

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 providing the Nation's short- and long-range needs for food and fiber. The supply of high quality farmland is limited, and the U.S. Department of Agriculture recognizes that responsible levels of government, as well as individuals, must encourage and facilitate the use of our Nation's prime farmland with wisdom and foresight.

Prime farmland, as defined by the U.S. Department of Agriculture, is the land that is best suited to producing food, feed, forage, fiber, and oilseed crops. It has the soil quality, growing season, and moisture supply needed to economically produce a sustained high yield of crops when it is treated and managed using acceptable farming methods. Prime farmland produces the highest yields with minimal inputs of energy and economic resources, and farming it results in the least damage to the environment.

Prime farmland in Albermarle County may now be in crops, pasture, woodland, or other land, but not urban and built-up land or water areas. It must either be used for producing food or fiber or be available for these uses.

Prime farmland usually has an adequate and dependable supply of moisture from precipitation or irrigation. It also has favorable temperature and growing season and acceptable levels of acidity or alkalinity. It has few or no rocks and is permeable to water and air. Prime farmland is not excessively erodible or saturated

with water for long periods and is not flooded during the growing season. The slope ranges mainly from 0 to 6 percent. For more detailed information on the criteria for prime farmland consult the local staff of the Soil Conservation Service.

About 103,530 acres, or nearly 22 percent, of Albermarle County meets the soil requirements for prime farmland.

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 difficult to cultivate and usually are less productive.

Soil map units that make up prime farmland in Albermarle County are listed in table 5. This list does not constitute a recommendation for a particular land use. The extent of each listed map unit is shown in table 4. The location is shown on the detailed soil maps in the back of this publication. The soil qualities that affect use and management are described in the section "Detailed soil map units."

Soils that have limitations—a high water table or flooding—may qualify for prime farmland if these limitations are overcome by such measures as drainage or flood control. In table 5, these limitations, if any, are shown in parentheses after the map unit name. Onsite evaluation is necessary to see if these limitations have been overcome by corrective measures.

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

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

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

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

Crops and Pasture

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General management needed for crops and pasture is suggested in this section. The crops or pasture plants best suited to the soils, including some not commonly grown in the survey area, are identified; the system of land capability classification used by the Soil Conservation Service is explained; and the estimated

yields of the main crops and hay and pasture plants are listed for each soil.

Planners of management systems for individual fields or farms should consider the detailed information given in the description of each soil under "Detailed Soil Map Units." Specific information can be obtained from the local office of the Soil Conservation Service or the Cooperative Extension Service.

More than 121,900 acres in the survey area were used for crops and pasture in 1977, according to the 1978 Census of Agriculture. Of this total, about 8,800 acres were used for row crops (corn and soybeans); 1,100 acres for close-grown crops (wheat, oats, and barley); 32,500 acres for hay; and 79,500 acres for pasture.

The acreage in cultivated crops in the county has gradually been decreasing; the acreage in pasture has been increasing as more beef cattle are being raised. Considerable acreage of cropland and pasture has been converted to community development.

Soil erosion is the major concern on most of the cropland in Albemarle County. Most soils in the county have slopes of more than 2 percent and thus are susceptible to erosion.

Loss of the surface layer of the soil by erosion reduces the productivity of the soil and reduces the fertility and available water capacity. Erosion is especially damaging to soils that have a clayey subsoil, such as Cullen and Hayesville soils, and to soils that have bedrock near the surface. Erosion also reduces productivity on soils that tend to be droughty, such as Manteo and Klinesville soils.

Soil erosion also results in sediment-loaded streams. Control of erosion minimizes the pollution of streams by sediment and improves the quality of water for municipal use, for recreation, and for fish and wildlife habitat.

Preparing a good seedbed through tillage is difficult on severely eroded spots because of the increased clay content and less organic matter in the present surface layer. It is also difficult to establish a good stand of any crop on the eroded spots because of the reduced available moisture and soil-seed contact in the seedbed. Severely eroded spots are common along sharp slope breaks in cultivated areas.

Erosion control practices that provide protective surface cover help to reduce runoff and increase water infiltration. For example, using a cropping system that keeps the plant cover on the soil for extended periods

can hold erosion losses to amounts that will not reduce the productive capacity of the soils. On livestock farms, which require pasture and hay, the legume and grass forage crops in the cropping system reduce erosion, provide nitrogen, and improve soil tilth for the following crop in the system.

Stripcropping and using grassed waterways are common erosion control practices in the survey area. They are best suited to soils that have smooth, uniform slopes. Terraces and diversions also reduce the length of slope and reduce runoff and erosion. They are most practical on deep, well drained soils that have long, regular slopes, such as Totier, Dyke, Cullen, and Hayesville soils. Contour tillage or terracing is not practical in most areas of Nason, Pacolet, and Tatum soils. Substantial plant cover is required to control erosion on these soils.

Conservation tillage, leaving crop residue on the surface, and using winter cover crops help to increase infiltration and reduce the hazards of runoff and erosion. These practices are suitable for most soils in the survey area but are difficult to use on the more eroded soils.

Soil fertility is low in most soils in the county, and most are very strongly acid or strongly acid unless they have been limed. The proper pH level enables crops to use fertilizer and soil moisture more efficiently. Crops on most soils in the county respond well to applications of lime and fertilizer that are applied according to soil tests.

Soil tilth is an important factor in the germination of seeds and in the infiltration of water into the soil. Soils that have good tilth are granular and porous. Poor tilth results in cloddy soils, less soil-seed contact, and a poorer stand of plants.

Most soils used for crops in the survey area have a surface layer of sandy loam, fine sandy loam, loam, or silt loam and are low in content of organic matter. Generally, the structure of the surface of such soils is weak, and rainfall causes a crust to form. The crust is hard when dry and reduces infiltration of water and increases runoff. Regular additions of crop residue and other organic material help to improve tilth and reduce crust formation.

Tilth is a particular concern in soils that have a high content of clay in the plow layer, such as Dogue and Orange soils, and in most soils that are severely eroded. These soils commonly stay wet until about midspring. If they are wet when plowed, they tend to be cloddy when dry and a good seedbed is difficult to prepare.

Drainage is a major management need on a small acreage used for crops and pasture in the survey area. Some soils are naturally so wet that the production of crops common to the area is generally not practical or possible unless the soils are drained. These include the somewhat poorly drained Chewacla and Wehadkee soils.

The design of surface and subsurface drainage systems varies with the kind of soil. Sometimes a combination of surface drainage and subsurface

drainage can be used. Drains have to be more closely spaced in slowly permeable soils than in the more permeable soils. Subsurface drainage is suited to moderately permeable soils. Some soils that have a fragipan can be drained with subsurface drains, provided the fragipan layer is deep enough to allow adequate cover.

Field crops suited to the soils and climate of the survey area include corn, soybeans, and grain sorghum. Wheat, oats, barley, and rye are the common small grains.

Pasture in the county commonly consists of tall fescue, orchardgrass, or clover. Most improved pasture is seeded to tall fescue and ladino clover mixtures. Pasture of cool-season plants provides most of the grazing in spring and autumn. Warm-season plants, such as common bermudagrass, midland bermudagrass, and lespedezas, could be grown in the eastern part of the county to provide summer grazing.

Establishing and maintaining a mixture of grasses and legumes and the prevention of overgrazing are the major pasture management concerns. The use of proper stocking rates, rotational and deferred grazing, weed control, restriction of grazing during the wet season, and the use of lime and fertilizer are the major pasture management practices. Stockpiling the accumulated growth of tall fescue for winter grazing reduces the need for hay.

The major plants grown and harvested for hay are Kentucky-31 fescue, orchardgrass, and red clover. Alfalfa is suitable for many soils in the survey area if the proper amounts of lime and fertilizer are applied. Timothy and bluegrass can be grown and managed for good quality hay.

Special crops grown in the county on a small scale are vegetables, apples, peaches, strawberries, and nursery plants and grapes. The deep, well drained soils are especially well suited to most of these special crops. Soils in low positions where air drainage causes cold air to settle are generally not suited to early vegetables, orchards, and grapes.

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 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 are also 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 insures 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 Soil 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 (4). 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 grouping does not take into account major and generally expensive landforming that would change slope, depth, or other characteristics of the soils, nor does it consider 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 woodland, and 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. These levels are defined in the following paragraphs.

Capability classes, the broadest groups, are designated by Roman numerals I through VIII. The numerals indicate progressively greater limitations and narrower choices for practical use. The classes are defined as follows:

Class I soils have few limitations that restrict their use.

Class II soils have moderate limitations that reduce the choice of plants or that require moderate conservation practices.

Class III soils have severe limitations that reduce the choice of plants or that require special conservation practices, or both.

Class IV soils have very severe limitations that reduce the choice of plants or that require very careful management, or both.

Class V soils are not likely to erode but have other limitations, impractical to remove, that limit their use.

Class VI soils have severe limitations that make them generally unsuitable for cultivation.

Class VII soils have very severe limitations that make them unsuitable for cultivation.

Class VIII soils and miscellaneous areas have limitations that nearly preclude their use for commercial crop production.

Capability subclasses are soil groups within one class. They are designated by adding a small letter, *e*, *w*, *s*, or *c*, to the class numeral, for example, IIe. The letter *e* shows that the main limitation is 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 I there are no subclasses because the soils of this class have few limitations. Class V contains only the subclasses indicated by *w*, *s*, or *c* because the soils in class V are subject to little or no erosion. They have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation. The capability classification of each map unit is given in the section "Detailed Soil Map Units."

Woodland Management and Productivity

Approximately 279,500 acres, or about 59 percent of the land area of Albemarle County, is wooded. Most of this is second growth hardwoods, Virginia pine, and loblolly pine.

The original woodland consisted of mixed stands of chestnut oak, white oak, post oak, scarlet oak, black oak, northern red oak, southern red oak, and hickory. Yellow-poplar was on the more moist sites. Shortleaf pine and Virginia pine were scattered throughout these hardwood stands. Poorly drained areas were covered by mixed stands of green ash, sweetgum, blackgum, boxelder, and red maple.

Most of the original woodland was cleared and the soil was cultivated as the lands were settled and consolidated into farms. Gradually, the soils became eroded, fertility was depleted, and the woodland was allowed to return. The present stands of mixed hardwoods, Virginia pine, and loblolly pine are mostly in areas that were farmland.

Table 7 can be used by woodland owners or forest managers in planning the use of soils for wood crops. Only those soils suitable for wood crops are listed. The table lists the ordination (woodland suitability) symbol for each soil. Soils assigned the same ordination symbol require the same general management and have about the same potential productivity.

The first part of the *ordination symbol*, a number, indicates the potential productivity of the soils for important trees. The number 1 indicates very high productivity; 2, high; 3, moderately high; 4, moderate; and 5, low. The second part of the symbol, a letter, indicates the major kind of soil limitation. The letter *x* indicates stoniness or rockiness; *w*, excessive water in or on the soil; *t*, toxic substances in the soil; *d*, restricted root depth; *c*, clay in the upper part of the soil; *s*, sandy texture; *f*, high content of coarse fragments in the soil profile; and *r*, steep slopes. The letter *o* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is as follows: *x*, *w*, *t*, *d*, *c*, *s*, *f*, and *r*.

In table 7, *slight*, *moderate*, and *severe* indicate the degree of the major soil limitations to be considered in management.

Ratings of the *erosion hazard* indicate the risk of loss of soil in well managed woodland. The risk is *slight* if the expected soil loss is small, *moderate* if measures are needed to control erosion during logging and road construction, and *severe* if intensive management or special equipment and methods are needed to prevent excessive loss of soil.

Ratings of *equipment limitation* reflect the characteristics and conditions of the soil that restrict use of the equipment generally needed in woodland management or harvesting. A rating of *slight* indicates that use of equipment is not limited to a particular kind of equipment or time of year; *moderate* indicates a short seasonal limitation or a need for some modification in management or in equipment; and *severe* indicates a seasonal limitation, a need for special equipment or management, or a hazard in the use of equipment.

Seedling mortality ratings indicate the degree to which the soil affects the mortality of tree seedlings. Plant competition is not considered in the ratings. The ratings apply to seedlings from good stock that are properly planted during a period of sufficient rainfall. A rating of *slight* indicates that the expected mortality is less than 25 percent; *moderate*, 25 to 50 percent; and *severe*, more than 50 percent.

Ratings of *windthrow hazard* are based on soil characteristics that affect the development of tree roots and the ability of the soil to hold trees firmly. A rating of *slight* indicates that few trees may be blown down by strong winds; *moderate*, that some trees will be blown down during periods of excessive soil wetness and strong winds; and *severe*, that many trees are blown down during periods of excessive soil wetness and moderate or strong winds.

The *potential productivity* of merchantable or *common trees* on a soil is expressed as a *site index*. This index is the average height, in feet, that dominant and codominant trees of a given species attain in a specified number of years. The site index applies to fully stocked, even-aged, unmanaged stands. Commonly grown trees

are those that woodland managers generally favor in intermediate or improvement cuttings. They are selected on the basis of growth rate, quality, value, and marketability.

Trees to plant are those that are suited to the soils and to commercial wood production.

Recreation

The soils of the survey area are rated in table 8 according to limitations that affect their suitability for recreation. The ratings are based on restrictive soil features, such as wetness, slope, and texture of the surface layer. Susceptibility to flooding is considered. Not considered in the ratings, but important in evaluating a site, are the location and accessibility of the area, the size and shape of the area and its scenic quality, vegetation, access to water, potential water impoundment sites, and access to public sewerlines. The capacity of the soil to absorb septic tank effluent and the ability of the soil to support vegetation are also important. Soils subject to flooding are limited for recreation use by the duration and intensity of flooding and the season when flooding occurs. In planning recreation facilities, onsite assessment of the height, duration, intensity, and frequency of flooding is essential.

In table 8, the degree of soil limitation is expressed as slight, moderate, or severe. *Slight* means that soil properties are generally favorable and that limitations are minor and easily overcome. *Moderate* means that limitations can be overcome or alleviated by planning, design, or special maintenance. *Severe* means that soil properties are unfavorable and that limitations can be offset only by costly soil reclamation, special design, intensive maintenance, limited use, or by a combination of these measures.

The information in table 8 can be supplemented by other information in this survey, for example, interpretations for septic tank absorption fields in table 11 and interpretations for dwellings without basements and for local roads and streets in table 10.

Camp areas require site preparation such as shaping and leveling the tent and parking areas, stabilizing roads and intensively used areas, and installing sanitary facilities and utility lines. Camp areas are subject to heavy foot traffic and some vehicular traffic. The best soils have mild slopes and are not wet or subject to flooding during the period of use. The surface has few or no stones or boulders, absorbs rainfall readily but remains firm, and is not dusty when dry. Strong slopes and stones or boulders can greatly increase the cost of constructing campsites.

Picnic areas are subject to heavy foot traffic. Most vehicular traffic is confined to access roads and parking areas. The best soils for picnic areas are firm when wet, are not dusty when dry, are not subject to flooding during the period of use, and do not have slopes or

stones or boulders that increase the cost of shaping sites or of building access roads and parking areas.

Playgrounds require soils that can withstand intensive foot traffic. The best soils are almost level and are not wet or subject to flooding during the season of use. The surface is free of stones and boulders, is firm after rains, and is not dusty when dry. If grading is needed, the depth of the soil over bedrock or a hardpan should be considered.

Paths and trails for hiking, horseback riding, and bicycling should require little or no cutting and filling. The best soils are not wet, are firm after rains, are not dusty when dry, and are not subject to flooding more than once a year during the period of use. They have moderate slopes and few or no stones or boulders on the surface.

Golf fairways are subject to heavy foot traffic and some light vehicular traffic. Cutting or filling may be required. The best soils for use as golf fairways are firm when wet, are not dusty when dry, and are not subject to prolonged flooding during the period of use. They have moderate slopes and no stones or boulders on the surface. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

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 9, 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 flood hazard. Soil temperature and soil moisture are also 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, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are fescue, bluegrass, 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 flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are ragweed, foxtail, goldenrod, and beggarweed.

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, the 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 honeysuckle, 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, hemlock, and redcedar.

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, slope, and surface stoniness. Examples of wetland plants are smartweed, wild millet, cattail, pickerelweed, arrow-arum, 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. The wildlife attracted to these areas include bobwhite quail, mourning dove, meadowlark, field sparrow, cottontail, and red fox.

Habitat for woodland wildlife consists of areas of deciduous plants or coniferous plants or both 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. The ratings are given in the following tables: 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 within a depth of 5 or 6 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this section. Local ordinances and regulations need to be considered in planning, in site selection, and in design.

Soil properties, site features, and observed performance were considered in determining the ratings

in this section. During the fieldwork for this soil survey, determinations were made about grain-size distribution, liquid limit, plasticity index, soil reaction, depth to bedrock, hardness of bedrock within 5 to 6 feet of the surface, soil wetness, depth to a seasonal high water table, slope, likelihood of flooding, natural soil structure aggregation, and soil density. Data were collected about kinds of clay minerals, mineralogy of the sand and silt fractions, and the kind 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 (1) evaluate the potential of areas for residential, commercial, industrial, and recreation uses; (2) make preliminary estimates of construction conditions; (3) evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; (4) evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; (5) plan detailed onsite investigations of soils and geology; (6) locate potential sources of gravel, sand, earthfill, and topsoil; (7) plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and (8) predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

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

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

Building Site Development

Table 10 shows the degree and kind of soil limitations that affect shallow excavations, dwellings with and without basements, small commercial buildings, local roads and streets, and lawns and landscaping. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for basements, graves, utility lines, open ditches, and other purposes. The ratings are based on soil properties, site features, and observed performance of the soils. The ease of digging,

filling, and compacting is affected by the depth to bedrock, or a very firm dense layer; stone content; soil texture; and slope. The time of the year that excavations can be made is affected by the depth to a seasonal high water table and the susceptibility of the soil to flooding. The resistance of the excavation walls or banks to sloughing or caving is affected by soil texture and the depth to the water table.

Dwellings and small commercial buildings are structures built on shallow foundations on undisturbed soil. The load limit is the same as that for single-family dwellings no higher than three stories. Ratings are made for small commercial buildings without basements, for dwellings with basements, and for dwellings without basements. The ratings are based on soil properties, site features, and observed performance of the soils. A high water table, flooding, shrink-swell potential, and organic layers can cause the movement of footings. A high water table, depth to bedrock, large stones, and flooding affect the ease of excavation and construction. Landscaping and grading that require cuts and fills of more than 5 to 6 feet are not considered.

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material, a base of gravel, crushed rock, or stabilized soil material, and a flexible or rigid surface. Cuts and fills are generally limited to less than 6 feet. The ratings are based on soil properties, site features, and observed performance of the soils. Depth to bedrock, a high water table, flooding, large stones, and slope affect the ease of excavating and grading. Soil strength (as inferred from the engineering classification of the soil), shrink-swell potential, frost action potential, and depth to a high water table affect the traffic supporting capacity.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. The ratings are based on soil properties, site features, and observed performance of the soils. Soil reaction, a high water table, depth to bedrock or to a cemented pan, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer affect trafficability after vegetation is established.

Sanitary Facilities

Table 11 shows the degree and the kind of soil limitations that affect septic tank absorption fields, sewage lagoons, and sanitary landfills. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the

limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required.

Table 11 also shows the suitability of the soils for use as daily cover for landfills. A rating of *good* indicates that soil properties and site features are favorable for the use and good performance and low maintenance can be expected; *fair* indicates that soil properties and site features are moderately favorable for the use and one or more soil properties or site features make the soil less desirable than the soils rated good; and *poor* indicates that one or more soil properties or site features are unfavorable for the use and overcoming the unfavorable properties requires special design, extra maintenance, or costly alteration.

Septic tank absorption fields are areas in which effluent from a septic tank is distributed into the soil through subsurface tiles or perforated pipe. Only that part of the soil between depths of 24 and 72 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, depth to bedrock, and flooding affect absorption of the effluent. Large stones and bedrock interfere with installation.

Unsatisfactory performance of septic tank absorption fields, including excessively slow absorption of effluent, surfacing of effluent, and hillside seepage, can affect public health. Ground water can be polluted if highly permeable sand and gravel or fractured bedrock is less than 4 feet below the base of the absorption field, if slope is excessive, or if the water table is near the surface. There must be unsaturated soil material beneath the absorption field to filter the effluent effectively. Many local ordinances require that this material be of a certain thickness.

Sewage lagoons are shallow ponds constructed to hold sewage while aerobic bacteria decompose the solid and liquid wastes. Lagoons should have a nearly level floor surrounded by cut slopes or embankments of compacted soil. Lagoons generally are designed to hold the sewage within a depth of 2 to 5 feet. Nearly impervious soil material for the lagoon floor and sides is required to minimize seepage and contamination of ground water.

Table 11 gives ratings for the natural soil that makes up the lagoon floor. The surface layer and, generally, 1 or 2 feet of soil material below the surface layer are excavated to provide material for the embankments. The ratings are based on soil properties, site features, and observed performance of the soils. Considered in the ratings are slope, permeability, a high water table, depth to bedrock, flooding, large stones, and content of organic matter.

Excessive seepage due to rapid permeability of the soil or a water table that is high enough to raise the level of sewage in the lagoon causes a lagoon to function

unsatisfactorily. Pollution results if seepage is excessive or if floodwater overtops the lagoon. A high content of organic matter is detrimental to proper functioning of the lagoon because it inhibits aerobic activity. Slope and bedrock can cause construction problems, and large stones can hinder compaction of the lagoon floor.

