8-1.7	---	---	None	---	None
		December	0.5-1.5	0.8-1.7	---	---	None	---	None
71E,71F:									
Mongaup	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
72B,72C,72D,72E,72F:									
Towerville	B								
		January	1.5-2.0	1.7-3.3	---	---	None	---	None
		February	1.5-2.0	1.7-3.3	---	---	None	---	None
		March	1.5-2.0	1.7-3.3	---	---	None	---	None
		April	1.5-2.0	1.7-3.3	---	---	None	---	None
		May	---	---	---	---	None	---	None
72B,72C,72D,72E,72F:		June	---	---	---	---	None	---	None
Towerville		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	1.5-2.0	1.7-3.3	---	---	None	---	None
73B,73C:									
Gretor	C								
		January	0.5-1.5	1.7-3.3	---	---	None	---	None
		February	0.5-1.5	1.7-3.3	---	---	None	---	None
		March	0.5-1.5	1.7-3.3	---	---	None	---	None
		April	0.5-1.5	1.7-3.3	---	---	None	---	None
		May	0.5-1.5	1.7-3.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.7-3.3	---	---	None	---	None
		December	0.5-1.5	1.7-3.3	---	---	None	---	None
74:									
Ashville	D								
		January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
75:									
Alden----------------------	D								
		January	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		July	0.0	>6.0	0.0-0.5	Long	Occasional	---	None
		August	0.0	>6.0	0.0-0.5	Long	Occasional	---	None
		September	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		October	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		November	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	>6.0	0.0-1.0	Very long	Frequent	---	None
76A,76B,76C:									
Orpark---------------------	C								
		January	0.5-1.5	1.7-3.3	---	---	None	---	None
		February	0.5-1.5	1.7-3.3	---	---	None	---	None
		March	0.5-1.5	1.7-3.3	---	---	None	---	None
		April	0.5-1.5	1.7-3.3	---	---	None	---	None
		May	0.5-1.5	1.7-3.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.7-3.3	---	---	None	---	None
		December	0.5-1.5	1.7-3.3	---	---	None	---	None
77A:									
Chippewa-------------------	D								
		January	0.0-0.5	0.7-1.7	---	---	None	---	None
		February	0.0-0.5	0.7-1.7	---	---	None	---	None
		March	0.0-0.5	0.7-1.7	---	---	None	---	None
		April	0.0-0.5	0.7-1.7	---	---	None	---	None
		May	0.0-0.5	0.7-1.7	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.0-0.5	0.7-1.7	---	---	None	---	None
		December	0.0-0.5	0.7-1.7	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
78A,78B,78C,78D:									
Hornell	D								
		January	0.5-1.5	1.7-3.3	---	---	None	---	None
		February	0.5-1.5	1.7-3.3	---	---	None	---	None
		March	0.5-1.5	1.7-3.3	---	---	None	---	None
		April	0.5-1.5	1.7-3.3	---	---	None	---	None
		May	0.5-1.5	1.7-3.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.7-3.3	---	---	None	---	None
		December	0.5-1.5	1.7-3.3	---	---	None	---	None
78F:									
Hornell	D								
		January	0.5-1.5	1.7-3.3	---	---	None	---	None
		February	0.5-1.5	1.7-3.3	---	---	None	---	None
		March	0.5-1.5	1.7-3.3	---	---	None	---	None
		April	0.5-1.5	1.7-3.3	---	---	None	---	None
		May	0.5-1.5	1.7-3.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.7-3.3	---	---	None	---	None
		December	0.5-1.5	1.7-3.3	---	---	None	---	None
Hudson	C								
		January	1.3-2.0	>6.0	---	---	None	---	None
		February	1.3-2.0	>6.0	---	---	None	---	None
		March	1.3-2.0	>6.0	---	---	None	---	None
		April	1.3-2.0	>6.0	---	---	None	---	None
		May	1.3-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.3-2.0	>6.0	---	---	None	---	None
		December	1.3-2.0	>6.0	---	---	None	---	None
79B,79C,79D,79E,79F:									
Mongaup	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
79B,79C,79D,79E,79F:									
Mongaup-------------------		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
80A,80B,80C:									
Fremont-------------------	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None
81B,81C,81D,81E:									
Varysburg-----------------	B								
		January	1.5-2.8	>6.0	---	---	None	---	None
		February	1.5-2.8	>6.0	---	---	None	---	None
		March	1.5-2.8	>6.0	---	---	None	---	None
		April	1.5-2.8	>6.0	---	---	None	---	None
		May	1.5-2.8	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.8	>6.0	---	---	None	---	None
		December	1.5-2.8	>6.0	---	---	None	---	None
82F:									
Rock outcrop--------------	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
82F:									
Rock outcrop		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
Manlius	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
84B,84C:									
Elko	C								
		January	1.2-2.0	1.5-2.5	---	---	None	---	None
		February	1.2-2.0	1.5-2.5	---	---	None	---	None
		March	1.2-2.0	1.5-2.5	---	---	None	---	None
		April	1.2-2.0	1.5-2.5	---	---	None	---	None
		May	1.2-2.0	1.5-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.2-2.0	1.5-2.5	---	---	None	---	None
		December	1.2-2.0	1.5-2.5	---	---	None	---	None
85B,85C,85D:									
Onoville	C								
		January	1.2-2.0	1.3-3.0	---	---	None	---	None
		February	1.2-2.0	1.3-3.0	---	---	None	---	None
		March	1.2-2.0	1.3-3.0	---	---	None	---	None
		April	1.2-2.0	1.3-3.0	---	---	None	---	None
		May	1.2-2.0	1.3-3.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
85B,85C,85D:		October	---	---	---	---	None	---	None
Onoville		November	1.2-2.0	1.3-3.0	---	---	None	---	None
		December	1.2-2.0	1.3-3.0	---	---	None	---	None
86B,86C,86D:									
Eldred	C								
		January	1.5-2.0	>6.0	---	---	None	---	None
		February	1.5-2.0	>6.0	---	---	None	---	None
		March	1.5-2.0	>6.0	---	---	None	---	None
		April	1.5-2.0	>6.0	---	---	None	---	None
		May	1.5-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	>6.0	---	---	None	---	None
		December	1.5-2.0	>6.0	---	---	None	---	None
87B,87C:									
Shongo	C								
		January	0.5-1.5	1.3-2.5	---	---	None	---	None
		February	0.5-1.5	1.3-2.5	---	---	None	---	None
		March	0.5-1.5	1.3-2.5	---	---	None	---	None
		April	0.5-1.5	1.3-2.5	---	---	None	---	None
		May	0.5-1.5	1.3-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.3-2.5	---	---	None	---	None
		December	0.5-1.5	1.3-2.5	---	---	None	---	None
88A,88B,88C,88D:									
Ivory	C								
		January	0.5-1.5	>6.0	---	---	None	---	None
		February	0.5-1.5	>6.0	---	---	None	---	None
		March	0.5-1.5	>6.0	---	---	None	---	None
		April	0.5-1.5	>6.0	---	---	None	---	None
		May	0.5-1.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	---	None
		December	0.5-1.5	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
89B,89C:									
Portville	C								
		January	0.5-1.5	1.0-3.0	---	---	None	---	None
		February	0.5-1.5	1.0-3.0	---	---	None	---	None
		March	0.5-1.5	1.0-3.0	---	---	None	---	None
		April	0.5-1.5	1.0-3.0	---	---	None	---	None
		May	0.5-1.5	1.0-3.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.0-3.0	---	---	None	---	None
		December	0.5-1.5	1.0-3.0	---	---	None	---	None
90A,90B:									
Brinkerton	D								
		January	0.0-0.5	0.9-2.5	---	---	None	---	None
		February	0.0-0.5	0.9-2.5	---	---	None	---	None
		March	0.0-0.5	0.9-2.5	---	---	None	---	None
		April	0.0-0.5	0.9-2.5	---	---	None	---	None
		May	0.0-0.5	0.9-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	0.0-0.5	0.9-2.5	---	---	None	---	None
		October	0.0-0.5	0.9-2.5	---	---	None	---	None
		November	0.0-0.5	0.9-2.5	---	---	None	---	None
		December	0.0-0.5	0.9-2.5	---	---	None	---	None
91A:									
Palms	A/D								
		January	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	0.0-1.0	0.0-0.5	Long	Occasional	---	None
		July	0.0	0.0-1.0	0.0-0.5	Long	Occasional	---	None
		August	0.0	0.0-1.0	0.0-0.5	Long	Occasional	---	None
		September	0.0	0.0-1.0	0.0-0.5	Long	Occasional	---	None
		October	0.0	0.0-1.0	0.0-0.5	Long	Occasional	---	None
		November	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
92:									
Carlisle	A/D								
		January	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		July	0.0	0.0-1.0	0.0-0.5	Long	Occasional	---	None
		August	0.0-1.0	>6.0	0.0-0.5	Long	Occasional	---	None
		September	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		October	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		November	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
93:									
Saprists, inundated	A/D								
		January	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		February	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		March	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		April	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		May	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		June	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		July	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		August	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		September	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		October	0.0-1.0	>6.0	0.0-1.0	Very long	Frequent	---	None
		November	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
		December	0.0	0.0-1.0	0.0-1.0	Very long	Frequent	---	None
94B,94C:									
Frewsburg	C								
		January	0.5-1.5	1.7-3.3	---	---	None	---	None
		February	0.5-1.5	1.7-3.3	---	---	None	---	None
		March	0.5-1.5	1.7-3.3	---	---	None	---	None
		April	0.5-1.5	1.7-3.3	---	---	None	---	None
		May	0.5-1.5	1.7-3.3	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.7-3.3	---	---	None	---	None
		December	0.5-1.5	1.7-3.3	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
95B,95C,95D,95E,95F:									
Mandy	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
96B:									
Carrollton	C								
		January	2.0-3.3	2.0-3.3	---	---	None	---	None
		February	2.0-3.3	2.0-3.3	---	---	None	---	None
		March	2.0-3.3	2.0-3.3	---	---	None	---	None
		April	2.0-3.3	2.0-3.3	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	2.0-3.3	2.0-3.3	---	---	None	---	None
		December	2.0-3.3	2.0-3.3	---	---	None	---	None
96C,96D,96E,96F:									
Carrollton	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
97B,97C:									
Kinzua--------------------	B								
		January	4.0-6.0	>6.0	---	---	None	---	None
		February	4.0-6.0	>6.0	---	---	None	---	None
		March	4.0-6.0	>6.0	---	---	None	---	None
		April	4.0-6.0	>6.0	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	4.0-6.0	>6.0	---	---	None	---	None
		December	4.0-6.0	>6.0	---	---	None	---	None
97D,97E,97F:									
Kinzua--------------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
98D,98E:									
Kinzua--------------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
99B,99C,99D:									
Buchanan------------------	C								
		January	1.5-2.0	1.7-3.0	---	---	None	---	None
		February	1.5-2.0	1.7-3.0	---	---	None	---	None
		March	1.5-2.0	1.7-3.0	---	---	None	---	None
		April	1.5-2.0	1.7-3.0	---	---	None	---	None
		May	1.5-2.0	1.7-3.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	1.7-3.0	---	---	None	---	None
		December	1.5-2.0	1.7-3.0	---	---	None	---	None
100:									
Udorthents----------------	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
101:									
Udorthents, refuse substratum--------------	A								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
102C:									
Mandy	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
102C:									
Rock outcrop	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
103C:									
Knapp Creek	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table		Ponding			Flooding	
			Upper limit	Lower limit	Surface water depth	Duration	Frequency	Duration	Frequency
			Ft	Ft	Ft				
103C:									
Rock outcrop--------------	D								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
104B,104C,104D,104E:									
Flatiron------------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
104B,104C,104D,104E:		May	---	---	---	---	None	---	None
Flatiron------------------		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
108D,108E,108F:									
Hartleton-----------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
131:									
Lamson--------------------	B/D								
		January	0.0-0.5	>6.0	---	---	None	---	None
		February	0.0-0.5	>6.0	---	---	None	---	None
		March	0.0-0.5	>6.0	---	---	None	---	None
		April	0.0-0.5	>6.0	---	---	None	---	None
		May	0.0-0.5	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.0-0.5	>6.0	---	---	None	---	None
		December	0.0-0.5	>6.0	---	---	None	---	None
132B,132C:									
Wiscoy--------------------	C								
		January	0.5-1.5	0.7-1.7	---	---	None	---	None
		February	0.5-1.5	0.7-1.7	---	---	None	---	None
		March	0.5-1.5	0.7-1.7	---	---	None	---	None
		April	0.5-1.5	0.7-1.7	---	---	None	---	None
		May	0.5-1.5	0.7-1.7	---	---	None	---	None
132B,132C:		June	---	---	---	---	None	---	None
Wiscoy--------------------		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	0.7-1.7	---	---	None	---	None
		December	0.5-1.5	0.7-1.7	---	---	None	---	None
135C,135D,135E:									
Hudson--------------------	C								
		January	1.3-2.0	>6.0	---	---	None	---	None
		February	1.3-2.0	>6.0	---	---	None	---	None
		March	1.3-2.0	>6.0	---	---	None	---	None
		April	1.3-2.0	>6.0	---	---	None	---	None
		May	1.3-2.0	>6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.3-2.0	>6.0	---	---	None	---	None
		December	1.3-2.0	>6.0	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
140D,140E:									
Dunkirk-------------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
185C,185D:									
Onoville------------------	C								
		January	1.2-2.0	1.3-3.0	---	---	None	---	None
		February	1.2-2.0	1.3-3.0	---	---	None	---	None
		March	1.2-2.0	1.3-3.0	---	---	None	---	None
		April	1.2-2.0	1.3-3.0	---	---	None	---	None
		May	1.2-2.0	1.3-3.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.2-2.0	1.3-3.0	---	---	None	---	None
		December	1.2-2.0	1.3-3.0	---	---	None	---	None
187B,187C:									
Shongo--------------------	C								
		January	0.5-1.5	1.3-2.5	---	---	None	---	None
		February	0.5-1.5	1.3-2.5	---	---	None	---	None
		March	0.5-1.5	1.3-2.5	---	---	None	---	None
		April	0.5-1.5	1.3-2.5	---	---	None	---	None
		May	0.5-1.5	1.3-2.5	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.3-2.5	---	---	None	---	None
		December	0.5-1.5	1.3-2.5	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
188B,188C,188D:									
Cavode	C								
		January	0.5-1.5	5.0-6.0	---	---	None	---	None
		February	0.5-1.5	5.0-6.0	---	---	None	---	None
		March	0.5-1.5	5.0-6.0	---	---	None	---	None
		April	0.5-1.5	5.0-6.0	---	---	None	---	None
		May	0.5-1.5	5.0-6.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	5.0-6.0	---	---	None	---	None
		December	0.5-1.5	5.0-6.0	---	---	None	---	None
189B,189C:									
Portville	C								
		January	0.5-1.5	1.0-3.0	---	---	None	---	None
		February	0.5-1.5	1.0-3.0	---	---	None	---	None
		March	0.5-1.5	1.0-3.0	---	---	None	---	None
		April	0.5-1.5	1.0-3.0	---	---	None	---	None
		May	0.5-1.5	1.0-3.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	1.0-3.0	---	---	None	---	None
		December	0.5-1.5	1.0-3.0	---	---	None	---	None
195C,195D,195E:									
Mandy	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
199C,199D:									
Buchanan------------------	C								
		January	1.5-2.0	1.7-3.0	---	---	None	---	None
		February	1.5-2.0	1.7-3.0	---	---	None	---	None
		March	1.5-2.0	1.7-3.0	---	---	None	---	None
		April	1.5-2.0	1.7-3.0	---	---	None	---	None
		May	1.5-2.0	1.7-3.0	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	1.5-2.0	1.7-3.0	---	---	None	---	None
		December	1.5-2.0	1.7-3.0	---	---	None	---	None
289B,289C,289D,289E,289F:									
Ceres---------------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
400:									
Wakeville-----------------	B								
		January	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		February	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		March	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		April	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		May	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		December	0.5-1.5	>6.0	---	---	None	Brief	Occasional