Sanitary landfills are areas where solid waste is disposed of by burying it in soil. There are two types of landfill—trench and area. In a trench landfill, the waste is placed in a trench. It is spread, compacted, and covered daily with a thin layer of soil excavated at the site. In an area landfill, the waste is placed in successive layers on the surface of the soil. The waste is spread, compacted, and covered daily with a thin layer of soil from a source away from the site.

Both types of landfill must be able to bear heavy vehicular traffic. Both types involve a risk of ground water pollution. Ease of excavation and revegetation needs to be considered.

The ratings in table 11 are based on soil properties, site features, and observed performance of the soils. Permeability, depth to bedrock, a high water table, slope, and flooding affect both types of landfill. Texture, stones and boulders, highly organic layers, soil reaction, and content of salts and sodium affect trench type landfills. Unless otherwise stated, the ratings apply only to that part of the soil within a depth of about 6 feet. For deeper trenches, a limitation rated slight or moderate may not be valid. Onsite investigation is needed.

Daily cover for landfill is the soil material that is used to cover compacted solid waste in an area type sanitary landfill. The soil material is obtained offsite, transported to the landfill, and spread over the waste.

Soil texture, wetness, coarse fragments, and slope affect the ease of removing and spreading the material during wet and dry periods. Loamy or silty soils that are free of large stones or excess gravel are the best cover for a landfill. Clayey soils are sticky or cloddy and are difficult to spread; sandy soils are subject to soil blowing.

After soil material has been removed, the soil material remaining in the borrow area must be thick enough over bedrock or the water table to permit revegetation. The soil material used as final cover for a landfill should be suitable for plants. The surface layer generally has the best workability, more organic matter, and the best potential for plants. Material from the surface layer should be stockpiled for use as the final cover.

Construction Materials

Table 12 gives information about the soils as a source of roadfill, sand, gravel, and topsoil. The soils are rated *good*, *fair*, or *poor* as a source of roadfill and topsoil. They are rated as a probable or improbable source of sand and gravel. The ratings are based on soil properties and site features that affect the removal of the soil and its use as construction material. Normal compaction, minor processing, and other standard

construction practices are assumed. Each soil is evaluated to a depth of 5 or 6 feet.

Roadfill is soil material that is excavated in one place and used in road embankments in another place. In this table, the soils are rated as a source of roadfill for low embankments, generally less than 6 feet high and less exacting in design than higher embankments.

The ratings are for the soil material below the surface layer to a depth of 5 or 6 feet. It is assumed that soil layers will be mixed during excavating and spreading. Many soils have layers of contrasting suitability within their profile. The table showing engineering index properties provides detailed information about each soil layer. This information can help determine the suitability of each layer for use as roadfill. The performance of soil after it is stabilized with lime or cement is not considered in the ratings.

The ratings are based on soil properties, site features, and observed performance of the soils. The thickness of suitable material is a major consideration. The ease of excavation is affected by large stones, a high water table, and slope. How well the soil performs in place after it has been compacted and drained is determined by its strength (as inferred from the engineering classification of the soil) and shrink-swell potential.

Soils rated *good* contain significant amounts of sand or gravel or both. They have at least 5 feet of suitable material, low shrink-swell potential, few cobbles and stones, and slopes of 15 percent or less. Depth to the water table is more than 3 feet. Soils rated *fair* are more than 35 percent silt- and clay-sized particles and have a plasticity index of less than 10. They have moderate shrink-swell potential, slopes of 15 to 25 percent, or many stones. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10, a high shrink-swell potential, many stones, or slopes of more than 25 percent. They are wet, and the depth to the water table is less than 1 foot. They may have layers of suitable material, but the material is less than 3 feet thick.

Sand and gravel are natural aggregates suitable for commercial use with a minimum of processing. Sand and gravel are used in many kinds of construction. Specifications for each use vary widely. In table 12, only the probability of finding material in suitable quantity is evaluated. The suitability of the material for specific purposes is not evaluated, nor are factors that affect excavation of the material.

The properties used to evaluate the soil as a source of sand or gravel are gradation of grain sizes (as indicated by the engineering classification of the soil), the thickness of suitable material, and the content of rock fragments. Kinds of rock, acidity, and stratification are given in the soil series descriptions. Gradation of grain sizes is given in the table on engineering index properties.

A soil rated as a probable source has a layer of clean sand or gravel or a layer of sand or gravel that is up to 12 percent silty fines. This material must be at least 3 feet thick and less than 50 percent, by weight, large stones. All other soils are rated as an improbable source. Coarse fragments of soft bedrock, such as shale and siltstone, are not considered to be sand and gravel.

Topsoil is used to cover an area so that vegetation can be established and maintained. The upper 40 inches of a soil is evaluated for use as topsoil. Also evaluated is the reclamation potential of the borrow area.

Plant growth is affected by toxic material and by such properties as soil reaction, available water capacity, and fertility. The ease of excavating, loading, and spreading is affected by rock fragments, slope, a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, rock fragments, bedrock, and toxic material.

Soils rated *good* have friable loamy material to a depth of at least 40 inches. They are free of stones and cobbles, have little or no gravel, and have slopes of less than 8 percent. They are low in content of soluble salts, are naturally fertile or respond well to fertilizer, and are not so wet that excavation is difficult.

Soils rated *fair* are sandy soils, loamy soils that have a relatively high content of clay, soils that have only 20 to 40 inches of suitable material, soils that have an appreciable amount of gravel, stones, or soluble salts, or soils that have slopes of 8 to 15 percent. The soils are not so wet that excavation is difficult.

Soils rated *poor* are very sandy or clayey, have less than 20 inches of suitable material, have a large amount of gravel, stones, or soluble salts, have slopes of more than 15 percent, or have a seasonal water table at or near the surface.

The surface layer of most soils is generally preferred for topsoil because of its organic matter content. Organic matter greatly increases the absorption and retention of moisture and nutrients for plant growth.

Water Management

Table 13 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 ponds. The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and are easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increase in construction costs, and possibly increased maintenance are required.

This table also gives for each soil the restrictive features that affect drainage, irrigation, terraces and diversions, and grassed waterways.

Pond reservoir areas hold water behind a dam or embankment. Soils best suited to this use have low seepage potential in the upper 60 inches. The seepage potential is determined by the permeability of the soil and the depth to fractured bedrock or other permeable material. Excessive slope can affect the storage capacity of the reservoir area.

Embankments, dikes, and levees are raised structures of soil material, generally less than 20 feet high, constructed to impound water or to protect land against overflow. In this table, the soils are rated as a source of material for embankment fill. The ratings apply to the soil material below the surface layer to a depth of about 5 feet. It is assumed that soil layers will be uniformly mixed and compacted during construction.

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

Soil material in embankments must be resistant to seepage, piping, and erosion and have favorable compaction characteristics. Unfavorable features include less than 5 feet of suitable material and a high content of stones or boulders, organic matter, or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table and permeability of the aquifer. Depth to bedrock and the content of large stones affect the ease of excavation.

Drainage is the removal of excess surface and subsurface water from the soil. How easily and effectively the soil is drained depends on the depth to bedrock or to other layers that affect the rate of water movement; permeability; depth to a high water table or depth of standing water if the soil is subject to ponding; slope; susceptibility to flooding; subsidence of organic layers; and potential frost action. Excavating and grading and the stability of ditchbanks are affected by depth to bedrock, large stones, slope, and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts or sulfur. Availability of drainage outlets is not considered in the ratings.

Irrigation is the controlled application of water to supplement rainfall and support plant growth. The design

and management of an irrigation system are affected by depth to the water table, the need for drainage, flooding, available water capacity, intake rate, permeability, erosion hazard, and slope. The construction of a system is affected by large stones and depth to bedrock. The performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Terraces and diversions are embankments or a combination of channels and ridges constructed across a slope to reduce erosion and conserve moisture by intercepting runoff. Slope, wetness, large stones, and depth to bedrock affect the construction of terraces and

diversions. A restricted rooting depth, a severe hazard of wind or water erosion, an excessively coarse texture, and restricted permeability adversely affect maintenance.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Large stones, wetness, slope, and depth to bedrock affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts, and restricted permeability adversely affect the growth and maintenance of the grass after construction.

Soil Properties

Data relating to soil properties are collected during the course of the soil survey. The data and the estimates of soil and water features, listed in tables, are explained on the following pages.

Soil properties are determined by field examination of the soils and by laboratory index testing of some benchmark soils. Established standard procedures are followed. During the survey, many shallow borings are made and examined to identify and classify the soils and to delineate them on the soil maps. Samples are taken from some typical profiles and tested in the laboratory to determine grain-size distribution, plasticity, and compaction characteristics.

Estimates of soil properties are based on field examinations, on laboratory tests of samples from the survey area, and on laboratory tests of samples of similar soils in nearby areas. Tests verify field observations, verify properties that cannot be estimated accurately by field observation, and help characterize key soils.

The estimates of soil properties shown in the tables include the range of grain-size distribution and Atterberg limits, the engineering classifications, and the physical and chemical properties of the major layers of each soil. Pertinent soil and water features also are given.

Engineering Index Properties

Table 14 gives estimates of the engineering classification and of the range of index properties for the major layers of each soil in the survey area. Most soils have layers of contrasting properties within the upper 5 or 6 feet.

Depth to the upper and lower boundaries of each layer is indicated. The range in depth and information on other properties of each layer are given for each soil series under "Soil series and their morphology."

Texture is given in the standard terms used by the U.S. Department of Agriculture. These terms are defined according to percentages of sand, silt, and clay in the fraction of the soil that is less than 2 millimeters in diameter. "Loam," for example, is soil that is 7 to 27 percent clay, 28 to 50 percent silt, and less than 52 percent sand. If the content of particles coarser than sand is as much as 15 percent, an appropriate modifier is added, for example, "channery." Textural terms are defined in the Glossary.

Classification of the soils is determined according to the Unified soil classification system (2) and the system adopted by the American Association of State Highway and Transportation Officials (1).

The Unified system classifies soils according to properties that affect their use as construction material. Soils are classified according to grain-size distribution of the fraction less than 3 inches in diameter and according to plasticity index, liquid limit, and organic matter content. Sandy and gravelly soils are identified as GW, GP, GM, GC, SW, SP, SM, and SC; silty and clayey soils as ML, CL, OL, MH, CH, and OH; and highly organic soils as Pt. Soils exhibiting engineering properties of two groups can have a dual classification, for example, SP-SM.

The AASHTO system classifies soils according to those properties that affect roadway construction and maintenance. In this system, the fraction of a mineral soil that is less than 3 inches in diameter is classified in one of seven groups from A-1 through A-7 on the basis of grain-size distribution, liquid limit, and plasticity index. Soils in group A-1 are coarse grained and low in content of fines (silt and clay). At the other extreme, soils in group A-7 are fine grained. Highly organic soils are classified in group A-8 on the basis of visual inspection.

If laboratory data are available, the A-1, A-2, and A-7 groups are further classified as A-1-a, A-1-b, A-2-4, A-2-5, A-2-6, A-2-7, A-7-5, or A-7-6. As an additional refinement, the suitability of a soil as subgrade material can be indicated by a group index number. Group index numbers range from 0 for the best subgrade material to 20 or higher for the poorest.

Rock fragments larger than 3 inches in diameter are indicated as a percentage of the total soil on a dry-weight basis. The percentages are estimates determined mainly by converting volume percentage in the field to weight percentage.

Percentage (of soil particles) passing designated sieves is the percentage of the soil fraction less than 3 inches in diameter based on an oven-dry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

Liquid limit and plasticity index (Atterberg limits) indicate the plasticity characteristics of a soil. The

estimates are based on test data from the survey area or from nearby areas and on field examination.

The estimates of grain-size distribution, liquid limit, and plasticity index are rounded to the nearest 5 percent. Thus, if the ranges of gradation and Atterberg limits extend a marginal amount (1 or 2 percentage points) across classification boundaries, the classification in the marginal zone is omitted in the table.

Physical and Chemical Properties

Table 15 shows estimates of some characteristics and features that affect soil behavior. These estimates are given for the major layers of each soil in the survey area. The estimates are based on field observations and on test data for these and similar soils.

Clay as a soil separate consists of mineral soil particles that are less than 0.002 millimeter in diameter. In this table, the estimated clay content of each major soil layer is given as a percentage, by weight, of the soil material that is less than 2 millimeters in diameter.

The amount and kind of clay greatly affect the fertility and physical condition of the soil. They determine the ability of the soil to adsorb cations and to retain moisture. They influence shrink-swell potential, permeability, and plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earth-moving operations.

Moist bulk density is the weight of soil (oven-dry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 bar moisture tension. Weight is determined after drying the soil at 105 degrees C. In this table, the estimated moist bulk density of each major soil horizon is expressed in grams per cubic centimeter of soil material that is less than 2 millimeters in diameter. Bulk density data are used to compute 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. A bulk density of more than 1.6 can restrict water storage and root penetration. Moist bulk density is influenced by texture, kind of clay, content of organic matter, and soil structure.

Permeability refers to the ability of a soil to transmit water or air. The estimates indicate the rate of downward movement of water when the soil is saturated. They are based on soil characteristics observed in the field, particularly structure, porosity, and texture. Permeability is considered in the design of soil drainage systems, septic tank absorption fields, and construction where the rate of water movement under saturated conditions affects behavior.

Available water capacity refers to the quantity of water that the soil is capable of storing for use by plants. The capacity for water storage is given in inches of water per inch of soil for each major soil layer. The capacity varies, depending on soil properties that affect the retention of

water and the depth of the root zone. The most important properties are the content of organic matter, soil texture, bulk density, and soil structure. Available water capacity is an important factor in the choice of plants or crops to be grown and in the design and management of irrigation systems. Available water capacity is not an estimate of the quantity of water actually available to plants at any given time.

Soil reaction is a measure of acidity or alkalinity and is expressed as a range in pH values. The range in pH of each major horizon is based on many field tests. For many soils, values have been verified by laboratory analyses. Soil reaction is important in selecting crops and other plants, in evaluating soil amendments for fertility and stabilization, and in determining the risk of corrosion.

Shrink-swell potential is the potential for volume change in a soil with a loss or gain in moisture. Volume change occurs mainly because of the interaction of clay minerals with water and varies with the amount and type of clay minerals in the soil. The size of the load on the soil and the magnitude of the change in soil moisture content influence the amount of swelling of soils in place. Laboratory measurements of swelling of undisturbed clods were made for many soils. For others, swelling was estimated on the basis of the kind and amount of clay minerals in the soil and on measurements of similar soils.

If the shrink-swell potential is rated moderate to very high, shrinking and swelling can cause damage to buildings, roads, and other structures. Special design is often needed.

Shrink-swell potential classes are based on the change in length of an unconfined clod as moisture content is increased from air-dry to field capacity. The change is based on the soil fraction less than 2 millimeters in diameter. The classes are *low*, a change of less than 3 percent; *moderate*, 3 to 6 percent; and *high*, more than 6 percent. *Very high*, greater than 9 percent, is sometimes used.

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) 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 (up to 4 percent) and on soil structure and permeability. Values of K range from 0.05 to 0.69. The higher the value the more susceptible the soil is to sheet and rill erosion by water.

Erosion factor T is an estimate of the maximum average annual rate of soil erosion by wind or water that can occur without affecting crop productivity over a sustained period. The rate is in tons per acre per year.

Wind erodibility groups are made up of soils that have similar properties affecting their resistance to wind erosion in cultivated areas. The groups indicate the

susceptibility of soil to wind erosion and the amount of soil lost. Soils in Albermarle County have not been assigned to these groups.

Organic matter is the plant and animal residue in the soil at various stages of decomposition.

In table 15, 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 of a soil can be maintained or increased by returning crop residue to the soil. Organic matter affects the available water capacity, infiltration rate, and tilth. It is a source of nitrogen and other nutrients for crops.

Soil and Water Features

Table 16 gives estimates of various soil and water features. The estimates are used in land use planning that involves engineering considerations.

Hydrologic soil groups are used to estimate runoff from precipitation. Soils not protected by vegetation are assigned to one of four groups. They are grouped according to the intake of water when the soils 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 permanent 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.

Some soils in table 16 are assigned to two hydrologic soil groups. Dual grouping is used for soils that are less than 20 inches deep to bedrock. The first letter applies to areas where the bedrock is cracked and pervious, and the second letter applies to areas where the bedrock is impervious or where exposed bedrock makes up more than 25 percent of the surface of the soil.

Flooding, the temporary inundation of an area, is caused by overflowing streams or by runoff from adjacent slopes. Water standing for short periods after rainfall or snowmelt is not considered flooding, nor is water in swamps and marshes.

Table 16 gives the frequency and duration of flooding and the time of year when flooding is most likely.

Frequency, duration, and probable dates of occurrence are estimated. Frequency is expressed as none, rare, common, occasional, and frequent. *None* means that flooding is not probable; *rare* that it is unlikely but possible under unusual weather conditions; *common* that it is likely under normal conditions; *occasional* that it occurs, on the average, no more than once in 2 years; and *frequent* that it occurs, on the average, more than once in 2 years. Duration is expressed as *very brief* if less than 2 days, *brief* if 2 to 7 days, and *long* if more than 7 days. Probable dates are expressed in months; November-May, for example, means that flooding can occur during the period November through May.

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 absence of distinctive horizons that form in soils that are not subject to flooding.

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.

High water table (seasonal) is the highest level of a saturated zone in the soil in most years. The depth to a seasonal high water table applies to undrained soils. The estimates are based mainly on the evidence of a saturated zone, namely grayish colors or mottles in the soil. Indicated in table 16 are the depth to the seasonal high water table; the kind of water table—that is, perched, artesian, or apparent; and the months of the year that the water table commonly is high. A water table that is seasonally high for less than 1 month is not indicated in table 16.

An *apparent* water table is a thick zone of free water in the soil. It is indicated by the level at which water stands in an uncased borehole after adequate time is allowed for adjustment in the surrounding soil. An *artesian* water table is under hydrostatic head, generally beneath an impermeable layer. When this layer is penetrated, the water level rises in an uncased borehole. A *perched* water table is water standing above an unsaturated zone. In places an upper, or perched, water table is separated from a lower one by a dry zone.

Only saturated zones within a depth of about 6 feet are indicated. A plus sign preceding the range in depth indicates that the water table is above the surface of the

soil. The first numeral in the range indicates how high the water rises above the surface. The second numeral indicates the depth below the surface.

Depth to bedrock is given if bedrock is within a depth of 5 feet. The depth is based on many soil borings and on observations during soil mapping. The rock is specified as either soft or hard. If the rock is soft or fractured, excavations can be made with trenching machines, backhoes, or small rippers. If the rock is hard or massive, blasting or special equipment generally is needed for excavation.

Potential 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 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 mainly to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that dissolves 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 creates a severe corrosion environment. The steel in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than steel 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 is also expressed as *low, moderate, or high*. It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

Classification of the Soils

The system of soil classification used by the National Cooperative Soil Survey has six categories (5). 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 17 shows the classification of the soils in the survey area. The categories are defined in the following paragraphs.

ORDER. Ten 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 Entisol.

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 Udult (*Udic*, meaning humid, plus *ult*, from Ultisol).

GREAT GROUP. Each suborder is divided into great groups on the basis of close similarities in kind, arrangement, and degree of development of pedogenic horizons; soil moisture and temperature regimes; and base status. Each great group is identified by the name of a suborder and by a prefix that indicates a property of the soil. An example is Hapludults (*Hapl*, meaning minimal horization, plus *udults*, the suborder of the Ultisols that have a udic moisture regime).

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

FAMILY. Families are established within a subgroup on the basis of physical and chemical properties and other characteristics that affect management. Mostly the properties are those of horizons below plow depth where there is much biological activity. Among the properties

and characteristics considered are particle-size class, mineral content, temperature regime, depth of the root zone, consistence, moisture equivalent, slope, and permanent cracks. A family name consists of the name of a subgroup preceded by terms that indicate soil properties. An example is fine-loamy, mixed, mesic Typic Hapludults.

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

Soil Series and Their Morphology

In this section, each soil series recognized in the survey area is described. The descriptions are arranged in alphabetic order.

Characteristics of the soil and the material in which it formed are identified for each series. The soil is compared with similar soils and with nearby soils of other 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 (3). Many of the technical terms used in the descriptions are defined in Soil Taxonomy (5). Unless otherwise stated, colors in the descriptions are for moist soil. Following the pedon description is the range of important characteristics of the soils in the series.

The map units of each soil series are described in the section "Detailed Soil Map Units."

Abell Series

Soils of the Abell series are deep and moderately well drained. They formed in alluvium washed from the surrounding soils and in the underlying residuum. These soils are in the Piedmont. Slope ranges from 2 to 7 percent.

Abell soils commonly are near Lignum, Nason, and Worsham soils. They have a browner subsoil and are not so poorly drained as Lignum and Worsham soils. They have less clay than Nason soils.