Table 24.—Water Features—Continued

Map symbol and soil name	Hydrologic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
496B:									
Gilpin----------------------	C								
		January	2.0-3.3	2.0-3.3	---	---	None	---	None
		February	2.0-3.3	2.0-3.3	---	---	None	---	None
		March	2.0-3.3	2.0-3.3	---	---	None	---	None
		April	2.0-3.3	2.0-3.3	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	2.0-3.3	2.0-3.3	---	---	None	---	None
		December	2.0-3.3	2.0-3.3	---	---	None	---	None
496C,496D,496E,496F:									
Gilpin----------------------	C								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
497D,497E,497F:									
Rayne-----------------------	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
498E:									
Rayne	B								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
800:									
Holderton	B								
		January	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		February	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		March	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		April	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		May	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		June	---	---	---	---	None	---	None
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	0.5-1.5	>6.0	---	---	None	Brief	Occasional
		December	0.5-1.5	>6.0	---	---	None	Brief	Occasional
PG:									
Pits, gravel	---								
		Jan-Dec	---	---	---	---	None	---	---
Ur:									
Urban land	---								
		January	---	---	---	---	None	---	None
		February	---	---	---	---	None	---	None
		March	---	---	---	---	None	---	None
		April	---	---	---	---	None	---	None
		May	---	---	---	---	None	---	None
		June	---	---	---	---	None	---	None

Table 24.—Water Features—Continued

Map symbol and soil name	Hydro-logic group	Month	Water table: Upper limit	Water table: Lower limit	Ponding: Surface water depth	Ponding: Duration	Ponding: Frequency	Flooding: Duration	Flooding: Frequency
			Ft	Ft	Ft				
Ur:									
Urban land----------------	---								
		July	---	---	---	---	None	---	None
		August	---	---	---	---	None	---	None
		September	---	---	---	---	None	---	None
		October	---	---	---	---	None	---	None
		November	---	---	---	---	None	---	None
		December	---	---	---	---	None	---	None
W:									
Water---------------------	---								
		Jan-Dec	---	---	---	---	None	---	---

Table 25.—Soil Features

(See text for definitions of terms used in this table. Absence of an entry indicates that the feature is not a concern or that data were not estimated.)

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
1:							
Udifluvents	---	---	---	---	Moderate	Moderate	High
Fluvaquents	---	---	---	---	High	High	High
2:							
Hamlin	---	---	---	---	High	Low	Low
3:							
Tioga	---	---	---	---	Moderate	Low	Moderate
4:							
Teel	---	---	---	---	High	Moderate	Low
5:							
Wayland	---	---	---	---	High	High	Low
6A:							
Wyalusing	---	---	---	---	High	High	Moderate
7A:							
Philo	---	---	---	---	Moderate	Moderate	High
8:							
Middlebury	---	---	---	---	Moderate	Moderate	Low
9:							
Pawling	---	---	---	---	Moderate	Low	Low
10:							
Atkins	---	---	---	---	High	High	High
11B,11C,11D,11E,11F:							
Ischua	Bedrock (lithic)	20-40	---	Strongly cemented	Moderate	Moderate	High
12B,12C,12D,12E:							
Franklinville	---	---	---	---	Moderate	Low	Moderate
14B,14C:							
Hornellsville	Bedrock (paralithic)	20-40	---	Weakly cemented	High	High	High
15B,15C,15D:							
Willdin	Fragipan	16-26	18-50	Noncemented	Moderate	Moderate	Moderate

Table 25.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
16A,16B,16C:							
Almond	---	---	---	---	High	High	High
17B,17C,17D,17E:							
Salamanca	---	---	---	---	Moderate	Moderate	High
18A:							
Pope	---	---	---	---	Moderate	Low	High
19A,19B:							
Olean	---	---	---	---	High	Low	Moderate
20A,20B,20C,20D:							
Unadilla	---	---	---	---	High	Low	Moderate
22A,22B:							
Allard	---	---	---	---	High	Low	Moderate
25A,25B,25C,25D,25E,25F:							
Chenango	---	---	---	---	Moderate	Low	Moderate
26A,26B:							
Chenango, fan	---	---	---	---	Moderate	Low	Moderate
27A,27B:							
Castile	---	---	---	---	Moderate	Moderate	Moderate
28A:							
Scio	---	---	---	---	High	Moderate	Moderate
29A,29B,29C,29D,29E:							
Chenango	---	---	---	---	Moderate	Low	Moderate
31B,31C:							
Collamer	---	---	---	---	High	Moderate	Low
32A,32B:							
Churchville	---	---	---	---	High	High	Low
33A:							
Wallington	Fragipan	12-24	10-30	Noncemented	High	High	Moderate
34:							
Getzville	---	---	---	---	High	High	Low
35A,35B,35C:							
Rhinebeck	---	---	---	---	High	High	Low

Table 25.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
36:							
Canadice	---	---	---	---	High	High	Low
37A,37B:							
Tonawanda	---	---	---	---	High	High	Low
38A,38B:							
Niagara	---	---	---	---	High	High	Low
39A:							
Halsey	---	---	---	---	High	High	Low
40A,40B,40C:							
Williamson	Fragipan	15-24	8-38	Noncemented	High	Moderate	Moderate
41A,41B:							
Barcelona	Bedrock (paralithic)	40-60	---	Moderately cemented	High	High	Low
42A,42B:							
Elnora	---	---	---	---	Moderate	Low	Moderate
43:							
Canandaigua, silt loam	---	---	---	---	High	High	Low
44:							
Canandaigua, mucky silt loam	---	---	---	---	High	High	Low
45:							
Canandaigua, acid substratum	---	---	---	---	High	High	Moderate
46:							
Swormville	---	---	---	---	High	Moderate	Low
47A:							
Minoa	---	---	---	---	High	Moderate	Moderate
48A,48B,48C:							
Colonie	---	---	---	---	Low	Low	Moderate
49A:							
Red Hook	---	---	---	---	High	Moderate	Moderate
50A,50B,50C:							
Canaseraga	Fragipan	18-34	12-40	Noncemented	High	Moderate	Moderate