Typical pedon of Abell silt loam, 2 to 7 percent slopes; in a hardwood and pine forest, about 9 miles southwest of Charlottesville, Trail 2591:

- O1—1 inch to 0; partly decomposed hardwood leaves and twigs.
- A1—0 to 2 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.
- A2—2 to 12 inches; light yellowish brown (10YR 6/4) silt loam; moderate fine granular structure; very friable; many fine and medium roots; 2 percent quartz pebbles as much as 2 inches in diameter; very strongly acid; gradual smooth boundary.
- B1t—12 to 18 inches; yellowish brown (10YR 5/4) clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; many fine and medium roots; few thin clay films on faces of peds; 2 percent quartz pebbles as much as 1 inch in diameter; very strongly acid; gradual smooth boundary.
- B21t—18 to 28 inches; yellowish brown (10YR 5/8) clay loam; moderate fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; many medium roots; few thin clay films on faces of peds; 2 percent quartz pebbles as much as 2 inches in diameter; very strongly acid; gradual smooth boundary.
- B22t—28 to 36 inches; yellowish brown (10YR 5/6) clay loam; common medium distinct gray (10YR 6/1) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few medium roots; few thin clay films on faces of peds; few fine flakes of mica; line of angular quartz pebbles as much as 3 inches in diameter at a depth of about 34 inches; very strongly acid; clear smooth boundary.
- IIC—36 to 48 inches; multicolored brownish yellow (10YR 6/8), light gray (10YR 7/2), and grayish brown (2.5Y 5/2) very channery loam; massive; friable; few vertical clay flows in the upper part; common fine flakes of mica; 30 percent schist fragments as much as 2 inches in length; 12 percent quartz pebbles as much as 3 inches in diameter; very strongly acid; clear wavy boundary.
- IICr—48 to 60 inches; multicolored, highly weathered schist that crushes to loamy soil material; hardness increases as depth increases.

The solum is 30 to 60 inches thick. The depth to residuum is about 24 to 48 inches. Depth to bedrock is more than 5 feet. The solum is strongly acid or very strongly acid, unless limed. Angular quartz pebbles, 1/4 inch to 2 inches in diameter, make up 0 to 15 percent of the solum. Coarse fragments range from 0 to 40 percent in the IIC horizon. Gravel lines are common between the

alluvium and residuum. Flakes of mica are in the lower part of most pedons.

The A horizon has hue of 7.5YR or 10YR, value of 3 through 6, and chroma of 2 through 6. It is sandy loam, fine sandy loam, silt loam, or loam.

The B horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 4 through 8. Mottles that have chroma of 2 or less are below a depth of about 24 inches. The B horizon is loam, sandy loam, sandy clay loam, or clay loam.

The C horizon is multicolored in shades of brown, yellow, and gray. It commonly is strongly weathered granite, gneiss, or schist that crushes easily to sandy loam or loam and gravelly, very gravelly, channery, or very channery analogues of these textures.

Albemarle Series

Soils of the Albemarle series are deep and well drained. They formed in the weathered products of meta-arkosic sandstone and quartzite. Albemarle soils are on uplands in the Piedmont. Slope commonly ranges from 2 to 45 percent.

Albemarle soils commonly are near Culpeper, Elioak, Hazel, and Louisburg soils. Albemarle soils are not so red in the subsoil as Culpeper and Elioak soils. They have more clay in the subsoil than Hazel and Louisburg soils. They have a thicker solum than Hazel soils.

Typical pedon of Albemarle fine sandy loam, 7 to 15 percent slopes; in forest about 3 miles southwest of Charlottesville, 3/4 mile northwest of the junction of State Highways 20 and 742, 500 yards southwest of Lake Reynovia:

- O1—1 inch to 0; partly decomposed forest litter of leaves, twigs, sticks, and other organic material.
- A1—0 to 1 inch; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; extremely acid; abrupt smooth boundary.
- A2—1 inch to 5 inches; brownish yellow (10YR 6/6) fine sandy loam; weak fine and medium granular structure; very friable, nonsticky and nonplastic; common fine and medium roots; 2 percent sandstone pebbles as much as 2 inches in diameter; very strongly acid; abrupt smooth boundary.
- B1t—5 to 8 inches; yellowish brown (10YR 5/6) sandy clay loam; friable, slightly sticky and slightly plastic; few fine and medium and common coarse roots; thin patchy strong brown (7.5YR 5/6) clay films on faces of peds; few fine flakes of mica; very strongly acid; clear wavy boundary.
- B21t—8 to 14 inches; strong brown (7.5YR 5/6) clay loam; moderate medium and fine subangular blocky structure; friable, sticky and slightly plastic; few medium and fine roots; thin continuous yellowish red

(5YR 5/6) clay films on faces of peds; few fine flakes of mica; very strongly acid; gradual wavy boundary.

B22t—14 to 24 inches; yellowish red (5YR 5/8) clay loam; moderate medium and fine subangular blocky structure; firm, sticky and slightly plastic; few fine and medium roots; thin continuous yellowish red (5YR 5/6) clay films on faces of peds; 5 percent reddish yellow (7.5YR 6/8) weathered sandstone fragments; few fine flakes of mica; very strongly acid; gradual wavy boundary.

B3t—24 to 30 inches; yellowish red (5YR 5/6) clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine and medium roots; thin patchy clay films on faces of peds; few fine flakes of mica; 10 percent reddish yellow (7.5YR 6/8) highly weathered sandstone fragments; very strongly acid; clear irregular boundary.

C—30 to 38 inches; yellowish brown (10YR 5/8) sandy loam; streaks of yellow (10YR 7/8) and strong brown (7.5YR 5/6); massive; firm, nonsticky and nonplastic; strongly acid; abrupt broken boundary.

Cr—38 to 50 inches; multicolored, moderately weathered, meta-arkosic sandstone; streaks in shades of yellow, brown, white, gray, and red; firm in place, crushes to sandy loam; massive; strongly acid; abrupt wavy boundary.

R—50 inches; hard meta-arkosic sandstone.

The solum is 24 to 48 inches thick. Depth to bedrock is more than 40 inches. The solum is strongly acid or very strongly acid, unless limed. Angular quartz and sandstone pebbles, 1/2 inch to 2 inches in diameter, make up 0 to 10 percent of the solum and 0 to 30 percent of the C horizon.

The A1 horizon has hue of 10YR or 2.5Y, value of 2 through 4, and chroma of 1 or 2. The A2 horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 3 through 6. An Ap horizon is present in some pedons. If present, it has colors similar to those of the A2 horizon.

The B1 horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 6. It is loam, sandy clay loam, or clay loam.

The B2t and B3 horizons have hue of 5YR through 10YR, value of 4 or 5, and chroma of 6 through 8. The B2t horizon is clay loam or sandy clay loam. The B3 horizon is loam or sandy clay loam.

The C horizon is highly variable in color and commonly contains shades of olive, gray, white, yellow, red, and brown. It is loam, fine sandy loam, sandy loam, or the gravelly analogues of these textures, or it is highly weathered meta-arkosic sandstone that crushes to these textures.

Ashe Series

Soils of the Ashe series are moderately deep and somewhat excessively drained. They formed in the weathered products of granite and granite gneiss. These soils are on the uplands in the Piedmont and on foothills of the Blue Ridge. Slope ranges from 2 to 45 percent.

Ashe soils commonly are near Chester, Hayesville, Parker, and Porters soils. Ashe soils have less clay in the subsoil than all of these soils except Parker soils. Ashe soils have fewer rock fragments throughout than Parker soils.

Typical pedon of Ashe loam, 7 to 15 percent slopes; in pasture, about 9 miles north of Charlottesville, 1 mile northeast of Earlysville, 1/2 mile south of State Highway 664 and 100 yards west of Highway 743:

A1—0 to 5 inches; dark brown (7.5YR 3/2) loam; weak fine granular structure; very friable; many fine roots; few fine flakes of mica; very strongly acid; clear smooth boundary.

A2—5 to 10 inches; brown (7.5YR 4/4) loam; moderate medium granular structure; very friable; common fine roots; few fine flakes of mica; very strongly acid; clear smooth boundary.

B—10 to 19 inches; strong brown (7.5YR 5/6) loam; weak medium subangular blocky structure; very friable, nonsticky and nonplastic; common fine roots; 2 percent angular quartz pebbles as much as 1 inch in diameter; common fine flakes of mica; very strongly acid; clear wavy boundary.

C—19 to 24 inches; multicolored strong brown (7.5YR 5/6), reddish yellow (7.5YR 6/8), reddish brown (5YR 5/3), and yellowish brown (10YR 5/6) sandy loam; massive; friable; very strongly acid; gradual wavy boundary.

Cr—24 to 50 inches; multicolored in shades of brown, yellow, white, and black granite gneiss saprolite that crushes to sandy loam; massive, rock controlled structure; very firm; strongly acid; gradual wavy boundary.

R—50 inches; hard granite gneiss bedrock.

The solum is about 10 to 30 inches thick. The depth to the Cr horizon is 20 to 40 inches. Depth to hard bedrock is more than 48 inches. The solum is strongly acid or very strongly acid, unless limed. Content of angular quartz pebbles and partly weathered granite or granite gneiss fragments ranges from 0 to 15 percent throughout. Fine mica flakes commonly are in the subsoil and the substratum.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. It is loam or sandy loam.

The B horizon has hue of 5YR through 10YR, value of 4 or 5, and chroma of 4 through 8. It is loam or sandy loam.

The C horizon is multicolored with shades of yellow, brown, white, and black. It is sandy loam or saprolite that crushes to sandy loam.

Belvoir Series

Soils of the Belvoir series are deep and somewhat poorly drained. They formed in the weathered products of granite and granite gneiss. These soils are on uplands in the Piedmont. Slope ranges from 2 to 7 percent.

Belvoir soils commonly are near Braddock, Meadowville, Thurmont, and Worsham soils. Belvoir soils are more poorly drained than Braddock, Meadowville, and Thurmont soils. They have a fragipan, and Worsham soils do not have a fragipan.

Typical pedon of Belvoir loam, 2 to 7 percent slopes; in hardwood forest, about 9 miles northwest of Charlottesville, 3/4 mile west of the junction of State Highways 609 and 665, and 100 yards south of Highway 609:

- O1—2 inches to 0; partially decomposed leaves, twigs, and other organic material.
- A1—0 to 4 inches; dark grayish brown (10YR 4/2) loam; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.
- A2—4 to 12 inches; light yellowish brown (2.5Y 6/4) loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.
- B21t—12 to 19 inches; brownish yellow (10YR 6/6) loam; few fine distinct light brownish gray (10YR 6/2) mottles; weak fine subangular blocky structure; friable, slightly plastic and slightly sticky; common fine and medium roots; thin patchy clay films on vertical and horizontal faces of peds; very strongly acid; clear smooth boundary.
- Bx—19 to 28 inches; brownish yellow (10YR 6/6) sandy loam; few fine distinct light brownish gray (10YR 6/2) mottles; moderate medium prismatic structure parting to weak thick platy; firm and brittle; medium patchy clay films on vertical faces of peds and thin very patchy clay films on horizontal faces of peds; 10 percent quartz pebbles as much as 10 millimeters in diameter; very strongly acid; clear wavy boundary.
- B22t—28 to 34 inches; yellowish brown (10YR 5/6) clay loam; few medium distinct light brownish gray (10YR 6/2) and strong brown (7.5YR 5/8) mottles; moderate coarse angular blocky structure parting to weak fine subangular blocky; friable, sticky and plastic; thin patchy clay films on vertical and horizontal faces of peds; 2 percent pebbles as much as 10 millimeters in diameter; very strongly acid; gradual wavy boundary.
- B23t—34 to 45 inches; yellowish brown (10YR 5/8) clay loam; common medium distinct light gray (10YR 7/2) and strong brown (7.5YR 5/6) mottles;

moderate coarse angular blocky structure parting to weak fine subangular blocky; friable, sticky and plastic; thin very patchy clay films on vertical and horizontal faces of peds; 2 percent pebbles as much as 20 millimeters in diameter; very strongly acid; clear smooth boundary.

IIC1—45 to 65 inches; light gray (10YR 7/2) and reddish yellow (7.5YR 6/6) clay loam; massive; firm, sticky and plastic; very strongly acid; clear wavy boundary.

IIC2—65 to 72 inches; gray (10YR 6/1) clay loam; many medium prominent yellowish brown (10YR 5/8) mottles; massive; firm, nonsticky and slightly plastic; very strongly acid.

The solum is 30 to 60 inches thick. The depth to the fragipan ranges from 16 to 30 inches. Depth to bedrock is more than 5 feet. Angular quartz pebbles make up 0 to 15 percent of the solum with higher concentrations in or near the fragipan. The solum is very strongly acid or strongly acid, unless limed.

The A horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 2 through 6. It is loam or sandy loam.

The B2t horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. It is sandy clay loam, clay loam, or loam.

The Bx horizon has colors similar to those in the B2t horizon. It is fine sandy loam, sandy loam, sandy clay loam, or loam.

The C horizon has hue of 7.5YR or 10YR, value of 5 through 7, and chroma of 1 through 8. It is loam, sandy clay loam, clay loam, or clay.

Bermudian Series

Soils of the Bermudian series are deep and well drained. They formed in loamy alluvial material washed from soils on Piedmont uplands underlain by Triassic red shale and conglomerate. Bermudian soils are subject to occasional flooding. Slope ranges from 0 to 2 percent.

Bermudian soils commonly are near Creedmoor, Klinesville, Manassas, Penn, Rowland, and Totier soils. Bermudian soils do not have an argillic horizon as do Creedmoor, Manassas, Penn, and Totier soils. Bermudian soils are deeper to bedrock than Penn and Klinesville soils. They are better drained than Creedmoor and Rowland soils.

Typical pedon of Bermudian silt loam; in a cultivated field, about 18 miles south of Charlottesville, 65 yards west of junction of State Highway 626 and Rock Castle Creek, 10 yards north of Rock Castle Creek:

- Ap—0 to 4 inches; dark reddish brown (5YR 3/4) silt loam; moderate fine granular structure; friable, slightly sticky and slightly plastic; many fine and medium roots; medium acid; abrupt smooth boundary.

- B1—4 to 12 inches; yellowish red (5YR 4/6) silt loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium and few large roots; medium acid; gradual smooth boundary.
- B21—12 to 20 inches; reddish brown (5YR 4/4) silt loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium and few large roots; medium acid; gradual smooth boundary.
- B22—20 to 27 inches; dark reddish brown (5YR 3/4) silt loam; weak medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium and few large roots; medium acid; clear wavy boundary.
- B23—27 to 39 inches; reddish brown (5YR 4/4) silty clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium and few large roots; few charcoal fragments; medium acid; clear smooth boundary.
- B24—39 to 42 inches; reddish brown (5YR 5/3) clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; medium acid; abrupt smooth boundary.
- B3—42 to 45 inches; reddish brown (5YR 5/3) sandy clay loam; many medium distinct yellowish red (5YR 5/8), strong brown (7.5YR 5/8), and light gray (5YR 6/1) mottles; weak medium subangular blocky structure; friable, slightly sticky and slightly plastic; many fine and medium roots; 10 percent quartz pebbles as much as 1/2 inch in diameter; medium acid; abrupt smooth boundary.
- IIC—45 to 60 inches; yellowish red (5YR 4/6) extremely gravelly silt loam; massive; friable, slightly sticky and nonplastic; few fine and medium roots; 70 percent quartz pebbles as much as 2 inches in diameter; medium acid.

The solum is 35 to 50 inches thick. The depth to bedrock is more than 5 feet. Coarse fragments make up 0 to 10 percent of the A and B1 horizons and the upper part of the B2 horizon, 0 to 30 percent of the lower part of the B2 horizon and the B3 horizon, and 10 to 80 percent of the IIC horizon. The solum ranges from strongly acid to medium acid throughout, unless limed.

The Ap horizon has hue of 2.5YR through 7.5YR, value of 3 or 4, and chroma of 2 through 4.

The B1 horizon has hue of 7.5YR through 2.5YR, value of 3 through 5, and chroma of 4 through 6.

The B2 horizon has hue of 5YR or 2.5YR, value of 3 through 5, and chroma of 3 or 4. It is silt loam or silty clay loam but ranges to clay loam in the lower part.

The B3 horizon has hue of 7.5YR through 2.5YR, value of 4 through 6, and chroma of 1 through 8.

The IIC horizon is variable in color and texture but is dominated by gravel.

Braddock Series

Soils of the Braddock series are deep and well drained. They are on colluvial fans and terraces in the foothills of the Blue Ridge. These soils formed in colluvial and alluvial materials from acid crystalline rock. Slope ranges from 2 to 25 percent.

Braddock soils commonly are near Ashe, Hayesville, Meadowville, and Thurmont soils. They have a thicker solum than Ashe soils. Braddock soils have mixed mineralogy, and Hayesville soils have oxidic mineralogy. They are on higher landscape positions and are better drained than Meadowville soils. Braddock soils have a redder subsoil than Thurmont soils.

Typical pedon of Braddock loam, 2 to 7 percent slopes; about 12 miles west northwest of Charlottesville, 1.5 mile southwest of White Hall on State Highway 810 and 100 yards south of the road:

- Ap—0 to 8 inches; brown (7.5YR 4/4) loam; moderate fine granular structure; very friable; many fine and medium roots; slightly acid; clear smooth boundary.
- B1—8 to 12 inches; yellowish red (5YR 4/6) clay loam; weak fine subangular blocky structure; friable; few fine roots; few fine and medium pores; 5 percent angular quartz pebbles as much as 2 inches in diameter; medium acid; gradual smooth boundary.
- B21t—12 to 23 inches; red (2.5YR 4/8) clay; moderate medium subangular blocky structure; friable, sticky and slightly plastic; common fine and medium pores; few thin patchy clay films on faces of peds; strongly acid; gradual smooth boundary.
- B22t—23 to 40 inches; red (2.5YR 4/6) clay; strong fine and medium subangular blocky structure; firm, sticky and slightly plastic; common thin clay films on faces of peds; 2 percent quartz pebbles as much as 1 inch in diameter; very strongly acid; gradual smooth boundary.
- B31t—40 to 50 inches; red (2.5YR 4/6) clay loam; few medium distinct strong brown (7.5YR 5/8) mottles; weak fine and medium subangular blocky structure; friable, sticky and plastic; few thin patchy clay films on faces of peds; 10 percent quartz pebbles as much as 1 inch in diameter; strongly acid; gradual wavy boundary.
- B32—50 to 60 inches; red (2.5YR 4/6) clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; weak very fine subangular blocky structure; common fine mica flakes; strongly acid.

The solum is more than 40 inches thick. The depth to bedrock is more than 5 feet. The content of coarse fragments ranges from 0 to 5 percent in the A horizon and from 0 to 15 percent in the B horizon. The IIB and C

horizons if present are 0 to 40 percent coarse fragments. The solum is very strongly acid or strongly acid, unless limed.

The A horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 2 through 6. It is loam or clay loam.

The B1 horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8. It is sandy clay loam or clay loam.

The B horizon has hue of 10R or 2.5YR, value of 4 through 6, and chroma of 6 or 8. The B horizon is clay loam or clay. A IIB horizon is present in some pedons. It has colors similar to those of the B horizon. It is mottled and is clay loam or clay or their gravelly analogues.

The IIC horizon, if present, is multicolored, and the percent of coarse fragments is highly variable.

Buncombe Series

Soils of the Buncombe series are deep and excessively drained. They formed in sandy alluvium. These soils are along streams in the Piedmont. Slope is 0 to 2 percent.

Buncombe soils commonly are near Chewacla, Riverview, and Toccoa soils. Buncombe soils are better drained and have less clay than all of these soils.

Typical pedon of Buncombe loamy sand; in a cultivated field, 15 miles south of Charlottesville, about 100 yards west of Warren Ferry and 10 yards north of the James River:

- Ap—0 to 10 inches; dark yellowish brown (10YR 4/4) loamy sand; single grain; loose; common fine roots; 2 percent quartz pebbles less than 2 inches in diameter; common fine flakes of mica; slightly acid; gradual smooth boundary.
- C1—10 to 15 inches; brown (10YR 4/3) sand; single grain; loose; common fine roots; common fine flakes of mica; slightly acid; gradual smooth boundary.
- C2—15 to 30 inches; brown (10YR 4/3) sand; single grain; loose; common fine roots; few decomposed wood fragments; common fine flakes of mica; slightly acid; gradual smooth boundary.
- C3—30 to 43 inches; brown (10YR 4/3) sand; single grain; loose; common fine roots; common fine flakes of mica; few decomposed wood fragments; slightly acid; clear boundary.
- C4—43 to 48 inches; dark yellowish brown (10YR 4/4) loamy sand; single grain; loose; common fine roots; few worm channels filled with dark brown (10YR 3/3) sandy loam; common fine flakes of mica; slightly acid; gradual smooth boundary.
- C5—48 to 60 inches; yellowish brown (10YR 5/4) loamy sand; single grain; loose; common fine roots; few worm channels filled with dark brown (10YR 3/3) sandy loam; common fine flakes of mica; slightly acid.

Depth to bedrock is more than 5 feet. The pedon is very strongly acid to slightly acid throughout, unless limed. Coarse fragments range from 0 to 2 percent, but layers of pebbles and cobblestones are in the horizons of some pedons. Mica flakes are few to many throughout.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 through 6.

The C horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 3 through 6. The C horizon commonly is loamy sand or sand; however, below a depth of 40 inches in many pedons it ranges from sand to fine sandy loam and can be stratified.

Cataska Series

Soils of the Cataska series are moderately deep and excessively drained. They formed in the weathered products of sandstone, shale, and phyllite. These soils are on uplands in the Blue Ridge. Slope ranges from 7 to 60 percent. The Cataska soils in this survey area are mapped in a complex with Hartleton soils.

Cataska soils commonly are near Catoctin, Hartleton, Myersville, and Tusquitee soils. Cataska soils have a lower percent base saturation than Catoctin and Myersville soils. Cataska soils are shallower to bedrock than Hartleton, Myersville, and Tusquitee soils.