Table 25.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
51B,51C,51D,51E,51F:							
Chadakoin	---	---	---	---	Moderate	Low	High
52B,52C,52D,52E,52F:							
Valois	---	---	---	---	Moderate	Low	High
53C:							
Valois	---	---	---	---	Moderate	Low	High
Volusia	Fragipan	10-22	20-64	Noncemented	High	High	Moderate
Mardin	Fragipan	14-26	15-56	Noncemented	Moderate	Moderate	Moderate
55A,55B,55C:							
Darien	---	---	---	---	High	High	Low
56B,56C,56D:							
Chautauqua	---	---	---	---	Moderate	Moderate	Moderate
57A,57B,57C:							
Busti	---	---	---	---	High	High	Low
58B,58C:							
Rushford	Fragipan	14-28	8-24	Noncemented	Moderate	Moderate	Moderate
59B,59C,59D:							
Yorkshire	Fragipan	16-30	12-38	Noncemented	Moderate	Moderate	Moderate
60A,60B,60C,60D:							
Napoli	Fragipan	12-27	14-40	Noncemented	High	High	Moderate
61B,61C,61D,61E,61F:							
Schuyler	---	---	---	---	Moderate	Moderate	High
62B,62C,62D:							
Mardin	Fragipan	14-26	15-56	Noncemented	Moderate	Moderate	Moderate
63B,63C,63D:							
Langford	Fragipan	15-28	9-44	Noncemented	Moderate	Moderate	Low
64C:							
Mardin	Fragipan	14-26	15-56	Noncemented	Moderate	Moderate	Moderate
66B:							
Volusia	Fragipan	10-22	20-64	Noncemented	High	High	Moderate
67A,67B:							
Dalton	Fragipan	12-22	20-50	Noncemented	High	High	Moderate

Table 25.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
68A,68B,68C:							
Volusia	Fragipan	10-22	20-64	Noncemented	High	High	Moderate
69A,69B,69C:							
Erie	Fragipan	10-21	10-48	Noncemented	High	High	Low
71E,71F:							
Mongaup	Bedrock (lithic)	20-40	---	Indurated	Moderate	Low	High
72B,72C,72D,72E,72F:							
Towerville	Bedrock (lithic)	20-40	---	Strongly cemented	Moderate	Moderate	High
73B,73C:							
Gretor	Bedrock (lithic)	20-40	---	Strongly cemented	High	High	High
74:							
Ashville	---	---	---	---	High	High	Low
75:							
Alden	---	---	---	---	High	High	Low
76A,76B,76C:							
Orpark	Bedrock (lithic)	20-40	---	Strongly cemented	High	High	High
77A:							
Chippewa	Fragipan	8-20	8-36	Noncemented	High	High	Moderate
78A,78B,78C,78D:							
Hornell	Bedrock (paralithic)	20-40	---	Weakly cemented	High	High	High
78F:							
Hornell	Bedrock (paralithic)	20-40	---	Weakly cemented	High	High	High
Hudson	---	---	---	---	Moderate	High	Low
79B,79C,79D,79E,79F:							
Mongaup	Bedrock (lithic)	20-40	---	Indurated	Moderate	Low	High
80A,80B,80C:							
Fremont	---	---	---	---	High	High	High
81B,81C,81D,81E:							
Varysburg	---	---	---	---	Moderate	High	Moderate

Table 25.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
82F:							
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	None	---	---
Manlius	Bedrock (lithic)	20-40	---	Indurated	Moderate	Low	High
84B,84C:							
Elko	Fragipan	18-30	30-48	Noncemented	Moderate	Moderate	High
85B,85C,85D:							
Onoville	Fragipan	16-36	20-50	Noncemented	Moderate	Moderate	High
86B,86C,86D:							
Eldred	---	---	---	---	Moderate	High	High
87B,87C:							
Shongo	Fragipan	16-30	20-50	Noncemented	High	High	High
88A,88B,88C,88D:							
Ivory	---	---	---	---	High	High	High
89B,89C:							
Portville	Fragipan	12-36	20-50	Noncemented	High	High	Moderate
90A,90B:							
Brinkerton	Fragipan	11-30	8-47	Noncemented	High	High	High
91A:							
Palms	---	---	---	---	High	High	Low
92:							
Carlisle	---	---	---	---	High	High	Low
93:							
Saprists, inundated	---	---	---	---	High	High	Low
94B,94C:							
Frewsburg	Bedrock (lithic)	20-40	---	Strongly cemented	High	High	High
95B,95C,95D,95E,95F:							
Mandy	Bedrock (lithic)	20-40	---	Indurated	Moderate	Low	High
96B,96C,96D,96E,96F:							
Carrollton	Bedrock (lithic)	20-40	---	Strongly cemented	Moderate	Low	High
97B,97C,97D,97E,97F:							
Kinzua	---	---	---	---	Moderate	Low	High
98D,98E:							
Kinzua	---	---	---	---	Moderate	Low	High

Table 25.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
99B,99C,99D:							
Buchanan	Fragipan	20-36	12-50	Noncemented	Moderate	Moderate	High
100:							
Udorthents	---	---	---	---	Moderate	Moderate	Moderate
101:							
Udorthents, refuse substratum	---	---	---	---	Moderate	Moderate	Moderate
102C:							
Mandy	Bedrock (lithic)	20-40	---	Indurated	Moderate	Low	High
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	None	---	---
103C:							
Knapp Creek	Bedrock (lithic)	40-60	---	Indurated	Moderate	Low	High
Rock outcrop	Bedrock (lithic)	0-0	---	Indurated	None	---	---
104B,104C,104D,104E:							
Flatiron	---	---	---	---	Moderate	Low	High
108D,108E,108F:							
Hartleton	Bedrock (lithic)	40-60	---	Indurated	Moderate	Low	High
131:							
Lamson	---	---	---	---	High	High	Low
132B,132C:							
Wiscoy	Fragipan	8-20	10-32	Noncemented	High	High	Moderate
135C,135D,135E:							
Hudson	---	---	---	---	Moderate	High	Low
140D,140E:							
Dunkirk	---	---	---	---	High	Low	Low
185C,185D:							
Onoville	Fragipan	16-36	20-50	Noncemented	Moderate	Moderate	High
187B,187C:							
Shongo	Fragipan	16-30	20-50	Noncemented	High	High	High
188B,188C,188D:							
Cavode	Bedrock (lithic)	60-72	---	Indurated	High	High	High

Table 25.—Soil Features—Continued

Map symbol and soil name	Restrictive layer				Potential for frost action	Risk of corrosion	
	Kind	Depth to top	Thickness	Hardness		Uncoated steel	Concrete
		In	In				
189B,189C:							
Portville	Fragipan	12-36	20-50	Noncemented	High	High	Moderate
195C,195D,195E:							
Mandy	Bedrock (lithic)	20-40	---	Indurated	Moderate	Low	High
199C,199D:							
Buchanan	Fragipan	20-36	12-50	Noncemented	Moderate	Moderate	High
289B,289C,289D,289E, 289F:							
Ceres	Bedrock (lithic)	40-60	---	Strongly cemented	Moderate	Low	High
400:							
Wakeville	---	---	---	---	High	High	Low
496B,496C,496D,496E, 496F:							
Gilpin	Bedrock (lithic)	20-40	---	Strongly cemented	Moderate	Low	High
497D,497E,497F:							
Rayne	---	---	---	---	Moderate	Low	High
498E:							
Rayne	---	---	---	---	Moderate	Low	High
800:							
Holderton	---	---	---	---	High	High	Low
PG:							
Pits, gravel	---	---	---	---	Low	---	---
Ur:							
Urban land	---	---	---	---	None	---	---
W:							
Water	---	---	---	---	---	---	---

Table 26.—Relationship Between Parent Material, Position, and Drainage of Soil Series

Parent material and soil characteristics*	Temp Regime	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
SOILS ON UPLANDS						
Very deep, moderately coarse textured glacial till	mesic	Chadakoin	Chautauqua	Busti	Ashville	
	frigid	Franklinville				
Very deep, moderately fine textured, glacial till with 18 to 35 percent clay in the subsoil	mesic		Schuyler	Fremont	Ashville	Alden
	frigid		Salamanca	Almond		
Very deep, moderately fine textured, glacial till with 27 to 35 percent clay in the subsoil	mesic			Darien		
Very deep, moderately fine textured, glacial till with a fragipan	mesic		Langford	Erie		
Very deep, medium textured glacial till with an acid fragipan	mesic		Mardin	Volusia	Chippewa	
	frigid		Willdin			
Very deep, moderately fine textured glacial till with 18 to 35 percent clay in the subsoil and acid fragipan	frigid		Yorkshire	Napoli		
Very deep, medium textured glacial till with a fragipan over lacustrine silts	mesic		Rushford	Wiscoy		
Very deep, medium textured glacial till with an acid fragipan overlain with 15 to 36 inch silt mantle	mesic		Canaseraga	Dalton		
Moderately deep, medium textured glacial till, 20 to 40 inches over dark shale bedrock	mesic	Manlius				
Moderately deep, medium textured glacial till, 20 to 40 inches over sandstone and siltstone bedrock	frigid	Mongaup				
Moderately deep, moderately fine textured glacial till with 18 to 35 percent clay in the subsoil, 20 to 40 inches over bedrock	mesic		Towerville	Orpark		
	frigid		Ischua	Gretor		

Table 26.—Relationship Between Parent Material, Position, and Drainage of Soil Series—Continued

Parent material and soil characteristics*	Temp Regime	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
SOILS ON UPLANDS						
Moderately deep, fine textured glacial till, with greater than 35 percent clay in the subsoil, 20 to 40 inches over bedrock	mesic			Hornell		
	frigid			Hornellsville		
SOILS ON OUTWASH PLAINS, TERRACES, and ALLUVIAL FANS						
Very deep, coarse textured gravelly material over stratified sand and gravel	mesic	Chenango	Castile	Red Hook		Halsey
Very deep, moderately coarse textured glacio-fluvial material	mesic	Valois				
Very deep, coarse textured gravelly material over clayey lacustrine deposits	mesic		Varysburg			
SOILS ON LACUSTRINE PLAINS AND SANDY DELTAS						
Very deep, fine textured lacustrine deposits with greater than 35 percent clay in the subsoil	mesic		Hudson	Rhinebeck	Canadice	
Very deep, fine textured lacustrine deposits with greater than 35 percent clay in the subsoil underlain with glacial till at depths of 20 to 40 inches	mesic			Churchville		
Very deep, moderately fine textured lacustrine silty deposits with 18 to 35 percent clay in the subsoil	mesic	Dunkirk	Collamer	Niagara	Canandaigua silt loam	Canandaigua mucky silt loam
Very deep, moderately fine textured lacustrine silty deposits overlying sand and or gravel at depths of 20 to 40 inches	mesic	Allard	Olean	Swormville	Getzville	
Very deep, medium textured lacustrine deposits with less than 18 percent clay in the subsoil	mesic	Unadilla	Scio	Tonawanda		

Table 26.—Relationship Between Parent Material, Position, and Drainage of Soil Series—Continued