Typical pedon of Cataska channery loam in an area of Cataska-Hartleton very stony loams, 25 to 60 percent slopes; in hardwood forest, about 20 miles northwest of Charlottesville, 0.3 mile south of milepost 86 on Skyline Drive, and 35 yards east of Skyline Drive:

- A1—0 to 2 inches; very dark grayish brown (10YR 3/2) channery loam; weak fine granular structure; very friable; many fine and medium roots; 30 percent phyllite and shale fragments as much as 3 inches in length; medium acid; clear smooth boundary.
- A2—2 to 5 inches; brown (10YR 4/3) channery loam; moderate fine granular structure; very friable; many fine and medium roots; 30 percent phyllite and shale fragments as much as 4 inches in length; strongly acid; gradual smooth boundary.
- B1—5 to 9 inches; yellowish brown (10YR 5/4) very channery silt loam; weak fine subangular blocky structure; very friable; common fine roots; 55 percent phyllite and shale fragments as much as 4 inches in length; very strongly acid; gradual wavy boundary.
- B2—9 to 20 inches; yellowish brown (10YR 5/4) very channery silt loam; moderate fine subangular blocky structure; friable; 55 percent phyllite and shale fragments as much as 5 inches in length; very strongly acid; gradual wavy boundary.
- Cr—20 to 38 inches; 90 percent soft to very hard phyllite and shale fragments as much as 6 inches in length coated with light yellowish brown (10YR 6/4) loam;

rock controlled structure; very strongly acid; gradual wavy boundary.

R—38 inches; hard phyllite and shale bedrock.

The solum is 12 to 20 inches thick. The depth to hard bedrock ranges from 20 to 40 inches. Fragments of shale and phyllite range from 20 to 35 percent in the A horizon, 35 to 70 percent in the B horizon, and 70 to 90 percent in the C horizon. The solum is strongly acid or very strongly acid throughout, unless limed.

The A horizon has hue of 10YR, value of 3 through 5, and chroma of 2 through 4. It is channery analogues of loam or silt loam.

The B horizon has hue of 10YR, value of 4 or 5, and chroma of 4 or 6. It is channery or very channery analogues of silt loam or loam.

The Cr horizon has hue of 10YR, value of 5 or 6, and chroma of 4 or 6. It commonly is oriented phyllite and shale coated with silt loam or loam.

Catoctin Series

Soils of the Catoctin series are moderately deep and well drained. They are on Southwest Mountain in the Piedmont and on the Blue Ridge. These soils formed in materials weathered primarily from greenstone. Slope ranges from 7 to 60 percent.

Catoctin soils commonly are near Fauquier, Lew, Myersville, and Rabun soils. Catoctin soils have more coarse fragments and a thinner solum than these soils.

Typical pedon of Catoctin silt loam, 25 to 45 percent slopes; in mixed hardwood forest, about 10 miles northeast of Charlottesville, 2 miles northwest of Cismont, and 70 yards west of State Highway 600:

- A1—0 to 2 inches; dark brown (10YR 4/3) silt loam; weak fine granular structure; very friable; many fine roots; 10 percent greenstone channers as much as 4 inches in length; medium acid; gradual smooth boundary.
- A2—2 to 5 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; very friable; many fine and medium roots; 12 percent greenstone channers as much as 3 inches in length; strongly acid; clear wavy boundary.
- B—5 to 18 inches; strong brown (7.5YR 5/6) very channery silt loam; moderate fine subangular blocky structure; interrupted by irregularly shaped bodies of reddish brown (5YR 4/4) silty clay loam with moderate fine subangular blocky structure and thin patchy clay films on faces of peds; friable; common medium and large roots; 40 percent greenstone channers as much as 4 inches in length; strongly acid; gradual irregular boundary.
- C—18 to 28 inches; yellowish brown (10YR 5/4) extremely channery silt loam; massive; friable; 70 percent greenstone channers and quartz fragments

as much as 6 inches in length; medium acid; gradual irregular boundary.

R—28 inches; hard greenstone bedrock.

The solum ranges from 12 to 24 inches in thickness. The depth to bedrock ranges from 20 to 40 inches. Content of rock fragments ranges from 5 to 35 percent in the A horizon, from 35 to 55 percent in the B horizon, and from 35 to 80 percent in the C horizon. The solum is strongly acid or medium acid, unless limed. The C horizon is medium acid to neutral.

The A horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 2 through 4. It is loam or silt loam or their channery, cobbly, or stony analogues.

The B horizon has hue of 5YR through 2.5Y, value of 4 or 5, and chroma of 4 through 8. It is silt loam or silty clay loam or their very channery analogues.

The C horizon has colors similar to those of the B horizon, or it is multicolored. It is loamy and is 35 to 80 percent rock fragments.

Chester Series

Soils of the Chester series are deep and well drained. They formed in the weathered products of granite and granite gneiss. These soils are on uplands in the Piedmont. Slope ranges from 2 to 45 percent.

Chester soils commonly are near Ashe, Hayesville, and Meadowville soils. Chester soils have more clay in the subsoil than Ashe soils. They are not so red or do not have as much clay in the subsoil as Hayesville soils. Chester soils do not have the lithologic discontinuity that Meadowville soils have.

Typical pedon of Chester loam, 7 to 15 percent slopes; in pasture, about 5 miles north of Charlottesville, 0.6 mile south of the junction of State Highways 660 and 661 and 200 yards south of 661:

- Ap—0 to 7 inches; dark brown (10YR 4/3) loam; weak fine granular structure; very friable; many fine roots; few fine flakes of mica; strongly acid; abrupt smooth boundary.
- B1—7 to 13 inches; strong brown (7.5YR 5/6) loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; common fine flakes of mica; very strongly acid; clear smooth boundary.
- B21t—13 to 18 inches; yellowish red (5YR 4/6) clay loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine roots; few thin clay films on faces of peds; common fine flakes of mica; very strongly acid; gradual smooth boundary.
- B22t—18 to 34 inches; yellowish red (5YR 5/6) clay loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; few thin clay films on faces of peds;

many fine flakes of mica; very strongly acid; gradual wavy boundary.

- B3—34 to 41 inches; yellowish red (5YR 5/8) loam; weak medium subangular blocky structure; friable, slightly sticky and nonplastic; few fine roots; many fine flakes of mica; very strongly acid; clear wavy boundary.
- C1—41 to 48 inches; light yellowish brown (10YR 6/4), yellowish red (5YR 5/6), and strong brown (7.5YR 5/8) loam; massive; friable; few very fine roots; many fine flakes of mica; very strongly acid; gradual wavy boundary.
- C2—48 to 60 inches; yellowish brown (10YR 5/6), strong brown (7.5YR 5/8), white (10YR 8/2), and very dark gray (10YR 3/1) sandy loam; massive; friable; few very fine roots; many fine flakes of mica; very strongly acid.

The solum is 30 to 50 inches thick. The depth to hard bedrock is more than 5 feet. The solum is strongly acid or very strongly acid, unless limed. It is 0 to 15 percent fragments of quartz, granite, or gneiss ranging in size from pebbles to stones.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. It is loam or silt loam.

The B horizon has hue of 5YR through 10YR, value of 4 or 5, and chroma of 4 through 8. It is loam to silty clay loam.

The C horizon commonly is multicolored in hue of 10YR or 7.5YR, value of 3 through 8, and chroma of 1 through 8. It is silt loam, loam, or sandy loam.

Chewacla Series

Soils of the Chewacla series are deep and somewhat poorly drained. They formed in alluvium. These soils are on flood plains along streams throughout the survey area. They are subject to occasional flooding. Slope is 0 to 2 percent.

Chewacla soils commonly are near Dogue, Riverview, Toccoa, Wahee, and Wehadkee soils. Chewacla soils are not so well drained as Dogue, Riverview, and Toccoa soils. They have less clay in the solum and are less developed than Dogue or Wahee soils. Chewacla soils are not so poorly drained as Wahadkee soils.

Typical pedon of Chewacla silt loam; in a cultivated field, about 6 miles southeast of Charlottesville, 0.3 mile west of the junction of State Highway 729 and Buck Island Creek, and 170 yards north of Buck Island Creek:

- Ap—0 to 8 inches; dark brown (7.5YR 4/4) silt loam; moderate fine granular structure; very friable, slightly sticky and slightly plastic; many fine roots; few fine flakes of mica; neutral; abrupt smooth boundary.
- B1—8 to 16 inches; light yellowish brown (10YR 6/4) silt loam; common fine distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common

fine roots; few fine brown concretions; few fine flakes of mica; slightly acid; gradual smooth boundary.

- B21—16 to 26 inches; pale brown (10YR 6/3) silty clay loam; common coarse prominent yellowish red (5YR 4/6) and few fine faint light gray (10YR 7/2) mottles; moderate fine subangular blocky structure; friable, slightly sticky and plastic; common fine roots; few fine brown concretions, few fine flakes of mica; slightly acid; gradual wavy boundary.
- B22—26 to 40 inches; light brownish gray (10YR 6/2) silty clay loam; common fine distinct strong brown (7.5YR 5/6) and few fine distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; common fine brown concretions; few fine flakes of mica; medium acid; gradual wavy boundary.
- B23—40 to 60 inches; yellowish brown (10YR 5/4) and light brownish gray (2.5YR 6/2) silt loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few fine brown concretions; few fine flakes of mica; medium acid.

The solum is 40 to 60 inches thick. The depth to bedrock is more than 5 feet. The solum is strongly acid to slightly acid, unless limed. Flakes of mica are few to many throughout the solum.

The A horizon has hue of 10YR or 7.5YR, value of 3 through 5, and chroma of 2 through 4.

The upper part of the B horizon has hue of 10YR through 5YR, value of 3 through 6, and chroma of 3 or 4. The lower part of the B horizon has hue of 2.5Y or 10YR, value of 5 or 6, and chroma of 1 through 4. Gray mottles are within a depth of 24 inches, and high chroma mottles are common in the B horizon. The B horizon ranges from loam to silty clay loam.

A C horizon is present in some pedons. It consists of stratified alluvial deposits of sand and gravel, loam, sandy loam, or loamy sand.

Craigsville Series

Soils of the Craigsville series are deep and well drained. They formed in moderately coarse textured alluvium. These soils are along streams near the base of the Blue Ridge. Slope is 0 to 2 percent.

Craigsville soils commonly are near Ashe, Braddock, and Thurmont soils. Craigsville soils contain more coarse fragments and are deeper to bedrock than Ashe soils. They have more coarse fragments and less clay in the subsoil than Braddock or Thurmont soils.

Typical pedon of Craigsville loam; in pasture, about 12 miles northwest of Charlottesville, 3/4 mile northwest of the junction of State Highways 810 and 614, 20 yards north of the Moormans River:

- Ap—0 to 8 inches; brown (7.5YR 4/4) loam; weak fine and very fine granular structure; friable, slightly sticky and nonplastic; many fine and medium roots; 10 percent pebbles of greenstone, granite, and quartzite as much as 3 inches in diameter; medium acid; clear smooth boundary.
- B1—8 to 15 inches; brown (7.5YR 4/4) gravelly sandy loam; weak fine and medium subangular blocky structure; very friable; common fine and medium roots; 15 percent pebbles and 5 percent cobbles of greenstone, granite, and quartzite as much as 8 inches in diameter; strongly acid; abrupt smooth boundary.
- B2—15 to 23 inches; brown (7.5YR 4/4) very cobbly sandy loam; weak very fine subangular blocky structure; very friable; common fine and medium roots; few organic stains on faces of rock fragments; 30 percent pebbles and 30 percent cobbles of greenstone, granite, and quartzite as much as 8 inches in diameter; strongly acid; gradual wavy boundary.
- C1—23 to 38 inches; strong brown (7.5YR 4/6) extremely cobbly sandy loam; massive; very friable; common fine and medium roots; 30 percent pebbles and 30 percent cobbles of greenstone, granite, and quartzite as much as 10 inches in diameter and 10 percent stones of greenstone as much as 15 inches in diameter; strongly acid; gradual wavy boundary.
- C2—38 to 60 inches; strong brown (7.5YR 4/6) extremely gravelly loamy sand; single grain; loose; few fine and medium roots; 40 percent pebbles and 20 percent cobbles of greenstone, granite, and quartzite as much as 10 inches in diameter and 15 percent stones of greenstone as much as 15 inches in diameter; strongly acid.

The solum is 20 to 40 inches thick. The depth to bedrock is more than 5 feet. Pebbles and cobbles make up 5 to 15 percent of the A horizon, 15 to 70 percent of the B horizon, and 35 to 70 percent of the C horizon. Stones make up 0 to 15 percent of the C horizon. The pedon is very strongly acid to medium acid throughout, unless limed.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 3 or 4.

The B horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 or 6. It is gravelly, very gravelly, cobbly, or very cobbly analogues of loam or sandy loam.

The C horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 through 6. It is very gravelly, gravelly, cobbly, or very cobbly analogues of loamy sand or sandy loam. Thin, unconforming horizons may have less than 15 percent gravel or cobbles.

Creedmoor Series

Soils of the Creedmoor series are deep and moderately well drained to somewhat poorly drained.

They formed in alluvial and residual materials weathered from Triassic shale. These soils are on uplands in the Piedmont. Slope is 2 to 7 percent.

Creedmoor soils commonly are near Manassas, Mayodan, Penn, and Totier soils. Creedmoor soils are more poorly drained than these soils and have more clay in the solum than Manassas and Penn soils.

Typical pedon of Creedmoor loam, 2 to 7 percent slopes; in a hay field, about 18 miles south of Charlottesville, 210 yards east of the junction of State Highways 626 and 627, and 50 yards north of 626:

- Ap—0 to 8 inches; brown (7.5YR 5/4) loam; weak fine and medium granular structure; friable, slightly sticky and slightly plastic; common fine roots; neutral; abrupt smooth boundary.
- B1—8 to 14 inches; yellowish brown (10YR 5/6) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; many brown (10YR 4/3) krotovinas; slightly acid; clear smooth boundary.
- B21t—14 to 22 inches; yellowish brown (10YR 5/6) silty clay loam; common medium faint strong brown (7.5YR 5/6) mottles; moderate medium and fine subangular blocky structure; friable, sticky and plastic; few fine roots; common thin clay films on faces of peds; common brown (10YR 4/3) krotovinas; medium acid; clear smooth boundary.
- B22t—22 to 43 inches; yellowish brown (10YR 5/6) clay; common medium distinct light gray (10YR 7/2) mottles; moderate fine and medium subangular blocky structure; firm, sticky and plastic; common thin clay films on faces of peds; very strongly acid; gradual smooth boundary.
- B3tg—43 to 60 inches; light gray (10YR 7/2) clay; many coarse distinct brownish yellow (10YR 6/6) and few fine prominent reddish yellow (7.5YR 6/8) mottles; weak medium and coarse subangular blocky structure; firm, sticky and plastic; many fine vesicular pores; common thick clay films on faces of peds; very strongly acid; clear smooth boundary.
- IIC—60 to 70 inches; multicolored red (2.5YR 4/8) and reddish yellow (7.5YR 6/8) clay loam; few pockets of light gray (2.5Y 7/2) silty clay; massive; firm, sticky and plastic; 2 percent quartz pebbles as much as 2 inches in diameter at top of horizon; very strongly acid.

The solum is 40 to 70 inches thick. The depth to bedrock is more than 5 feet. The solum is strongly acid or very strongly acid throughout, unless limed.

The A1 horizon, if present, has hue of 10YR or 2.5Y, value of 3 through 6, and chroma of 2 through 4. The Ap horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 2 through 6. The A2 horizon, if present, has hue of 10YR or 2.5Y, value of 6, and chroma of 2 through 4.

The B1 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 3 through 6. The B2t horizon has hue of 5YR through 10YR, value of 5 or 6, and chroma of 4 through 6. The B2t horizon is silty clay loam or clay. The B3 horizon has hue of 2.5YR through 10YR, value of 5 through 7, and chroma of 1 or 2.

The IIC horizon has hue of 2.5YR through 7.5YR, value of 4 through 7, and chroma of 2 through 8.

Cullen Series

Soils of the Cullen series are deep and well drained. They formed in the weathered products of mixed basic and acidic rocks. These soils are on uplands in the Piedmont. Slope ranges from 2 to 25 percent.

Cullen soils commonly are near Ashe, Fluvanna, Hayesville, and Orange soils. They have a redder subsoil than Ashe, Fluvanna, and Orange soils. In addition, Cullen soils have more clay in the subsoil and a thicker solum than Ashe soils. Cullen soils have mixed mineralogy, and Hayesville soils have oxidic mineralogy.

Typical pedon of Cullen loam, 2 to 7 percent slopes; in a cultivated field, about 4 miles northwest of Charlottesville, 1.5 miles southeast of the junction of State Highways 601 and 658, and 0.75 mile southeast of 658:

- Ap—0 to 8 inches; reddish brown (5YR 4/4) loam; moderate fine granular structure; friable; many fine roots; 1 percent angular quartz pebbles as much as 1/2 inch in diameter; medium acid; abrupt smooth boundary.
- B21t—8 to 11 inches; dark reddish brown (5YR 3/4) clay; moderate fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine and medium roots; few thin clay films on faces of peds; 1 percent quartz pebbles as much as 1 inch in diameter; medium acid; clear smooth boundary.
- B22t—11 to 30 inches; red (10YR 4/6) clay; strong fine and medium subangular blocky structure; firm, sticky and slightly plastic; few fine roots; common thin clay films on faces of peds; 1 percent angular quartz pebbles as much as 1 inch in diameter; strongly acid; clear smooth boundary.
- B23t—30 to 48 inches; dark red (10R 3/6) clay; strong fine and medium subangular blocky structure; firm, sticky and plastic; continuous medium clay films on faces of peds; 3 percent quartz pebbles as much as 2 inches in diameter; strongly acid; clear wavy boundary.
- B3t—48 to 60 inches; red (10YR 4/6) clay loam; common medium distinct yellowish brown (10YR 5/8) mottles; weak fine subangular blocky structure; friable, sticky and slightly plastic; few thin clay films on faces of peds; few fine flakes of mica; 6 percent weathered granodiorite fragments 2 to 4 inches in length; strongly acid; gradual smooth boundary.

C—60 to 67 inches; red (2.5YR 4/6), yellowish red (5YR 5/6), and yellowish brown (10YR 5/6) loam; massive; friable; common fine flakes of mica; 10 percent weathered hornblende gneiss fragments; strongly acid; gradual wavy boundary.

Cr—67 to 81 inches; partly weathered granodiorite.

The solum is 40 to 60 inches thick. The depth to hard rock is more than 5 feet. The solum ranges from medium acid to strongly acid, unless limed. Angular quartz pebbles 1/4 inch to 2 inches in diameter and weathered rock fragments 1 inch to 4 inches in length make up 0 to 10 percent of the solum.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. It ranges from fine sandy loam to silt loam and is clay loam in severely eroded areas.

The Bt horizon has hue of 2.5YR or 10R, value of 3 or 4, and chroma of 4 through 8. It is clay, clay loam, or silty clay.

The C horizon is strongly weathered hornblende gneiss that crushes easily to clay loam or loam. In some pedons, the C horizon contains as much as 20 percent fragments of weathered granodiorite or similar kind of rock.

Culpeper Series

Soils of the Culpeper series are deep and well drained. They formed in the weathered products of meta-arkosic sandstone and quartzite. These soils are on uplands in the Piedmont. Slope ranges from 2 to 25 percent.

Culpeper soils commonly are near Albemarle, Elioak, Hazel, and Louisburg soils. Culpeper soils are redder and have more clay in the solum than the Albemarle, Hazel, and Louisburg soils. They have more sand and less silt than the Elioak soils.

Typical pedon of Culpeper fine sandy loam, 2 to 7 percent slopes; in hardwood forest, about 3 miles southwest of Charlottesville, 3/4 mile northwest of junction of State Highways 20 and 742, 1/3 mile southwest of Lake Reynovia:

- O1—1 inch to 0; partially decomposed leaves, twigs, and other organic material.
- A1—0 to 2 inches; brown (10YR 4/3) fine sandy loam; weak very fine granular structure; very friable, nonsticky and nonplastic; many fine roots; 2 percent angular quartz pebbles as much as 2 inches in diameter; very strongly acid; abrupt smooth boundary.
- A2—2 to 8 inches; yellowish brown (10YR 5/6) fine sandy loam; weak fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; 2 percent angular quartz pebbles less than 2 inches in diameter; strongly acid; gradual smooth boundary.

B21t—8 to 15 inches; yellowish red (5YR 5/8) clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; many fine and medium roots; thin patchy clay films on faces of peds; very strongly acid; gradual smooth boundary.

B22t—15 to 30 inches; red (2.5YR 4/6) clay; moderate medium subangular blocky structure; firm, slightly sticky and slightly plastic; few medium roots; thin continuous clay films on faces of peds; 2 percent weathered sandstone fragments as much as 2 inches in diameter; few medium flakes of mica; very strongly acid; gradual smooth boundary.

B3t—30 to 37 inches; red (2.5YR 4/8) sandy clay loam; common medium distinct yellowish red (5YR 5/6) and brownish yellow (10YR 6/8) mottles; weak medium and fine subangular blocky structure; friable, slightly sticky and slightly plastic; few medium roots; thin very patchy clay films on vertical faces of peds; very strongly acid; abrupt smooth boundary.

C—37 to 45 inches; reddish yellow (5YR 6/6) fine sandy loam; massive; loose, nonsticky and nonplastic; strongly acid; abrupt smooth boundary.