Parent material and soil characteristics*	Temp Regime	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
SOILS ON LACUSTRINE PLAINS AND SANDY DELTAS						
Very deep, coarse silty lacustrine deposits, with a fragipan	mesic		Williamson	Wallington		
Very deep, moderately fine textured lacustrine silty deposits with 18 to 35 percent clay content in the subsoil with bedrock at depths of 40 to 60 inches	mesic			Barcelona		
Very deep, coarse and moderately coarse textured sandy deposits with less than 18 percent clay	mesic	Colonie	Elnora	Minoa	Lamson	
SOILS ON RESIDUAL AND COLLUVIAL MATERIALS						
Very deep, moderately fine textured residual soil with 18 to 35 percent clay in the subsoil	mesic	Rayne				
	frigid	Kinzua	Eldred			
Very deep, moderately fine textured colluvial with 18 to 35 percent clay in the subsoil, with an acid fragipan	mesic		Buchanan	Portville	Brinkerton	
	frigid		Onoville	Shongo		
Very deep, medium textured residual soil with 18 to 35 percent clay in the subsoil with an acid fragipan	frigid		Elko			
Very deep, fine textured residual soils with greater than 35 percent clay in the subsoil	mesic			Cavode		
	frigid			Ivory		
Very deep, coarse textured residual soil from sandstone conglomerate with 10 to 18 percent clay in the subsoil	frigid	Flatiron				
Deep coarse textured residual soil from sandstone conglomerate with 10 to 18 percent clay in the subsoil	frigid	Knapp Creek				

Table 26.—Relationship Between Parent Material, Position, and Drainage of Soil Series—Continued

Parent material and soil characteristics*	Temp Regime	Well drained	Moderately well drained	Somewhat poorly drained	Poorly drained	Very poorly drained
SOILS ON RESIDUAL AND COLLUVIAL MATERIALS						
Deep, moderately fine textured red residual soils with 18 to 35 percent clay in the subsoil with bedrock at a depth of 40 to 60 inches	frigid	Ceres				
Deep, medium textured residual soils with 18 to 27 percent clay in the subsoil with bedrock at a depth of 40 to 60 inches	mesic	Hartleton				
Moderately deep, moderately fine textured residual soils with 18 to 35 percent clay in the subsoil, 20 to 40 inches over bedrock	mesic	Gilpin				
	frigid	Carrollton		Frewsburg		
Moderately deep, medium textured residual soils with 10 to 27 percent clay in the subsoil, 20 to 40 inches over bedrock	frigid	Mandy				
SOILS ON FLOOD PLAINS						
Very deep, medium textured neutral and mildly alkaline alluvial sediments	mesic	Hamlin	Teel	Wakeville	Wayland	
Very deep, medium textured slightly acid alluvial sediments	mesic	Tioga	Middlebury	Holderton		
Very deep, medium textured silt mantle over sand and gravel	mesic		Pawling		Wyalusing	
Very deep, medium textured acid alluvial sediments	mesic	Pope	Philo		Atkins	
SOILS IN SWAMP AND BOGS						
Very deep organic material more than 51 inches thick	mesic					Carlisle
Moderately deep organic material 16 to 51 inches thick over loamy mineral soil	mesic					Palms

Table 27.—Taxonomic Classification of the Soils

(An asterisk in the first column indicates a taxadjunct to the series. See text for a description of those characteristics that are outside the range of the series.)

Soil name	Family or higher taxonomic class
Alden	Fine-loamy, mixed, active, nonacid, mesic Mollic Endoaquepts
Allard	Coarse-silty over sandy or sandy-skeletal, mixed, active, mesic Typic Dystrudepts
Almond	Fine-loamy, mixed, semiactive, acid, frigid Aeric Endoaquepts
Ashville	Fine-loamy, mixed, active, nonacid, mesic Typic Endoaquepts
Atkins	Fine-loamy, mixed, active, acid, mesic Fluvaquentic Endoaquepts
Barcelona	Fine-silty, mixed, active, mesic Aeric Endoaqualfs
Brinkerton	Fine-silty, mixed, superactive, mesic Typic Fragiaqualfs
Buchanan	Fine-loamy, mixed, semiactive, mesic Aquic Fragiudults
Busti	Coarse-loamy, mixed, active, nonacid, mesic Aeric Endoaquepts
Canadice	Fine, illitic, mesic Typic Endoaqualfs
Canandaigua	Fine-silty, mixed, active, nonacid, mesic Mollic Endoaquepts
Canaseraga	Coarse-silty, mixed, active, mesic Typic Fragiudepts
Carlisle	Euic, mesic Typic Haplosaprists
Carrollton	Fine-loamy, mixed, active, frigid Typic Hapludults
Castile	Loamy-skeletal, mixed, active, mesic Aquic Dystrudepts
Cavode	Fine, mixed, active, mesic Aeric Endoaquults
Ceres	Fine-loamy, mixed, semiactive, frigid Typic Hapludults
Chadakoin	Coarse-loamy, mixed, superactive, mesic Typic Dystrudepts
Chautauqua	Coarse-loamy, mixed, active, mesic Aquic Dystrudepts
Chenango	Loamy-skeletal, mixed, superactive, mesic Typic Dystrudepts
Chippewa	Fine-loamy, mixed, active, mesic Typic Fragiaquepts
Churchville	Fine, illitic, mesic Aeric Endoaqualfs
Collamer	Fine-silty, mixed, active, mesic Glossaquic Hapludalfs
Colonie	Mixed, mesic Lamellic Udipsamments
Dalton	Coarse-silty, mixed, active, mesic Aeric Fragiaquepts
Darien	Fine-loamy, mixed, active, mesic Aeric Endoaqualfs
Dunkirk	Fine-silty, mixed, active, mesic Glossic Hapludalfs
Eldred	Fine-loamy, mixed, semiactive, frigid Aquic Hapludults
Elko	Fine-loamy, mixed, semiactive, frigid Aquic Fragiudults
Elnora	Mixed, mesic Aquic Udipsamments
Erie	Fine-loamy, mixed, active, mesic Aeric Fragiaquepts
Flatiron	Coarse-loamy, mixed, active, frigid Typic Dystrudepts
Fluvaquents	Fluvaquents
Franklinville	Coarse-loamy, mixed, superactive, frigid Typic Dystrudepts
Fremont	Fine-loamy, mixed, semiactive, acid, mesic Aeric Endoaquepts
Frewsburg	Fine-loamy, mixed, active, frigid Aeric Endoaquults
Getzville	Fine-silty over sandy or sandy-skeletal, mixed, active, nonacid, mesic Aeric Endoaquepts
Gilpin	Fine-loamy, mixed, active, mesic Typic Hapludults
Gretor	Fine-loamy, mixed, active, acid, frigid Aeric Endoaquepts
Halsey	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Mollic Endoaquepts
Hamlin	Coarse-silty, mixed, active, mesic Dystric Fluventic Eutrudepts
Hartleton	Loamy-skeletal, mixed, active, mesic Typic Hapludults
Holderton	Coarse-loamy, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Hornell	Fine, illitic, acid, mesic Aeric Endoaquepts
Hornellsville	Fine, illitic, acid, frigid Aeric Endoaquepts
Hudson	Fine, illitic, mesic Glossaquic Hapludalfs
Ischua	Fine-loamy, mixed, active, frigid Aquic Dystrudepts
Ivory	Fine, mixed, subactive, frigid Aeric Endoaquults
Kinzua	Fine-loamy, mixed, active, frigid Typic Hapludults
Knapp Creek	Loamy-skeletal, mixed, active, frigid Typic Dystrudepts
Lamson	Coarse-loamy, mixed, active, nonacid, mesic Aeric Endoaquepts
Langford	Fine-loamy, mixed, active, mesic Typic Fragiudepts
Mandy	Loamy-skeletal, mixed, active, frigid Typic Dystrudepts
Manlius	Loamy-skeletal, mixed, active, mesic Typic Dystrudepts
Mardin	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Middlebury	Coarse-loamy, mixed, active, mesic Fluvaquentic Eutrudepts
Minoa	Coarse-loamy, mixed, active, mesic Aquic Dystric Eutrudepts