Cr—45 to 50 inches; yellowish brown (10YR 5/8) highly weathered arkosic sandstone streaked with yellow (10YR 7/8) and strong brown (7.5YR 5/8) that crushes to fine sandy loam; massive; very firm in place; very strongly acid; gradual wavy boundary.

R—50 inches; hard meta-arkosic sandstone.

The solum is 30 to 50 inches thick. The depth to hard bedrock ranges from 4 to 6 feet. The solum is very strongly acid or strongly acid throughout, unless limed. Content of coarse fragments ranges from 0 to 10 percent in the solum and from 0 to 30 percent in the C horizon.

The A horizon has hue of 2.5Y through 7.5YR, value of 3 through 6, and chroma of 2 through 8. It is fine sandy loam, sandy loam, sandy clay loam, or clay loam and gravelly analogues of these textures.

The B1 horizon, where present, has hue of 5YR, value of 4 through 6, and chroma of 3 through 8. It is sandy clay loam, clay loam, or loam.

The B21t horizon has hue of 10R through 5YR, value of 4 or 5, and chroma of 6 or 8. The B22t and B3 horizons have hue of 10R or 2.5YR, value of 4 or 5, and chroma of 6 or 8. The B horizon is clay or clay loam. The B3 horizon is sandy clay loam or clay loam.

The C horizon commonly is multicolored, but in some pedons it has a single matrix color. It is fine sandy loam or gravelly fine sandy loam.

Davidson Series

Soils of the Davidson series are deep and well drained. They formed in the weathered products of greenstone. These soils are on uplands in the Piedmont. Slopes are 2 to 15 percent.

Davidson soils commonly are near Catoctin, Myersville, and Rabun soils. Davidson soils have more clay in the subsoil and a redder and thicker solum than Catoctin and Myersville soils. They have a thicker solum than Rabun soils.

Typical pedon of Davidson clay loam, 2 to 7 percent slopes; in mixed hardwood forest, about 10 miles southwest of Charlottesville, 2 miles south of Carters Bridge along State Highway 627:

A1—0 to 4 inches; dark reddish brown (2.5YR 3/4) clay loam; strong medium granular structure; very friable; many fine and medium roots; 3 percent quartz fragments as much as 1 inch in diameter; medium acid; clear smooth boundary.

B1—4 to 10 inches; dark red (2.5YR 3/6) clay loam; weak fine subangular blocky structure; friable, slightly sticky and nonplastic; many fine and medium roots; medium acid; gradual smooth boundary.

B21t—10 to 26 inches; dark red (2.5YR 3/6) clay; strong fine and medium subangular blocky structure; firm, slightly sticky and slightly plastic; few fine and medium roots; few thin clay films on faces of peds; 3 percent greenstone fragments as much as 1/2 inch in length; medium acid; gradual smooth boundary.

B22t—26 to 52 inches; dark red (10R 3/6) clay; strong medium subangular blocky structure; firm, slightly sticky and slightly plastic; many thin clay films on faces of peds; 3 percent greenstone fragments as much as 2 inches in length; medium acid; gradual smooth boundary.

B23t—52 to 63 inches; dark red (10R 3/6) clay; strong fine and medium subangular blocky structure; firm, slightly sticky and slightly plastic; many thin clay films on faces of peds; 3 percent greenstone fragments as much as 3 inches in length; medium acid; gradual wavy boundary.

B3t—63 to 88 inches; dark red (10R 3/6) clay loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable, nonsticky and slightly plastic; few thin clay films on faces of peds; 5 percent greenstone fragments less than 3 inches in length; strongly acid; clear wavy boundary.

C—88 to 105 inches; multicolored red (10R 4/8), strong brown (7.5YR 5/6), and yellowish brown (10YR 5/8) weathered greenstone that crushes to silty clay loam; massive; firm; strongly acid.

The solum is 60 to 100 inches or more thick. The depth to hard rock is more than 5 feet. The solum is medium acid or strongly acid, unless limed. Angular quartz pebbles 1/4 inch to 2 inches in diameter and weathered rock fragments 1 inch to 4 inches in length make up 0 to 10 percent of the solum.

The A horizon has hue of 2.5YR or 5YR, value of 2 or 3, and chroma of 2 through 4. It is clay loam but ranges to clay in severely eroded areas.

The B2t horizon has hue of 2.5YR or 10R, value of 3, and chroma of 2 through 6. The B3t horizon has hue of 2.5YR or 10R, value of 3 or 4, and chroma of 2 through 8. It is clay, clay loam, or silty clay loam.

The C horizon is mottled in shades of red, yellow, brown, and black. It is highly weathered greenstone that crushes to silty clay loam, clay loam, or silty clay.

Dogue Series

Soils of the Dogue series are deep and moderately well drained. They formed in alluvium. These soils are along the larger streams in the Piedmont. Slope is 2 to 7 percent.

Dogue soils commonly are near Chewacla, McQueen, and Wahee soils. Dogue soils have more clay in the subsoil than Chewacla soils. They are not so well drained as McQueen soils and are better drained than Wahee soils.

Typical pedon of Dogue silt loam, 2 to 7 percent slopes; in a cultivated field, about 11 miles south of Charlottesville, 3/4 mile southeast of State Highway 795 bridge across Hardware River, 200 yards west of river, 70 yards north of farm road:

- Ap—0 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; weak fine granular structure; very friable; many fine roots; slightly acid; clear smooth boundary.
- B1t—10 to 14 inches; yellowish brown (10YR 5/6) clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; many fine roots; few thin clay films on faces of peds; slightly acid; clear smooth boundary.
- B21t—14 to 24 inches; yellowish brown (10YR 5/6) clay; moderate medium subangular blocky structure; firm, sticky and plastic; common fine roots; common thin continuous clay films on faces of peds; medium acid; clear smooth boundary.
- B22t—24 to 36 inches; yellowish brown (10YR 5/6) clay; common fine prominent light gray (10YR 7/1) and common fine distinct reddish yellow (5YR 6/8) mottles; moderate medium subangular blocky structure; firm, sticky and plastic; few fine roots; few medium clay films on faces of peds; strongly acid; clear smooth boundary.
- B23t—36 to 43 inches; yellowish brown (10YR 5/8) clay loam; many coarse distinct light gray (10YR 7/1) mottles; moderate coarse subangular blocky structure; friable, sticky and slightly plastic; few thin clay films on faces of peds; strongly acid; gradual smooth boundary.
- B3t—43 to 52 inches; strong brown (7.5YR 4/6) clay loam; common medium prominent light gray (10YR 7/1) mottles; weak medium subangular blocky

structure; friable, sticky and slightly plastic; strongly acid; gradual smooth boundary.

IIC—52 to 70 inches; strong brown (7.5YR 5/6) clay loam; few fine prominent mottles of light gray (10YR 7/2); massive; friable, slightly sticky and slightly plastic; 5 percent rounded pebbles of quartz; strongly acid.

The solum is 40 to 60 inches thick. The depth to bedrock is more than 5 feet. The solum is strongly acid or very strongly acid, unless limed. Rounded pebbles of quartz and other rocks, 1/4 inch to 3 inches in diameter, make up 0 to 15 percent of the solum and 0 to 25 percent of the C horizon.

The A horizon has hue of 10YR or 2.5Y, value of 4 or 5, and chroma of 3 through 7. The A2 horizon, where present, has value of 5 through 7 and chroma of 4 through 6. The A horizon is loam, silt loam, or fine sandy loam.

The B1t horizon, where present, has hue of 10YR or 2.5Y, value of 5 through 7, and chroma of 4 through 8. It is clay loam or sandy clay loam.

The B2t horizon has hue of 7.5YR, 10YR, or 2.5Y, value of 4 through 6, and chroma of 4 through 8. Low chroma mottles are below a depth of about 24 inches. The B2t horizon is clay loam or clay.

The B3t horizon, where present, has colors similar to those of the B2t horizon. It is clay loam, sandy clay loam, or loam.

The C horizon commonly is stratified and ranges from sandy loam to clay loam.

Dyke Series

Soils of the Dyke series are deep and well drained. They formed in colluvium from greenstone in the Blue Ridge. Slope ranges from 2 to 25 percent.

Dyke soils commonly are near Braddock, Davidson, Hayesville, Rabun, and Unison soils. Dyke soils have darker red colors throughout than Braddock, Hayesville, and Unison soils. They are not so deep as Davidson soils. They have a lithologic discontinuity not present in Davidson and Rabun soils. Also, Dyke soils have mixed mineralogy, and Rabun soils have kaolinitic mineralogy.

Typical pedon of Dyke silt loam, 2 to 7 percent slopes; in a field, about 7 miles south of Charlottesville, 3 miles southwest of the junction of State Highways 627 and 795, 3/4 mile northwest of 627, 100 yards east of cemetery:

- Ap—0 to 8 inches; dark reddish brown (2.5YR 3/4) silt loam; moderate very fine granular structure; friable; many fine roots; slightly acid; abrupt smooth boundary.
- B1t—8 to 15 inches; dark red (2.5YR 3/6) clay loam; weak fine subangular blocky structure; firm, sticky and slightly plastic; many fine and medium roots;

- few thin patchy clay films on faces of peds; common dark oxide concretions; slightly acid; clear smooth boundary.
- B21t—15 to 30 inches; dark red (10R 3/6) clay; weak fine and medium subangular blocky structure; firm, sticky and plastic; common thin patchy clay films on faces of peds; common dark oxide concretions; medium acid; gradual smooth boundary.
- B22t—30 to 43 inches; dark red (10R 3/6) clay; weak medium subangular blocky structure; firm, sticky and plastic; many medium clay films on faces of peds; common dark oxide concretions; medium acid; abrupt wavy boundary.
- lIB23t—43 to 64 inches; dark red (2.5YR 3/6) clay; few medium distinct strong brown (7.5YR 5/6) mottles; weak fine angular blocky structure; friable, slightly sticky and slightly plastic; few thin patchy clay films on faces of peds; upper 3 inches has 20 percent greenstone and quartzite pebbles as much as 2 inches in diameter; strongly acid.

The solum is 40 to 70 inches thick. The depth to bedrock is more than 5 feet and commonly more than 10 feet. In some pedons, pebbles and cobblestones are in stone lines. The solum is 0 to 25 percent gravel and cobbles. The soil is strongly acid or very strongly acid, unless limed.

The Ap horizon has hue of 2.5YR or 5YR, value of 2 or 3, and chroma of 2 through 6. It is silt loam, or eroded areas are clay loam.

The Bt horizon has hue of 10R or 2.5YR, value of 2 or 3, and chroma of 2 through 6. The value and chroma of 2 are restricted to the B1 horizon. The B horizon is clay, silty clay, silty clay loam, or clay loam. Gravel, cobble, or stone lines are at the top of the lithologic discontinuity in most pedons.

Elioak Series

Soils of the Elioak series are deep and well drained. They formed in material weathered from micaceous crystalline rock. These soils are in the Piedmont. Slope ranges from 2 to 25 percent.

Elioak soils commonly are near Glenelg, Hazel, Manor, and Worsham soils. Elioak soils have a redder, more clayey subsoil than Glenelg, Hazel, and Manor soils. They are on higher landscape positions and are better drained than Worsham soils.

Typical pedon of Elioak loam, 2 to 7 percent slopes; in pasture, 3 miles northeast of Charlottesville, 2 miles northeast of the junction of State Highways 631 and 651, 3/4 mile north of the convergence of the North and South Forks of the Rivanna River:

- A1—0 to 3 inches; dark brown (10YR 4/3) loam; weak fine granular structure; very friable, nonsticky and nonplastic; many fine roots; few fine flakes of mica; slightly acid; clear smooth boundary.

A2—3 to 8 inches; reddish brown (5YR 5/4) loam; weak fine granular structure; very friable, nonsticky and nonplastic; common fine roots; few fine flakes of mica; 2 percent angular quartz pebbles as much as 2 inches in diameter; medium acid; clear smooth boundary.

B1t—8 to 12 inches; yellowish red (5YR 5/8) silty clay loam; common medium faint red (2.5YR 5/8) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine roots; thin patchy clay films on faces of peds; few fine flakes of mica; medium acid; clear wavy boundary.

B21t—12 to 17 inches; red (2.5YR 4/6) silty clay; moderate fine subangular blocky structure; friable, sticky and slightly plastic; common fine roots; thin patchy clay films on faces of peds; common fine flakes of mica; medium acid; gradual smooth boundary.

B22t—17 to 32 inches; red (2.5YR 4/6) silty clay; few medium faint yellowish red (5YR 4/6) mottles; strong very fine subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; thin continuous clay films on faces of peds; common fine flakes of mica; very strongly acid; gradual smooth boundary.

B23t—32 to 39 inches; red (2.5YR 4/6) silty clay loam; common fine distinct yellowish red (5YR 5/8) mottles; moderate medium platy structure parting to moderate fine subangular blocky; friable, slightly sticky and slightly plastic; thin continuous clay films on faces of peds; many fine flakes of mica; 2 percent schist fragments as much as 2 inches in diameter; very strongly acid; gradual smooth boundary.

B3t—39 to 49 inches; red (2.5YR 4/8) silt loam; weak medium platy structure parting to weak very fine subangular blocky; very friable, nonsticky and slightly plastic; thin patchy clay films on faces of peds; many fine mica flakes; very strongly acid; gradual smooth boundary.

C—49 to 72 inches; mottled strong brown (7.5YR 5/8), yellowish red (5YR 5/8), and reddish brown (5YR 5/4) silt loam; massive; very friable, nonsticky and nonplastic; common thick clay flows in relic rock joints; many fine flakes of mica; strongly acid.

The solum is 30 to 50 inches thick. The depth to hard bedrock is more than 60 inches. Angular quartz pebbles, mainly in the surface layer, and schist fragments, throughout the solum, range from 0 to 15 percent. The solum is very strongly acid to medium acid, unless limed.

The A horizon has hue of 5YR through 10YR, value of 3 through 5, and chroma of 2 through 4. Value of 3 is limited to the A1 horizon. It is silt loam, loam, clay loam, or fine sandy loam.

The Bt horizon has hue of 10R through 5YR, value of 4 or 5, and chroma of 4 through 8. The B1t and B2t horizons are silty clay loam, clay loam, silty clay, or clay. The B3t horizon ranges from silt loam to clay loam.

The C horizon has hue of 2.5YR through 7.5YR and value and chroma of 4 through 6, or it is multicolored. It is loam, silt loam, or fine sandy loam and commonly contains more mica than the solum.

Fauquier Series

Soils of the Fauquier series are deep and well drained. They formed in the weathered products of greenstone. These soils are on uplands in the Piedmont. Slope ranges from 2 to 45 percent.

Fauquier soils commonly are near Catoclin, Myersville, and Rabun soils. They have a redder subsoil and more clay than Catoclin and Myersville soils. Fauquier soils are not so deep and have less red colors in the upper part of the solum than Rabun soils.

Typical pedon of Fauquier silt loam, 2 to 7 percent slopes, in pasture, about 9 miles south of Charlottesville, 1 mile southwest of the junction of State Highways 708 and 717, 165 yards southeast of Highway 717.

Ap—0 to 6 inches; reddish brown (5YR 4/4) silt loam; moderate medium granular structure; very friable, slightly sticky and slightly plastic; many fine and common medium roots; 10 percent greenstone fragments less than 1 inch in diameter; slightly acid; abrupt smooth boundary.

B1t—6 to 8 inches; red (2.5YR 4/6) silty clay loam; moderate fine and medium subangular blocky structure; friable, sticky and slightly plastic; common fine and medium roots; thin patchy clay films on faces of peds; 12 percent greenstone fragments less than 2 inches in diameter; slightly acid; abrupt smooth boundary.

B21t—8 to 17 inches; red (2.5YR 4/8) clay; strong fine and medium subangular blocky structure; firm, sticky and plastic; common fine and medium roots; thin continuous clay films on faces of peds; medium acid; clear smooth boundary.

B22t—17 to 24 inches; red (2.5YR 4/6) clay; few fine prominent reddish yellow (7.5YR 6/8) mottles; fine and medium subangular blocky structure; firm, sticky and plastic; common fine and medium roots; thin continuous clay films on faces of peds; medium acid; clear smooth boundary.

B3t—24 to 34 inches; red (2.5YR 4/6) silty clay; weak medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine and medium roots; few thin patchy clay films on faces of peds; 3 percent weathered greenstone fragments less than 2 inches in diameter; medium acid; clear wavy boundary.

C1—34 to 50 inches; red (2.5YR 5/8) silt loam; few medium distinct reddish yellow (7.5YR 6/8) and few

fine prominent black (10YR 2/1) mottles; massive, rock controlled structure; silty clay loam coating on faces of rock; few fine flakes of mica; 15 percent greenstone fragments less than 3 inches in diameter; medium acid; clear wavy boundary.

C2—50 to 60 inches; red (2.5YR 4/8) saprolite that crushes to silty clay loam; common medium distinct brownish yellow (10YR 6/8) and few fine prominent black (10YR 2/1) mottles; massive, rock controlled structure; firm in place, slightly sticky and slightly plastic; common fine flakes of mica; 10 percent greenstone fragments less than 3 inches in diameter; medium acid.

The solum is 20 to 40 inches thick. The depth to hard rock is more than 40 inches. The solum is medium acid or strongly acid, unless limed. Angular quartz pebbles 1/4 inch to 2 inches in diameter and weathered rock fragments 1 inch to 4 inches in length make up 0 to 15 percent of the soil.

The A horizon has hue of 5YR or 2.5YR, value of 3 or 4, and chroma of 4. It commonly is silt loam or silty clay loam.

The Bt horizon has hue of 2.5YR or 10R, value of 4, and chroma of 6 or 8. It is silty clay loam, silty clay, or clay.

The C horizon is strongly weathered greenstone that crushes easily to silty clay loam or silt loam. It is variable in shades of red, yellow, brown, and black.

Fluvanna Series

Soils of the Fluvanna series are deep and well drained. They formed in the weathered products of mixed basic and acidic crystalline rocks. These soils are on uplands in the Piedmont. Slope ranges from 2 to 15 percent.

Fluvanna soils commonly are near Cullen, Orange, Nason, and Tatum soils. The subsoil of Fluvanna soils is not as red as the subsoil of Cullen and Tatum soils and is not as plastic as the subsoil of Orange soil. Fluvanna soils are better drained than Orange soils. They have more clay and less silt in the solum than Nason soils.

Typical pedon of Fluvanna silt loam, 2 to 7 percent slopes, in pine forest, about 10 miles southeast of Charlottesville, 1.5 miles southwest of Woodridge, about 0.5 mile south of State Highway 708:

O1—1 inch to 0; partly decomposed pine needles and twigs.

A1—0 to 2 inches; very dark grayish brown (10YR 3/2) silt loam; moderate fine granular structure; very friable; many fine and medium roots; very strongly acid; clear smooth boundary.

A2—2 to 8 inches; brown (7.5YR 5/4) silt loam; moderate fine granular structure; friable; many fine

- and medium roots; 2 percent angular quartz pebbles; very strongly acid; clear smooth boundary.
- B1—8 to 14 inches; strong brown (7.5YR 5/6) clay loam; moderate fine subangular blocky structure; friable, slightly sticky and slightly plastic; many fine and medium roots; 2 percent angular quartz pebbles; very strongly acid; clear smooth boundary.
- B21t—14 to 22 inches; yellowish red (5YR 4/6) clay; strong medium subangular blocky structure; firm, slightly sticky and plastic; common fine and medium roots; many thin clay films on faces of peds; strongly acid; clear smooth boundary.
- B22t—22 to 38 inches; yellowish red (5YR 4/6) clay; strong coarse subangular blocky structure; firm, slightly sticky and plastic; common medium roots; many thin and medium clay films on faces of peds; very strongly acid; clear smooth boundary.
- B3t—38 to 48 inches; yellowish red (5YR 5/6) silty clay loam; many medium faint brownish yellow (10YR 6/6) and strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; friable, slightly sticky and plastic; common thin clay films on faces of peds; 10 percent weathered fragments 1 inch to 3 inches in length; very strongly acid; gradual smooth boundary.
- C—48 to 60 inches; multicolored strong brown (7.5YR 5/6), reddish yellow (5YR 6/6), and yellowish brown (10YR 5/6) silt loam; massive; firm; very strongly acid.

The solum is 30 to 55 inches thick. The depth to bedrock is more than 5 feet. The solum is strongly acid or very strongly acid, unless limed. Weathered hornblende gneiss fragments and angular quartz pebbles as much as 3 inches in length make up to 10 percent of the solum and up to 30 percent of the substratum.

The A horizon has hue of 7.5YR through 2.5Y, value of 3 through 6, and chroma of 2 through 6. It is fine sandy loam, loam, or silt loam.

The B horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 4 through 8. Mottling and streaks of high chroma are common in the lower part of the B horizon. The B2 horizon is clay loam, silty clay loam, silty clay, or clay.

The C horizon is strongly weathered rock that crushes easily to silt loam, clay loam, or silty clay loam and is underlain by partly weathered hornblende gneiss or similar kinds of rock.

Glenelg Series

Soils of the Glenelg series are deep and well drained. They formed in the weathered products of quartz mica schist. These soils are in the Piedmont. Slope ranges from 2 to 45 percent.

Glenelg soils commonly are near Albemarle, Culpeper, Elioak, and Hazel soils. Glenelg soils have more mica and silt throughout than Albemarle soils. They are not so

red or do not have so much clay in the subsoil as Culpeper and Elioak soils. Glenelg soils have more clay in the subsoil than Hazel soils.