Table 27.—Taxonomic Classification of the Soils—Continued

Soil name	Family or higher taxonomic class
Mongaup	Coarse-loamy, mixed, active, frigid Typic Dystrudepts
Napoli	Fine-loamy, mixed, active, frigid Aeric Fragiaqualfs
Niagara	Fine-silty, mixed, active, mesic Aeric Endoaqualfs
Olean	Fine-silty over sandy or sandy-skeletal, mixed, active, mesic Aquic Hapludalfs
Onoville	Fine-loamy, mixed, subactive, frigid Aquic Fragiudults
Orpark	Fine-loamy, mixed, semiactive, acid, mesic Aeric Endoaquepts
Palms	Loamy, mixed, euic, mesic Terric Haplosaprists
Pawling	Coarse-loamy over sandy or sandy-skeletal, mixed, active, mesic Fluvaquentic Eutrudepts
Philo	Coarse-loamy, mixed, active, mesic Fluvaquentic Dystrudepts
Pope	Coarse-loamy, mixed, active, mesic Fluventic Dystrudepts
Portville	Fine-loamy, mixed, active, mesic Aeric Fragiaqualfs
Rayne	Fine-loamy, mixed, active, mesic Typic Hapludults
Red Hook	Coarse-loamy, mixed, superactive, nonacid, mesic Aeric Endoaquepts
Rhinebeck	Fine, illitic, mesic Aeric Endoaqualfs
Rushford	Coarse-loamy, mixed, active, mesic Typic Fragiudepts
Salamanca	Fine-loamy, mixed, active, frigid Aquic Dystrudepts
Saprists, inundated	Saprists
Schuyler	Fine-loamy, mixed, superactive, mesic Aquic Dystrudepts
Scio	Coarse-silty, mixed, active, mesic Aquic Dystrudepts
Shongo	Fine-loamy, mixed, active, frigid Aeric Fragiaqualfs
Swormville	Fine-silty over sandy or sandy-skeletal, mixed, active, mesic Aeric Endoaqualfs
Teel	Coarse-silty, mixed, active, mesic Fluvaquentic Eutrudepts
Tioga	Coarse-loamy, mixed, active, mesic Dystric Fluventic Eutrudepts
Tonawanda	Coarse-silty, mixed, active, nonacid, mesic Aeric Endoaquepts
Towerville	Fine-loamy, mixed, superactive, mesic Aquic Dystrudepts
Udifluvents	Udifluvents
Udorthents	Udorthents
Unadilla	Coarse-silty, mixed, active, mesic Typic Dystrudepts
Valois	Coarse-loamy, mixed, superactive, mesic Typic Dystrudepts
Varysburg	Loamy-skeletal over clayey, mixed, active, mesic Glossaquic Hapludalfs
Volusia	Fine-loamy, mixed, active, mesic Aeric Fragiaquepts
Wakeville	Coarse-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Wallington	Coarse-silty, mixed, active, mesic Aeric Fragiaquepts
Wayland	Fine-silty, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Willdin	Coarse-loamy, mixed, active, frigid Typic Fragiudepts
Williamson	Coarse-silty, mixed, active, mesic Typic Fragiudepts
Wiscoy	Fine-loamy, mixed, active, mesic Aeric Fragiaquepts
Wyalusing	Coarse-loamy over sandy or sandy-skeletal, mixed, active, nonacid, mesic Fluvaquentic Endoaquepts
Yorkshire	Fine-loamy, mixed, active, frigid Aquic Fragiudalfs

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