Typical pedon of Glenelg loam, 7 to 15 percent slopes; in mixed hardwood forest, about 10 miles northeast of Charlottesville, 1 mile north of the junction of State Highways 600 and 784, 1/4 mile west of 784 and about 200 yards south of farm road:

- O1—2 inches to 1/2 inch; undecomposed forest litter of leaves and twigs.
- O2—1/2 inch to 0; very dark grayish brown (10YR 3/2) partially decomposed leaf litter; abrupt smooth boundary.
- A1—0 to 2 inches; dark brown (10YR 3/3) loam; weak fine granular structure; very friable, nonsticky and slightly plastic; many fine and medium and few large roots; 5 percent angular quartz pebbles; strongly acid; abrupt smooth boundary.
- A2—2 to 8 inches; dark yellowish brown (10YR 4/4) loam; moderate coarse granular structure; friable, nonsticky and slightly plastic; many fine and medium and few large roots; 5 percent angular quartz gravel; strongly acid; abrupt smooth boundary.
- B21t—8 to 12 inches; strong brown (7.5YR 5/6) silty clay loam; few medium distinct yellowish brown (10YR 5/4) mottles; moderate fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium and few large roots; few thin clay films on faces of peds; common fine flakes of mica; very strongly acid; clear smooth boundary.
- B22t—12 to 24 inches; yellowish red (5YR 4/6) silty clay loam; moderate fine and medium subangular blocky structure; friable, slightly sticky and plastic; common fine and medium and few large roots; common medium clay films on faces of peds; common fine flakes of mica; 2 percent weathered schist fragments as much as 1 inch in length; very strongly acid; clear smooth boundary.
- B3t—24 to 28 inches; reddish brown (5YR 5/4) loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium and few large roots; thick patchy clay films on faces of peds; common fine flakes of mica; very strongly acid; clear wavy boundary.
- C1—28 to 40 inches; yellowish brown (10YR 5/6), yellowish red (5YR 4/6), and strong brown (7.5YR 5/6) saprolite that crushes to loam; massive, rock controlled structure; firm in place, slightly sticky and nonplastic; few fine and medium roots; few 1/4 inch seams filled with red (2.5YR 4/8) clay loam; many fine flakes of mica; strongly acid; gradual smooth boundary.
- C2—40 to 80 inches; brown (7.5Y 5/4) saprolite that crushes to loam; massive, rock controlled structure;

firm in place, nonsticky and nonplastic; few fine roots; many fine flakes of mica; strongly acid.

The solum is 18 to 30 inches thick. The depth to hard bedrock is more than 5 feet. The solum is strongly acid or very strongly acid, unless limed. Quartz or mica schist ranging from pebbles to stones makes up 0 to 15 percent of this soil.

The A horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 1 through 4.

The B horizon has hue of 5YR through 10YR, value of 4 or 5, and chroma of 4 through 8. It is loam, silt loam, or silty clay loam.

The C horizon commonly is multicolored in hue of 10YR or 7.5YR, value of 4 through 6, and chroma of 2 through 8. It is saprolite that crushes to silt loam or loam.

Hartleton Series

Soils of the Hartleton series are deep and well drained. They formed in the weathered products of phyllite and shale. These soils are on the Blue Ridge. Slope ranges from about 7 to 60 percent. The Hartleton soils in this survey area are only mapped in a complex with Cataska soils.

Hartleton soils commonly are near Cataska, Catoctin, Myersville, and Tusquitee soils. Hartleton soils are deeper to bedrock than Cataska soils. They have a lower percent base saturation than Catoctin or Myersville soils. Hartleton soils have more coarse fragments and are shallower to bedrock than Tusquitee soils.

Typical pedon of Hartleton channery loam in an area of Hartleton-Cataska very stony loams, 7 to 15 percent slopes; in hardwood forest, about 16 miles east-northeast of Charlottesville, 0.3 mile south of milepost 94 at the Turk Branch fire trail, 35 yards east of Skyline Drive:

- A1—0 to 7 inches; yellowish brown (10YR 5/6) channery loam; weak fine granular structure; very friable; many fine and medium roots; 30 percent phyllite and shale fragments as much as 3 inches in length; very strongly acid; gradual smooth boundary.
- B21—7 to 11 inches; yellowish brown (10YR 5/6) very channery loam; weak fine subangular blocky structure; friable; many fine and medium roots; 35 percent phyllite and shale fragments as much as 4 inches in length; very strongly acid; gradual smooth boundary.
- B22t—11 to 24 inches; brownish yellow (10YR 6/6) very channery loam; moderate medium subangular blocky structure; friable; many fine and medium roots; common thin clay films on faces of peds; 40 percent phyllite and shale fragments as much as 4 inches in length; very strongly acid; gradual smooth boundary.
- B3t—24 to 32 inches; brownish yellow (10YR 6/6) channery loam; weak medium subangular blocky structure; friable; few thin clay films on faces of

peds; 30 percent phyllite and shale fragments as much as 5 inches in length; very strongly acid; gradual wavy boundary.

- C—32 to 44 inches; brownish yellow (10YR 6/6) extremely channery loam; massive; friable; 65 percent phyllite and shale fragments as much as 6 inches in length; very strongly acid; gradual wavy boundary.

R—44 inches; fractured, hard phyllite and shale.

The solum is 30 to 40 inches thick. The depth to bedrock ranges from 40 to 60 inches. Shale and phyllite fragments 1/2 inch to 6 inches in length make up 15 to 40 percent of the A horizon, 35 to 60 percent of the B horizon, and 50 to 90 percent of the C horizon. The soil is strongly acid or very strongly acid throughout, unless limed.

The A horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 2 through 6.

The B horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 or 6. It is channery or very channery analogues of silt loam, loam, clay loam, or silty clay loam.

The C horizon has colors similar to those of the B horizon. It is very channery or extremely channery analogues of silt loam or loam.

Hayesville Series

Soils of the Hayesville series are deep and well drained. They formed in the weathered products of granite, granite gneiss, and granodiorite. These soils are on uplands in the Piedmont. Slope ranges from 2 to 45 percent.

Hayesville soils commonly are near Ashe, Braddock, Chester, and Cullen soils. Hayesville soils have a redder subsoil and contain more clay than Ashe and Chester soils. They have oxidic mineralogy, and Braddock soils have mixed mineralogy. Hayesville soils are mesic, and Cullen soils are thermic.

Typical pedon of Hayesville loam, 2 to 7 percent slopes; in woodland, about 9 miles northwest of Charlottesville, 3/4 mile east of Free Union, and 100 yards south of State Highway 665:

- O1—1 inch to 0; partly decomposed leaves and other organic matter.
- A1—0 to 2 inches; brown (7.5YR 4/4) loam; weak fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; strongly acid; clear smooth boundary.
- A2—2 to 7 inches; strong brown (7.5YR 5/6) loam; moderate fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; strongly acid; clear smooth boundary.
- B1t—7 to 11 inches; yellowish red (5YR 4/8) clay loam; weak fine and medium subangular blocky structure;

friable, slightly sticky and slightly plastic; common fine and medium roots; thin very patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.

B21t—11 to 29 inches; red (2.5YR 4/8) clay; moderate medium and fine subangular blocky structure; friable, slightly sticky and plastic; few fine and medium roots; thin continuous clay films on faces of peds; very strongly acid; gradual smooth boundary.

B22t—29 to 40 inches; red (2.5YR 4/6) clay; strong medium and fine subangular blocky structure; friable, slightly sticky and plastic; few fine and medium roots; thin continuous clay films on faces of peds; very strongly acid; gradual smooth boundary.

B3t—40 to 58 inches; red (2.5YR 4/8) clay loam; common medium distinct strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable, slightly sticky and plastic; thin patchy clay films on vertical faces of peds; common fine flakes of mica; 2 percent weathered granite gneiss fragments as much as 2 inches in diameter; strongly acid; gradual smooth boundary.

C1—58 to 67 inches; yellowish red (5YR 4/8) sandy clay loam; common fine distinct reddish yellow (7.5YR 6/8) mottles; massive; very friable, nonsticky and nonplastic; common fine flakes of mica; 2 percent weathered granite gneiss fragments as much as 2 inches in diameter; strongly acid; clear smooth boundary.

C2—67 to 83 inches; multicolored red (2.5YR 4/8) and yellowish red (5YR 4/8) granite saprolite that crushes to sandy clay loam; massive; very friable, nonsticky and nonplastic; 80 percent strongly weathered granite gneiss; common fine flakes of mica; strongly acid.

The solum is 40 to 60 inches thick. The depth to bedrock is more than 5 feet. The solum is strongly acid or very strongly acid, unless limed. It is 0 to 15 percent angular pebbles 1/4 inch to 3 inches in diameter.

The A horizon has hue of 10YR or 7.5YR, value of 4 or 5, and chroma of 2 through 6. It is fine sandy loam, loam, or clay loam.

The Bt horizon has hue of 5YR through 10R, value of 4 or 5, and chroma of 6 or 8. The B2 horizon is clay loam or clay. The B1 and B3 horizons are sandy clay loam or clay loam.

The C horizon has colors and textures similar to those of the B3 horizon, or it is multicolored. It is weathered granite, granite gneiss, or granodiorite that crushes easily to loam, sandy loam, or sandy clay loam.

Hazel Series

Soils of the Hazel series are moderately deep and excessively drained. They formed in the weathered products of graywacke sandstone and mica schist.

These soils are on uplands in the Piedmont. Slope ranges from 7 to 45 percent.

Hazel soils commonly are near Albemarle, Culpeper, Elioak, and Glenelg soils. Hazel soils do not have an argillic horizon that these other soils have. Also, they have less clay in the subsoil than these soils.

Typical pedon of Hazel loam, 25 to 45 percent slopes; in pasture, about 3 miles northeast of Charlottesville, 2 miles northeast of the junction of State Highways 631 and 651, about 1/2 mile north of the confluence of the North and South Forks of the Rivanna River:

A1—0 to 2 inches; dark brown (10YR 3/3) loam; weak fine granular structure; very friable; many fine roots; common fine flakes of mica; very strongly acid; clear smooth boundary.

A2—2 to 10 inches; brown (7.5YR 4/4) loam; weak fine granular structure; very friable; common fine roots; few fine flakes of mica; 1 percent angular quartz pebbles; very strongly acid; clear smooth boundary.

B—10 to 20 inches; brown (7.5YR 4/4) loam; weak fine subangular blocky structure; friable, nonsticky and nonplastic; few fine roots; common fine flakes of mica; 10 percent angular quartz pebbles; very strongly acid; gradual smooth boundary.

C—20 to 30 inches; strong brown (7.5YR 4/6) channery loam; few fine faint yellowish red (5YR 5/8) mottles; massive; very friable; many fine flakes of mica; 25 percent sandstone fragments as much as 5 inches in length; very strongly acid; abrupt wavy boundary.

R—30 inches; hard, fine grained graywacke sandstone.

The solum is 15 to 25 inches thick. Depth to bedrock ranges from 20 to 40 inches. Coarse fragments range from 0 to 34 percent in the solum and 20 to 50 percent in the C horizon. The soil is strongly acid or very strongly acid throughout, unless limed.

The A1 horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. The A2 horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 or 4. It is loam, silt loam, or channery analogues of these textures.

The B horizon has hue of 7.5YR or 10YR, value of 4 or 5 and chroma of 4 through 8. It is loam, silt loam, or channery analogues of these textures.

The C horizon has colors similar to those of the B horizon. In some pedons it is multicolored. It is channery or very channery analogues of loam or silt loam.

Hiwassee Series

Soils of the Hiwassee series are deep and well drained. They formed in old alluvium. These soils are in the Piedmont. Slope ranges from 2 to 25 percent.

Hiwassee soils commonly are near Dogue, Masada, McQueen, and Turbeville soils. Hiwassee soils have

darker red colors throughout than these soils. Hiwassee soils are better drained than Dogue soils.

Typical pedon of Hiwassee loam, 2 to 7 percent slopes; in a field, about 1 3/4 miles northeast of Charlottesville, 1/2 mile northwest of the confluence of the North Fork and the South Fork of the Rivanna River, and 275 yards east of the South Fork of the Rivanna River:

- Ap—0 to 8 inches; dark reddish brown (5YR 3/4) loam; moderate fine granular structure; very friable, slightly sticky and slightly plastic; medium acid; clear smooth boundary.
- B1—8 to 13 inches; dark red (2.5YR 3/6) clay; moderate medium subangular blocky structure; firm, sticky and plastic; many fine roots; 2 percent pebbles as much as 1 inch in diameter; medium acid; gradual wavy boundary.
- B21t—13 to 36 inches; dark red (2.5YR 3/6) clay; strong medium subangular blocky structure; firm, sticky and plastic; few fine roots; common thin continuous clay films on faces of peds; 2 percent pebbles up to 1 inch in diameter; medium acid; gradual smooth boundary.
- B22t—36 to 47 inches; dark red (2.5YR 3/6) clay; strong fine subangular blocky structure; firm, sticky and plastic; few fine roots; many thin continuous clay films on faces of peds; 2 percent pebbles as much as 1 inch in diameter; medium acid; gradual smooth boundary.
- IIB23t—47 to 64 inches; dark red (2.5YR 3/6) silty clay loam; few fine prominent brownish yellow (10YR 6/8) mottles; weak fine subangular blocky structure; firm, slightly sticky and slightly plastic; few thin continuous clay films on faces of peds; 2 percent pebbles as much as 2 inches in diameter; strongly acid.

The solum is more than 40 inches thick. The depth to bedrock is more than 5 feet. Stone lines of gravel and cobbles are in some pedons. The solum is 0 to 15 percent gravel and cobbles. The soil ranges from slightly acid to very strongly acid throughout, unless limed.

The A horizon has hue of 5YR, value of 3, and chroma of 3 or 4. It is loam and in eroded areas is clay loam.

The Bt horizon has hue of 10R or 2.5YR, value of 3, and chroma of 4 or 6. It is clay, clay loam, or silty clay loam.

Klinesville Series

Soils of the Klinesville series are shallow and well drained. They formed in material weathered from Triassic red shale and sandstone. These soils are on uplands in the Piedmont. Slope ranges from 2 to 45 percent.

Klinesville soils commonly are near Manassas, Penn, Rapidan, and Totier soils. Klinesville soils are shallower

to bedrock and have more coarse fragments throughout than these soils.

Typical pedon of Klinesville channery silt loam, 7 to 15 percent slopes; in pasture, about 16 miles south of Charlottesville, 0.5 mile southeast of the junction of State Highways 6 and 626, about 100 yards north of a stream, 150 yards south of an old barn:

- Ap—0 to 4 inches; reddish brown (2.5YR 4/4) channery silt loam; moderate fine and medium granular structure; very friable, slightly sticky and nonplastic; many very fine and few medium roots; 20 percent shale fragments less than 1/2 inch in length; few fine mica flakes; medium acid; gradual smooth boundary.
- B—4 to 10 inches; dark red (2.5YR 3/6) very channery silty clay loam; weak fine and very fine subangular blocky structure; friable, slightly sticky and nonplastic; common very fine and few medium roots; 40 percent shale fragments less than 2 inches in length coated with silt; strongly acid; abrupt wavy boundary.
- C—10 to 14 inches; reddish brown (2.5YR 4/4) very channery silt loam; massive; very friable, slightly sticky and nonplastic; few very fine roots on faces of shale; 60 percent oriented shale; very strongly acid; gradual wavy boundary.
- R—14 inches; oriented red (2.5YR 4/6) shale bedrock; ripplable.

The thickness of the solum coincides with the depth to bedrock and ranges from 10 to 20 inches. Coarse fragments of shale and sandstone make up 20 to 30 percent of the A horizon, 20 to 60 percent of the B horizon, and 50 to 90 percent of the C horizon. The soil is medium acid to very strongly acid, unless limed.

The A horizon has hue of 10R through 5YR, value of 3 or 4, and chroma of 3 or 4.

The B horizon has hue of 10R through 5YR, value of 3 or 4, and chroma of 3 through 6. It is channery or very channery silt loam.

The C or Cr horizon has colors similar to those of the B1 horizon. It is very shaly or extremely shaly analogues of silt loam or of saprolite that crushes to silt loam.

Lew Series

Soils of the Lew series are deep and well drained. They formed in the weathered products of greenstone colluvium. These soils are in the Blue Ridge. Slope ranges from 7 to 25 percent.

Lew soils commonly are near Catoctin, Myersville, and Unison soils. Lew soils are deeper to bedrock than Catoctin soils. They have more coarse fragments in the subsoil than Myersville and Unison soils. Lew soils contain less clay in the subsoil than Unison soils.

Typical pedon of Lew channery silt loam in an area of Lew extremely stony silt loam, 7 to 15 percent slopes; in hardwood forest, about 16 miles west of Charlottesville, 1 3/4 miles up the South Fork of the Moormans River from the Charlottesville Reservoir, 15 yards east of the fire trail:

- A1—0 to 3 inches; dark brown (7.5YR 3/2) channery silt loam; weak fine granular structure; friable; many fine and medium roots; 30 percent flat greenstone fragments as much as 3 inches in length; strongly acid; gradual smooth boundary.
- A2—3 to 7 inches; brown (7.5YR 4/4) channery silt loam; weak fine granular structure; friable; many fine and medium roots; 30 percent flat greenstone fragments as much as 3 inches in length; strongly acid; gradual smooth boundary.
- B21t—7 to 15 inches; yellowish red (5YR 5/8) channery silty clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common medium roots; few thin patchy clay films on faces of peds; 30 percent flat greenstone fragments as much as 3 inches in length; strongly acid; gradual smooth boundary.
- B22t—15 to 30 inches; yellowish red (5YR 4/6) very channery silty clay loam; moderate medium subangular blocky structure; friable, slightly sticky and nonplastic; common medium roots; thin patchy clay films on faces of peds; 50 percent flat greenstone fragments as much as 3 inches in length; very strongly acid; gradual smooth boundary.
- IIB3t—30 to 60 inches; strong brown (7.5YR 5/6) very channery silty clay loam; weak fine subangular blocky structure; friable, slightly sticky and nonplastic; thin very patchy clay films on faces of peds to a depth of 45 inches; 70 percent flat greenstone fragments as much as 6 inches in length; very strongly acid.

The solum is 40 to 60 inches thick. The depth to bedrock is more than 5 feet. Coarse fragments of crystalline rock make up 15 to 35 percent of the A horizon and 35 to 70 percent of the B horizon. The soil is very strongly acid or strongly acid, unless limed.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4.

The B21t horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 through 8. The B22t and IIB3t horizons have hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8. The Bt horizon is channery or very channery clay loam or silty clay loam.

Lignum Series

Soils of the Lignum series are deep and somewhat poorly drained to moderately well drained. They formed in the weathered products of sericitic schist. These soils

are on the uplands in the Piedmont. Slope commonly is 2 to 7 percent.

Lignum soils commonly are near Manteo, Nason, Tatum, and Worsham soils. Lignum soils are deeper to bedrock than Manteo soils. They are more poorly drained than Nason and Tatum soils. Lignum soils are not so poorly drained as Worsham soils.

Typical pedon of Lignum silt loam, 2 to 7 percent slopes; in mixed hardwood forest, about 10 miles east of Charlottesville, 0.6 mile northeast of the junction of State Highways 686 and 600, 0.2 mile east of 686:

- O1—2 inches to 0; partially decomposed leaves, twigs, and other forest litter.
- A1—0 to 2 inches; pale brown (10YR 6/3) silt loam; weak very fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.
- A2—2 to 9 inches; very pale brown (10YR 7/4) silt loam; moderate fine granular structure; very friable; many fine roots; 5 percent angular quartz pebbles 1/4 to 1 inch in diameter; strongly acid; gradual smooth boundary.
- B1—9 to 15 inches; light yellowish brown (10YR 6/4) silty clay loam; few fine faint yellowish brown (10YR 5/8) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common medium roots; 5 percent angular quartz pebbles 1/4 inch to 2 inches in diameter; very strongly acid; gradual smooth boundary.
- B21t—15 to 25 inches; brownish yellow (10YR 6/6) silty clay loam; few fine distinct yellowish red (5YR 5/6) and common medium distinct light gray (10YR 7/2) mottles; moderate medium subangular blocky structure; friable, slightly sticky and plastic; common medium roots; few thin clay films on faces of peds; 2 percent angular quartz pebbles 1/4 inch to 2 inches in diameter; strongly acid; gradual smooth boundary.
- B22t—25 to 35 inches; brownish yellow (10YR 6/8) silty clay; few medium prominent light gray (10YR 7/2) mottles; moderate medium subangular blocky structure; firm, slightly sticky and slightly plastic; few medium roots; common thin clay films on faces of peds; strongly acid; gradual wavy boundary.
- B3t—35 to 38 inches; yellowish brown (10YR 5/6) silty clay loam; common medium distinct gray (10YR 6/1) and common medium faint strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few thin clay films on faces of peds; 2 percent schist fragments 1/4 inch to 2 inches in length; very strongly acid; gradual wavy boundary.
- C—38 to 51 inches; pale yellow (5Y 7/3) channery silt loam; many coarse faint light gray (5Y 7/1) mottles; massive, rock controlled structure; friable; 30

- percent schist fragments 1/4 inch to 2 inches in length; very strongly acid; gradual wavy boundary.
- Cr—51 to 58 inches; multicolored brown, yellow, black, and gray schist saprolite that crushes to silt loam; massive, rock controlled structure; firm in place; 50 percent hard schist fragments; very strongly acid; gradual wavy boundary.
- R—58 inches; hard schist bedrock; rippable.

The solum is 20 to 40 inches thick. Depth to bedrock is 40 inches or more. Coarse fragments range from 0 to 15 percent in the solum and from 20 to 50 percent in the substratum. The solum is strongly acid or very strongly acid throughout, unless limed.

The A horizon has hue of 2.5Y or 10YR, value of 5 through 7, and chroma of 2 through 4.

The B horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 4 through 8. It is silty clay loam or clay.

The C horizon is mostly weathered schist in shades of brown, yellow, gray, white, and black. The schist crushes to silt loam and the channery or very channery analogues of silt loam.

Louisburg Series

Soils of the Louisburg series are deep and well drained to excessively drained. They formed in the weathered products from granite and gneiss. These soils are on uplands in the Piedmont. Slope ranges from 7 to 45 percent.

Louisburg soils commonly are near Albemarle, Culpeper, Hazel, Pacolet, and Wedowee soils. Louisburg soils have less clay in the subsoil than these soils, except Hazel soils. They are deeper to bedrock than Hazel soils.

Typical pedon of Louisburg sandy loam, 15 to 25 percent slopes; in mixed hardwood and pine forest, 4.5 miles north of Charlottesville, about .25 mile south of State Highway 606, about 1/2 mile east-southeast of the junction of State Highways 743 and 606:

- O1—1 inch to 0; partly decomposed leaves and twigs.
- A1—0 to 5 inches; brown (10YR 4/3) sandy loam; weak fine granular structure; very friable; few coarse and many fine and medium roots; 5 percent angular quartz pebbles 1/4 inch to 2 inches in diameter; strongly acid; clear smooth boundary.
- B1—5 to 11 inches; light yellowish brown (10YR 6/4) sandy loam; weak fine and medium subangular blocky structure; very friable; common fine and medium roots; 10 percent angular quartz pebbles 1/4 inch to 2 inches in diameter; strongly acid; clear smooth boundary.
- B21—11 to 15 inches; yellowish brown (10YR 5/6) sandy loam; weak fine and medium subangular blocky structure; friable, slightly sticky and nonplastic; common fine roots; sand grains coated and bridged with clay; 15 percent angular quartz

pebbles 1/4 inch to 2 inches in diameter; few fine flakes of mica; very strongly acid; clear smooth boundary.

- B22—15 to 23 inches; yellowish brown (10YR 5/6) sandy loam; moderate fine subangular blocky structure; friable, slightly sticky and nonplastic; few fine and very fine roots; sand grains coated and bridged with clay; common fine flakes of mica; thin lenses of sandy clay less than 20 percent of horizon thickness; very strongly acid; gradual wavy boundary.

- C1—23 to 60 inches; multicolored brownish yellow (10YR 6/6), yellow (10YR 7/8), and dark yellowish brown (10YR 4/6) granite saprolite that crushes to sandy loam; massive; very firm; few very fine roots; many fine and medium flakes of mica; very strongly acid.

The solum is about 20 to 40 inches thick. The depth to hard bedrock is more than 48 inches. The soil is strongly acid or very strongly acid, unless limed. Content of angular quartz pebbles and partly weathered granite gneiss fragments ranges from 0 to 15 percent in the A and B horizons. Fine mica flakes commonly are in the subsoil and substratum.

The A horizon has hue of 10YR through 2.5Y, value of 3 through 5, and chroma of 2 through 4.

The B horizon has hue of 10YR through 2.5Y, value of 4 through 6, and chroma of 4 through 8. A discontinuous argillic horizon has colors similar to those of the B horizon and includes strong brown. It is sandy loam or sandy clay loam.

The C horizon is strongly weathered granite or arkosic sandstone. It is multicolored in shades of yellow, brown, white, and black. It is sandy loam or loamy sand.

Manassas Series

Soils of the Manassas series are deep and well drained to moderately well drained. They formed in local alluvium and colluvium washed from the surrounding uplands. These soils are on uplands in the Piedmont. Slope is 2 to 7 percent.

Manassas soils commonly are near Bermudian, Creedmoor, Klinessville, Penn, and Totier soils. Manassas soils are not so well drained as Bermudian, Klinessville, Penn, and Totier soils. They are better drained than Creedmoor soils.

Typical pedon of Manassas silt loam, 2 to 7 percent slopes; in pasture, about 18 miles south of Charlottesville, 1 mile northwest of Tapscott, 330 yards east of State Highway 627:

- Ap1—0 to 4 inches; reddish brown (5YR 4/4) silt loam; weak fine granular structure; very friable; many fine roots; slightly acid; clear smooth boundary.

Ap2—4 to 10 inches; reddish brown (5YR 4/4) silt loam; moderate fine granular structure; friable, slightly sticky and slightly plastic; common fine and medium roots; 5 percent angular rock fragments as much as 1 inch in diameter; slightly acid; abrupt smooth boundary.

A3—10 to 18 inches; reddish brown (5YR 4/3) silt loam; moderate fine granular structure; friable, slightly sticky and slightly plastic; few fine and common medium roots; 2 percent quartz fragments as much as 1 inch in diameter; medium acid; abrupt smooth boundary.

B21t—18 to 26 inches; yellowish red (5YR 4/6) clay loam; moderate fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common medium roots; common thin clay films on faces of peds; 2 percent quartz fragments as much as 1 inch in diameter; medium acid; abrupt smooth boundary.

B22t—26 to 40 inches; red (2.5YR 4/6) silty clay loam; strong fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; few thin clay films on faces of peds; medium acid; clear smooth boundary.

IIB23t—40 to 59 inches; yellowish red (5YR 5/6) shaly silty clay; few fine distinct yellowish brown (10YR 5/8) mottles; weak coarse angular blocky structure; firm, sticky and plastic; few thin clay films on faces of peds; 15 percent weathered shale fragments less than 1 inch in length; medium acid; abrupt smooth boundary.

IIB3t—59 to 64 inches; red (2.5YR 4/6), yellowish brown (10YR 5/8), and light olive gray (5Y 6/2) shaly silty clay; weak fine subangular blocky structure; firm, sticky and plastic; few thin clay films on faces of peds; 15 percent weathered shale fragments less than 1 inch in length; medium acid.

The solum is 30 to 60 inches thick. Depth to bedrock is more than 60 inches. The soil is very strongly acid to medium acid, unless limed. Coarse fragments range from 0 to 15 percent throughout the upper part of the solum and from 15 to 60 percent in the lower part of the solum and in the substratum.

The A horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 3 through 6. It is silt loam or loam.

The B horizon has hue of 5YR or 2.5YR, value of 4 or 5, and chroma of 3 through 6. The Bt horizon is silt loam, silty clay loam, or clay loam. The IIBt horizon is clay or silty clay or the shaly or very shaly analogues of these textures.

The C horizon, if present, is weathered shale, sandstone, or conglomerate. It is multicolored in shades of red, brown, yellow, pink, and gray. The C horizon is silt loam or loam or the shaly or very shaly analogues of these textures.

Manor Series

Soils of the Manor series are deep and well drained to somewhat excessively drained. They formed in the weathered products of quartz mica schist. These soils are on uplands in the Piedmont. Slope ranges from 15 to 45 percent.

Manor soils commonly are near Elioak, Glenelg, and Hazel soils. Manor soils have less clay in the subsoil than Elioak and Glenelg soils. They are deeper to bedrock than Hazel soils.

Typical pedon of Manor loam, 15 to 25 percent slopes; in hardwood forest, about 3 miles southeast of Charlottesville, 3/4 mile south of the junction of State Highways 631 and 731, and 275 yards west of 631:

O1—2 inches to 0; partially decayed leaves and twigs.

A1—0 to 2 inches; dark grayish brown (10YR 4/2) loam; weak fine and very fine granular structure; very friable; many fine roots; few fine flakes of mica; strongly acid; clear smooth boundary.

A2—2 to 8 inches; brown (7.5YR 4/4) loam; moderate fine granular structure; very friable, slightly sticky and nonplastic; many fine roots; many fine flakes of mica; strongly acid; clear smooth boundary.

B—8 to 18 inches; yellowish red (5YR 5/6) loam; weak fine subangular blocky structure; friable, slightly sticky and nonplastic; common fine roots; many fine flakes of mica; 5 percent weathered schist fragments as much as 3 inches in length; strongly acid; gradual smooth boundary.

C1—18 to 40 inches; strong brown (7.5YR 5/8) loam; streaked with pale brown (10YR 6/3) and reddish yellow (5YR 6/6); massive; friable; common fine roots; many fine flakes of mica; 10 percent weathered schist fragments as much as 3 inches in length; strongly acid; gradual smooth boundary.

C2—40 to 62 inches; multicolored yellowish brown (10YR 5/6), yellow (10YR 7/6), and strong brown (7.5YR 5/8) loam; massive; friable; many fine flakes of mica; 12 percent weathered schist fragments as much as 3 inches in length; very strongly acid.

The solum ranges from 15 to 24 inches in thickness. The depth to bedrock is more than 5 feet. Coarse fragments of schist or quartzite range from 0 to 15 percent throughout. The soil is strongly acid or very strongly acid throughout, unless limed.

The A horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 6.

The B horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 through 8.

The C horizon has hue of 7.5YR or 10YR, value of 4 through 8, and chroma of 3 through 8. It is sandy loam or loam.

Manteo Series

Soils of the Manteo series are shallow and somewhat excessively drained. They formed in the weathered products of sericitic schist. These soils are on uplands in the Piedmont. Slope ranges from 2 to 45 percent.

Manteo soils commonly are near Lignum, Nason, and Tatum soils. Manteo soils have less clay throughout and are shallower to bedrock than these soils.

Typical pedon of Manteo channery silt loam, 7 to 15 percent slopes; in hardwood forest, about 6 miles southeast of Charlottesville, 1 mile north of intersection of State Highways 53 and 729, and 100 yards east of 729.

- O2—2 inches to 0; partially decomposed leaves, twigs, and other organic material.
- A1—0 to 2 inches; very dark grayish brown (10YR 3/2) channery silt loam; weak fine granular structure; very friable, slightly sticky and nonplastic; many fine roots; 20 percent angular schist fragments as much as 2 inches in length; very strongly acid; clear smooth boundary.
- A2—2 to 6 inches; brown (10YR 5/3) channery silt loam; weak fine granular structure; very friable, slightly sticky and nonplastic; many roots; 30 percent angular schist fragments as much as 2 inches in length; very strongly acid; clear smooth boundary.
- B—6 to 14 inches; yellowish brown (10YR 5/4) very channery silt loam; weak fine subangular blocky structure; friable, slightly sticky and nonplastic; 50 percent angular schist fragments as much as 2 inches in length; very strongly acid; gradual wavy boundary.
- C—14 to 18 inches; brownish yellow (10YR 6/6) extremely channery loam; massive; friable; 75 percent schist fragments as much as 6 inches in length; extremely acid; clear irregular boundary.
- R—18 inches; fragmented hard schist rock.

The solum is 10 to 20 inches thick. The depth to hard bedrock ranges from 15 to 20 inches. Angular quartz pebbles and fragments of schist range from 15 to 80 percent in the A and B horizons and from 35 to 95 percent in the C horizon. The soil is very strongly acid or extremely acid, unless limed.

The A1 horizon has hue of 10YR or 2.5Y, value of 3 or 4, and chroma of 2 or 3. The A2 horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 2 through 4.

The Ap horizon has hue of 10YR, value of 5 or 6, and chroma of 2 through 4. It is channery or very channery silt loam.

The B horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 4 through 8. It is channery, very channery, or extremely channery analogues of silt loam or clay loam.

The C horizon is mostly schist fragments. It is very channery or extremely channery analogues of silt loam or loam.

Masada Series

Soils of the Masada series are deep and well drained. They formed in old alluvium that is at a higher elevation and commonly some distance from the present flood plains. They are on uplands in the Piedmont. Slopes are 2 to 15 percent.

Masada soils commonly are near McQueen, Nason, and Turbeville soils. They are less than 30 percent silt, and McQueen soils are more than 30 percent silt. Masada soils have a thicker solum than Nason soils. They are not so red in the subsoil as Turbeville soils.

Typical pedon of Masada loam, 2 to 7 percent slopes; in a field, about 19 miles south-southwest of Charlottesville, 1/4 mile west of the railroad crossing at Warren and 40 yards north of a railroad:

- Ap—0 to 7 inches; dark brown (7.5YR 4/4) loam; weak fine granular structure; very friable; many fine roots; slightly acid; clear wavy boundary.
- B1t—7 to 14 inches; reddish brown (5YR 4/4) clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; many fine roots; few thin clay films on faces of peds; strongly acid; clear wavy boundary.
- B21t—14 to 19 inches; yellowish red (5YR 4/6) clay; moderate fine subangular blocky structure; firm, sticky and plastic; common fine roots; common thin clay films on faces of peds; few black manganese stains; strongly acid; clear wavy boundary.
- B22t—19 to 33 inches; yellowish red (5YR 4/8) clay; moderate fine subangular blocky structure; firm, sticky and plastic; common fine roots; common thin clay films on faces of peds; few black manganese stains; strongly acid; clear wavy boundary.
- B23t—33 to 62 inches; yellowish red (5YR 4/8) clay loam; weak very fine subangular blocky structure; slightly sticky and slightly plastic; few fine roots; 2 percent quartz pebbles 1/4 to 1/2 inch in diameter; strongly acid.

The solum is more than 40 inches thick. The depth to bedrock is more than 6 feet. The soil is strongly acid or very strongly acid, unless limed. Quartz pebbles 1/4 inch to 2 inches in diameter make up 0 to 30 percent of the solum.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 through 6.

The B1 horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 4 through 8. The B2t horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 6 or 8. It is clay loam or clay.

The B23t horizon has high chroma mottles in some pedons.

The C horizon commonly is multicolored and ranges from sandy loam to clay loam. It is gravelly or very gravelly in some pedons.

Mayodan Series

Soils of the Mayodan series are deep and well drained. They formed in the weathered products of Triassic sandstone and red shale. These soils are on uplands in the Piedmont. Slope commonly is 2 to 15 percent.

Mayodan soils commonly are near Creedmoor, Manassas, Penn, and Totier soils. They are better drained than Creedmoor and Manassas soils. Mayodan soils have more clay in the subsoil than Manassas and Penn soils and have a thicker solum than Penn soils. They are not so red in the subsoil as Totier soils.

Typical pedon of Mayodan loam, 2 to 7 percent slopes; in mixed hardwoods, about 13 miles south of Charlottesville, 1.5 miles north of the junction of State Highways 795 and 712, and 350 yards west of 795:

- O1—2 inches to 1 inch; undecomposed forest litter of sticks, twigs, and leaves.
- O2—1 inch to 0; black (10YR 2/1) partly decomposed hardwood leaves and twigs; abrupt smooth boundary.
- A1—0 to 3 inches; brown (10YR 4/3) loam; weak very fine granular structure; very friable; many fine and medium roots; common fine and very fine discontinuous pores; very strongly acid; abrupt smooth boundary.
- A2—3 to 10 inches; yellowish brown (10YR 5/4) loam; weak fine granular structure; very friable; many fine and medium roots; common fine and very fine discontinuous pores; strongly acid; clear smooth boundary.
- B1—10 to 17 inches; yellowish brown (10YR 5/6) silt loam; weak fine and medium subangular blocky structure; friable, slightly sticky and nonplastic; common fine and medium roots; strongly acid; gradual smooth boundary.
- B21t—17 to 28 inches; strong brown (7.5YR 5/8) clay loam; moderate fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; thin continuous clay films on faces of pedis; strongly acid; clear wavy boundary.
- B22t—28 to 44 inches; strong brown (7.5YR 5/8) silty clay; common medium distinct yellowish brown (10YR 5/4) and common medium faint red (2.5YR 5/8) mottles; moderate medium prismatic structure parting to moderate fine and medium subangular blocky; friable, slightly sticky and slightly plastic; few fine roots; thin continuous clay films on faces of pedis; very strongly acid; clear wavy boundary.

B3t—44 to 53 inches; strong brown (7.5YR 5/8) shaly silty clay loam; common medium faint brownish yellow (10YR 6/8) and yellowish red (5YR 5/8) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; thin discontinuous clay films on faces of pedis; 30 percent shale fragments as much as 1 inch in length; strongly acid; clear wavy boundary.

Cr—53 to 60 inches; red (2.5YR 4/6) weathered shale, difficult to dig with spade; reddish yellow (5YR 6/6) silty clay loam coatings on shale fractures; gradual wavy boundary.

R—60 inches; hard shale bedrock.

The solum is 40 to 60 inches thick. The depth to bedrock is 60 inches or more. The soil is strongly acid or very strongly acid, unless limed. Coarse fragments range from 0 to 10 percent in the A horizon and from 0 to 30 percent in the subsoil.

The A horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 3 through 4.

The B1 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 4 through 8. It is loam, silt loam, or clay loam.

The B2 horizon has hue of 2.5YR through 1.5YR, value of 4 or 5, and chroma of 6 through 8. It is clay loam, clay, or silty clay.

The B3 horizon has colors similar to those of the B2 horizon. It is clay loam, silty clay loam, or the shaly analogues of these textures.

The C horizon is weathered shale with some sandstone.

McQueen Series

Soils of the McQueen series are deep and well drained. They formed in alluvium. These soils are along rivers and large streams in the Piedmont. Slope is 2 to 7 percent.

McQueen soils commonly are near Dogue, Masada, and Wahee soils. They are more than 30 percent silt, and Masada soils are less than 30 percent silt. McQueen soils are better drained than Dogue and Wahee soils.

Typical pedon of McQueen loam, 2 to 7 percent slopes; in pasture about 8 miles east-southeast of Charlottesville, 1 mile west of the end of State Highway 623 on the north side of the Rivanna River:

- Ap—0 to 7 inches; dark brown (7.5YR 4/4) loam; strong medium and coarse granular structure; friable; many fine roots; many fine and medium vesicular pores; neutral; clear smooth boundary.
- B1—7 to 10 inches; reddish brown (5YR 4/4) clay loam; weak medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine and medium roots; slightly acid; gradual smooth boundary.

- B21t—10 to 30 inches; yellowish red (5YR 4/6) clay; moderate medium subangular blocky structure; firm, sticky and plastic; few fine roots; few thin clay films on faces of peds; strongly acid; gradual smooth boundary.
- B22t—30 to 42 inches; yellowish red (5YR 4/6) clay; few fine distinct strong brown (7.5YR 5/8) mottles; moderate fine and medium subangular blocky structure; friable, sticky and plastic; common thin clay films on faces of peds; few fine flakes of mica; strongly acid; clear smooth boundary.
- B3t—42 to 52 inches; yellowish red (5YR 5/6) clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; friable, sticky and slightly plastic; few thin clay films on faces of peds; strongly acid; abrupt wavy boundary.
- C—52 to 64 inches; strong brown (7.5YR 5/6) and light yellowish brown (10YR 6/4) sandy clay loam; massive; friable, slightly sticky and slightly plastic; 12 percent quartz pebbles 1/4 to 1/2 inch in diameter; strongly acid.

The solum is more than 50 inches thick. The depth to bedrock is more than 5 feet. The soil is strongly acid throughout, unless limed. Quartz pebbles 1/4 inch to 2 inches in diameter make up 0 to 5 percent of the solum.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 through 4.

The B1 horizon has hue of 5YR through 10YR, value of 4 or 5, and chroma of 4 or 6. The B2 horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 6 or 8. The B22t horizon has high chroma mottles in some pedons. The B2 horizon is clay loam or clay.

The C horizon commonly is multicolored in shades of yellow and brown and ranges from fine sandy loam to sandy clay loam. It has gravelly or very gravelly strata in some pedons.

Meadowville Series

Soils of the Meadowville series are deep and moderately well drained to well drained. They formed in local alluvium and colluvium washed from surrounding upland soils. These soils are on uplands in the Piedmont. Slope is 2 to 15 percent.

Meadowville soils commonly are near Ashe, Belvoir, Chester, Glenelg, Hazel, and Worsham soils. They have more clay in the subsoil and are deeper to bedrock than Ashe and Hazel soils. Meadowville soils are better drained than Belvoir and Worsham soils. They are deeper than Chester and Glenelg soils and commonly have lithologic discontinuity which Chester and Glenelg soils do not have.

Typical pedon of Meadowville loam, 2 to 7 percent slopes; in pasture about 10 miles southwest of

Charlottesville, 1 mile northwest of the junction of U.S. Highway 29 and State Highway 692, 1/2 mile northeast of 692:

- A1—0 to 3 inches; dark brown (7.5YR 3/2) loam; weak fine granular structure; very friable; many fine and medium roots; many fine flakes of mica; slightly acid; abrupt smooth boundary.
- A2—3 to 14 inches; dark brown (7.5YR 4/4) loam; moderate fine granular structure; very friable; many fine and medium roots; many fine flakes of mica; slightly acid; gradual smooth boundary.
- B1—14 to 22 inches; brown (7.5YR 4/4) loam; weak fine subangular blocky structure; friable, slightly sticky and nonplastic; common fine and medium roots; few fine flakes of mica; medium acid; gradual smooth boundary.
- B2t—22 to 40 inches; brown (7.5YR 4/4) clay loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; few thin patchy clay films on faces of peds; many fine flakes of mica; strongly acid; gradual smooth boundary.
- B3—40 to 46 inches; brown (7.5YR 4/4) loam; few fine distinct yellowish brown (10YR 5/6) mottles; moderate coarse angular blocky structure; friable, nonsticky and nonplastic; many fine flakes of mica; medium acid; clear smooth boundary.
- IIC1—46 to 60 inches; brown (10YR 4/3) loam; few medium distinct strong brown (7.5YR 5/6) mottles; massive; friable, nonsticky and nonplastic; many fine flakes of mica; medium acid; gradual smooth boundary.
- IIC2—60 to 73 inches; brown (10YR 4/3) loam; massive; friable; 2 percent quartz pebbles as much as 4 inches in diameter; common fine flakes of mica; few pockets of medium sand; medium acid.

The solum is 40 to 60 inches thick. The depth to bedrock is more than 5 feet. The soil ranges from very strongly acid to medium acid, unless limed. It is 0 to 10 percent quartz pebbles throughout. Fine flakes of mica are few to many in the subsoil.

The A horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 2 through 6.

The Bt horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 4 through 8. It is loam, silt loam, silty clay loam, or clay loam. The B3 horizon in some pedons has low chroma mottles. Stone lines of quartz pebbles are at a depth of 36 to 45 inches in some pedons.

The C horizon is brownish and has mottles of yellow, gray, and white. It commonly is fine sandy loam, loam, or silt loam.

Mount Lucas Series

Soils of the Mount Lucas series are deep and moderately well drained to somewhat poorly drained. They formed in alluvial and residual materials weathered from greenstone. These soils are on uplands in the Piedmont. Slope is 2 to 7 percent.

Mount Lucas soils commonly are near Davidson, Myersville, Rabun, and Starr soils. They are more poorly drained than these soils and have less clay in the solum than Davidson and Rabun soils.

Typical pedon of Mount Lucas silt loam, 2 to 7 percent slopes; in pasture, about 15 miles northeast of Charlottesville, 1/2 mile northeast of the junction of State Highway 231 with a gas pipeline and a power transmission line, under the power transmission line:

Ap—0 to 10 inches; dark yellowish brown (10YR 4/4) silt loam; moderate medium granular structure; very friable; many fine and medium roots; common fine vesicular pores; medium acid; clear smooth boundary.

B1t—10 to 14 inches; brownish yellow (10YR 6/6) clay loam; few fine faint yellowish brown (10YR 5/8) mottles; weak fine subangular blocky structure; very friable, sticky and slightly plastic; many fine and medium roots; many fine vesicular pores; few thin clay films on faces of peds; few black mineral concretions; medium acid; gradual smooth boundary.

B21t—14 to 24 inches; brownish yellow (10YR 6/6) silty clay loam; few coarse distinct strong brown (7.5YR 5/8), gray (10YR 6/1), and red (2.5YR 4/8) mottles; strong coarse subangular blocky structure; firm, slightly sticky and slightly plastic; common fine and medium roots; many fine vesicular pores; common thin clay films on faces of peds; slightly acid; clear smooth boundary.

B22t—24 to 30 inches; yellowish brown (10YR 5/6) silty clay loam; common coarse distinct light brownish gray (10YR 6/2) mottles; strong medium prismatic structure parting to moderate medium subangular blocky; firm, sticky and plastic; few medium roots; many fine vesicular pores; common thin clay films on faces of peds; slightly acid; gradual smooth boundary.

B23t—30 to 39 inches; reddish yellow (7.5YR 6/8) clay; many coarse prominent light gray (10YR 7/1) mottles; strong coarse angular blocky structure; firm, sticky and plastic; common medium roots; many fine vesicular pores; common thin clay films on faces of peds; medium acid; gradual smooth boundary.

B3tg—39 to 48 inches; light gray (10YR 6/1) clay; common medium distinct yellowish brown (10YR 5/8) mottles; strong coarse angular blocky structure; firm, slightly sticky and plastic; many fine vesicular pores; common thin clay films on face of peds; medium acid; clear smooth boundary.

C1—48 to 58 inches; strong brown (7.5YR 5/8) silty clay loam; few medium prominent black (N 2/0) and light gray (10YR 6/1) mottles; massive; firm, slightly sticky and plastic; 2 percent pebbles of greenstone; slightly acid; gradual smooth boundary.

C2—58 to 64 inches; strong brown (7.5YR 5/8) silty clay loam; common medium prominent black (10YR 2/1) and common medium faint yellowish brown (10YR 5/8) mottles; massive; friable, slightly sticky and slightly plastic; 5 percent pebbles of greenstone; neutral.

The solum is 25 to 50 inches thick. The depth to bedrock is more than 4 feet. The soil is medium acid to neutral. Angular and semirounded greenstone and quartz pebbles 1/4 inch to 3 inches in diameter make up 0 to 15 percent of the A and B horizons and 0 to 35 percent of the C horizon.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 through 4.

The upper part of the B horizon has hue of 5YR, 7.5YR, or 10YR, value of 5 or 6, and chroma of 3 through 6. It is silty clay loam or clay loam. The lower part of the B horizon has hue of 7.5YR or 10YR, value of 5 through 7, and chroma of 1 or 2. It is silty clay loam, silty clay, or clay.

The C horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 through 6. It is silty clay loam, silt loam, or gravelly silt loam.

The Mount Lucas soils in this survey area are taxadjuncts to the series because of the higher clay content in the lower part of the subsoil and in the substratum. This difference does not significantly affect the use and management of these soils.

Myersville Series

Soils of the Myersville series are deep and well drained. They formed in material weathered from greenstone residuum. These soils are on uplands in the Blue Ridge and Piedmont. Slope ranges from 2 to 60 percent.

Myersville soils commonly are near Catoctin, Fauquier, and Rabun soils. Myersville soils are deeper to bedrock than Catoctin soils. They have less clay in the solum than Fauquier and Rabun soils.

Typical pedon of Myersville silt loam, 7 to 15 percent slopes; in hardwood forest, about 11 miles northeast of Charlottesville, about 1 mile northeast of the tower on Southwest Mountain, and 100 yards south of a gasoline:

O1—1 inch to 0; undecomposed forest litter of leaves and twigs.

A1—0 to 2 inches; dark brown (7.5YR 3/2) silt loam; weak fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.

A2—2 to 7 inches; brown (7.5YR 4/4) silt loam; moderate fine and medium granular structure; very friable; many fine roots; strongly acid; clear smooth boundary.

B1—7 to 11 inches; reddish brown (5YR 4/4) silty clay loam; moderate fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; 2 percent greenstone fragments less than 1 inch in length; medium acid; gradual smooth boundary.

B2t—11 to 28 inches; yellowish red (5YR 4/6) silty clay loam; strong fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine and medium roots; common thin continuous clay films on faces of peds; 5 percent greenstone fragments as much as 2 inches in length; medium acid; gradual smooth boundary.

B3t—28 to 36 inches; yellowish red (5YR 4/8) silt loam; few fine distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; friable; few thin patchy clay films on face of peds; 10 percent greenstone fragments as much as 3 inches in length; strongly acid; gradual smooth boundary.

C—36 to 44 inches; yellowish red (5YR 5/6) silt loam; common medium faint strong brown (7.5YR 5/8) mottles; massive, very friable; 15 percent greenstone fragments as much as 3 inches in length; strongly acid; gradual smooth boundary.

Cr1—44 to 52 inches; multicolored reddish yellow (7.5YR 6/8) and black (10YR 2/1) weathered greenstone that crushes to silt loam; massive; strongly acid; gradual smooth boundary.

Cr2—52 to 65 inches; multicolored yellowish brown (10YR 5/8) and very dark grayish brown (10YR 3/2) weathered greenstone that crushes to silt loam; massive; strongly acid.

The solum is 20 to 40 inches thick. The depth to bedrock is more than 5 feet. Greenstone fragments make up 0 to 20 percent of the solum and 0 to 75 percent of the C horizon. The soil is medium acid to very strongly acid throughout, unless limed.

The A horizon has hue of 5YR through 10YR, value of 2 through 4, and chroma of 2 through 4.

The B horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 through 8. It is silt loam, clay loam, silty clay loam, or the gravelly analogues of these textures.

The C horizon is multicolored in shades of brown, yellow, red, black, and gray.

Nason Series

Soils of the Nason series are deep and well drained. They formed in the weathered products of sericitic schist. These soils are on uplands in the Piedmont. Slope commonly is 2 to 25 percent.

Nason soils commonly are near Lignum, Manteo, and Tatum soils. They have a thicker solum and have more clay in the subsoil than Manteo soils. Nason soils are better drained than Lignum soils. They are not so red in the subsoil as Tatum soils.

Typical pedon of Nason silt loam, 2 to 7 percent slopes; in mixed hardwood and pine forest, 13 miles northeast of Charlottesville, about 0.5 mile northwest of Lindsay, 170 yards east of Route 615:

O1—1 inch to 0; partly decomposed pine needles and hardwood leaves and twigs.

A1—0 to 2 inches; grayish brown (10YR 5/2) silt loam; weak fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.

A2—2 to 8 inches; yellowish brown (10YR 5/4) silt loam; weak fine granular structure; very friable; many fine and medium roots; 15 percent thin weathered schist fragments and angular quartz pebbles 1/4 inch to 2 inches in diameter; very strongly acid; clear smooth boundary.

B1—8 to 14 inches; yellowish brown (10YR 5/8) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; 10 percent angular quartz and weathered schist pebbles 1/4 inch to 2 inches in diameter; extremely acid; clear smooth boundary.

B21t—14 to 19 inches; strong brown (7.5YR 5/6) silty clay; moderate medium subangular blocky structure; firm, slightly sticky and slightly plastic; common fine roots; few thin clay films on faces of peds; 2 percent thin weathered schist fragments 1 inch to 3 inches in diameter; very strongly acid; gradual smooth boundary.

B22t—19 to 29 inches; yellowish red (5YR 4/6) silty clay; moderate medium subangular blocky structure; firm, slightly sticky and plastic; common medium clay films on faces of peds; 10 percent weathered thin schist fragments 1 inch to 3 inches in diameter; very strongly acid; gradual smooth boundary.

B3t—29 to 39 inches; yellowish red (5YR 4/6) channery silty clay loam; common medium faint strong brown (7.5YR 5/6) mottles; weak fine subangular blocky structure; friable; few thin clay films on faces of peds; 25 percent fine and medium partially weathered schist fragments; very strongly acid; irregular wavy boundary.

C—39 to 50 inches; multicolored yellowish brown (10YR 5/6), strong brown (7.5YR 5/6), and red (2.5YR 5/6) channery silt loam; massive; friable; 30 percent schist fragments; extremely acid; clear irregular boundary.

R—50 inches;rippable sericitic schist bedrock.

The solum is 25 to 50 inches thick. The depth to bedrock ranges from 40 to 60 inches. The soil is strongly acid to extremely acid, unless limed. Angular quartz

pebbles 1/4 inch to 2 inches in diameter make up 0 to 15 percent of the surface layer and 0 to 30 percent of the subsoil and substratum. Partly weathered schist fragments, 1 inch to 3 inches across, make up 0 to 10 percent of the lower part of the subsoil and 2 to 30 percent of the substratum.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 2 through 6. It is silt loam or loam or is silty clay loam in severely eroded areas.

The B horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 4 through 8. The B2 horizon is silty clay loam, clay, or silty clay. The B3 horizon is silty clay loam, clay loam, or the channery or gravelly analogues of these textures.

The C horizon commonly is multicolored in shades of red, brown, yellow, and white. It is silt loam or channery or very channery silt loam.

A Cr horizon is present below a depth of 50 inches in some pedons. It is partly weathered, commonly rippable sericitic schist.

Orange Series

Soils of the Orange series are deep and somewhat poorly drained to moderately well drained. They formed in the weathered products of hornblende gneiss and other basic rock. These soils are on uplands in the Piedmont. Slope is 2 to 7 percent.

Orange soils commonly are near Cullen, Fluvanna, Myersville, and Nason soils. They are more poorly drained than these soils and have more clay than Myersville soils.

Typical pedon of Orange silt loam, 2 to 7 percent slopes; in a field, 16 miles south of Charlottesville, about 1 mile north of the junction of Routes 20 and 713, 50 yards west of 713:

Ap—0 to 9 inches; dark yellowish brown (10YR 4/4) silt loam; moderate fine granular structure; very friable; many fine roots; 2 percent fine angular quartz pebbles 1/4 to 1/2 inch in diameter; slightly acid; abrupt smooth boundary.

B21t—9 to 16 inches; yellowish brown (10YR 5/6) silty clay; few fine distinct brownish yellow (10YR 6/8) mottles; strong medium and fine subangular blocky structure; very firm, very sticky and very plastic; common fine roots; many medium clay films and pressure faces on surfaces of peds; common fine brown concretions; slightly acid; clear smooth boundary.

B22t—16 to 23 inches; yellowish brown (10YR 5/6) clay; common fine faint strong brown (7.5YR 5/6) and few fine prominent light gray (2.5Y 7/2) mottles; moderate medium angular blocky structure; very firm, sticky and very plastic; few fine roots; many fine and medium black concretions; 2 percent weathered fragments of basic rock; neutral; gradual smooth boundary.

B23t—23 to 27 inches; yellowish brown (10YR 5/8) clay; many medium prominent light brownish gray (10YR 6/2) mottles; weak coarse prismatic structure parting to weak coarse angular blocky; firm, sticky and very plastic; few fine roots; common medium clay films and pressure faces on surfaces of peds; neutral; gradual smooth boundary.

B3—27 to 33 inches; yellowish brown (10YR 5/8) silty clay loam; many medium prominent light brownish gray (2.5Y 6/2) and very dark gray (10YR 3/1) mottles; weak medium angular blocky structure; firm, sticky and plastic; few fine roots; 15 percent strongly weathered hornblende gneiss and other basic rock fragments; neutral; gradual wavy boundary.

C—33 to 55 inches; multicolored dark yellowish brown (10YR 4/6), yellowish brown (10YR 5/6), and very dark gray (10YR 3/1) loam; massive; few seams filled with light gray (10YR 7/2) clay; few carbonates; neutral.

R—55 inches; bedrock.

The solum is 20 to 40 inches thick. The depth to bedrock is 40 to 60 inches. Angular quartz pebbles, 1/4 inch to 3 inches in diameter, make up 0 to 10 percent of the solum. The solum is strongly acid or medium acid in the upper part, unless limed. The lower part of the B horizon and the C horizon range from medium acid to moderately alkaline. Dark colored concretions and stains are common throughout the soil.

The A horizon has hue of 10YR through 2.5Y, value of 4 through 6, and chroma of 2 through 6.

The Bt horizon has hue of 7.5YR through 2.5Y, value of 4 through 6, and chroma of 4 through 8. It is clay, clay loam, silty clay loam, or silty clay.

The C horizon commonly is multicolored in shades of green, yellow, brown, gray, and white. It is loam, sandy loam, silt loam, or sandy clay loam. In some pedons, a Cr horizon is present. It has colors similar to those of the C horizon. It is partly weathered basic igneous and metamorphic rock that crushes to loam or silt loam.

Pacolet Series

Soils of the Pacolet series are deep and well drained. They formed in the weathered products of granite and granite gneiss. These soils are on uplands in the Piedmont. Slope commonly is 2 to 15 percent.

Pacolet soils commonly are near Cullen, Elioak, Glenelg, Louisburg, and Wedowee soils. They have a thinner solum than Cullen and Elioak soils and have a redder subsoil than Glenelg and Wedowee soils. Pacolet soils have more clay in the subsoil than Glenelg and Louisburg soils.

Typical pedon of Pacolet sandy loam, 2 to 7 percent slopes; in pasture, about 5 miles north of Charlottesville, 1/2 mile east of the junction of State Highways 643 and 743, 1/4 mile west of U.S. Highway 29:

- Ap—0 to 6 inches; brown (10YR 5/3) sandy loam; weak very fine granular structure; friable; many fine and medium roots; many fine and medium pores; strongly acid; clear smooth boundary.
- B1—6 to 9 inches; yellowish red (5YR 5/6) sandy clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; many fine and medium roots; many fine pores; medium acid; gradual smooth boundary.
- B21t—9 to 14 inches; red (2.5YR 4/6) clay loam; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine and common medium roots; few thin clay films on faces of pedis; few fine flakes of mica; 2 percent angular quartz pebbles as much as 1 inch in diameter; medium acid; gradual smooth boundary.
- B22t—14 to 25 inches; red (2.5YR 5/8) clay; strong fine and medium subangular blocky structure; firm, slightly sticky and slightly plastic; few medium and large roots; few thin clay films on faces of pedis; few fine flakes of mica; strongly acid; gradual smooth boundary.
- B3—25 to 32 inches; red (2.5YR 5/6) clay loam; few fine distinct reddish yellow (5YR 6/8) and strong brown (7.5YR 5/8) mottles; moderate fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine flakes of mica; 2 percent strongly weathered granite fragments as much as 2 inches in diameter; strongly acid; gradual wavy boundary.
- C—32 to 60 inches; multicolored red (2.5YR 5/60, yellowish red (5YR 5/6), and strong brown (7.5YR 5/6) sandy clay loam; massive; friable; common fine flakes of mica; 80 percent granite saprolite that crushes easily; 2 percent quartz pebbles as much as 1 inch in diameter; strongly acid.

The solum is 20 to 40 inches thick. The depth to weathered bedrock is 30 to more than 60 inches. Depth to hard bedrock is more than 5 feet. The soil is medium acid to very strongly acid, unless limed. Angular quartz pebbles and weathered rock fragments make up 0 to 15 percent of the solum. Most pedons have few to common mica flakes in one or more horizons.

The A horizon has hue of 10YR through 5YR, value of 3 through 5, and chroma of 1 through 4. It is sandy loam, fine sandy loam, or loam and the gravelly analogues of these textures.

The B1 horizon has hue of 7.5YR through 2.5YR, value of 4 or 5, and chroma of 3 through 8. It is clay loam, sandy clay loam, or loam.

The B2t horizon has hue of 2.5YR or 10R, value of 4 or 5, and chroma of 6 or 8. It is clay, sandy clay, or clay loam.

The B3 horizon has hue of 5YR through 10R, value of 4 or 5, and chroma of 6 or 8. It commonly has mottles in shades of yellow or brown. In some pedons, the B3

horizon is mottled in shades of red, yellow, or brown. It is clay loam or sandy clay loam.

The C horizon is multicolored in shades of red, yellow, brown, and white. It is sandy loam, loam, sandy clay loam, or clay loam. A Cr horizon is present in some pedons.

Parker Series

Soils of the Parker series are deep and excessively drained. They formed in the weathered products of granite and granite gneiss. They are on uplands in the Blue Ridge. Slope ranges from about 7 to 60 percent.

Parker soils commonly are near Ashe, Chester, and Porters soils. They have more coarse fragments in the subsoil than these soils. Parker soils do not have the thick dark surface of Porters soils.

Typical pedon of Parker very stony loam in an area of Parker extremely stony loam, 25 to 60 percent slopes; in hardwood forest, about 12 miles northwest of Charlottesville on the northeast side of Fox Mountain, 1 3/4 miles north of the junction of State Highway 668 and a fire trail, and 35 yards southwest of the fire trail:

- O2—2 inches to 0; dark brown (7.5YR 3/2) highly decomposed hardwood leaf litter; less than 1/3 fiber, rubbed; many fine roots; 20 percent stones and 10 percent angular cobbles of granite gneiss on the surface; abrupt smooth boundary.
- A1—0 to 2 inches; dark brown (10YR 3/3) very stony loam; weak fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; 15 percent stones, 10 percent angular cobbles, and 10 percent angular pebbles of granite gneiss; extremely acid; abrupt smooth boundary.
- A2—2 to 14 inches; brownish yellow (10YR 6/6) very cobbly loam; weak fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; 25 percent angular cobbles and 20 percent angular pebbles of granite gneiss; very strongly acid; clear smooth boundary.
- B21—14 to 24 inches; yellowish brown (10YR 5/6) extremely cobbly loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; 10 percent stones, 40 percent angular cobbles, and 20 percent angular pebbles of granite gneiss; strongly acid; gradual wavy boundary.
- B22—24 to 32 inches; dark yellowish brown (10YR 4/6) extremely cobbly loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common medium roots; 15 percent stones, 40 percent angular cobbles, and 10 percent angular pebbles of granite gneiss; strongly acid; gradual wavy boundary.
- B3—32 to 38 inches; dark yellowish brown (10YR 4/6) extremely cobbly loam; weak fine subangular blocky

structure; friable, slightly sticky and slightly plastic; common medium roots; 15 percent stones, 20 percent angular cobbles, and 20 percent angular pebbles of granite gneiss; medium acid; gradual wavy boundary.

C—38 to 67 inches; yellowish brown (10YR 5/6) very stony sandy loam; massive; friable, nonsticky and slightly plastic; common medium roots; many fine irregular pores; few brown (7.5YR 4/4) clay flows around rock fragments; 30 percent stones and 30 percent angular cobbles of granite gneiss; strongly acid; abrupt wavy boundary.

R—67 inches; hard granite gneiss.

The solum is 20 to 40 inches thick. The depth to bedrock is more than 4 feet. Angular rock fragments of granite or granite gneiss range from 35 to 70 percent in the solum and 60 to 80 percent in the C horizon. The solum is strongly acid to extremely acid, unless limed.

The A1 horizon has hue of 7.5YR or 10YR, value of 3 or 4, and chroma of 2 through 4. The A2 horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 5 or 6. The A horizon is very gravelly, very cobbly, or very stony loam.

The B horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 4 through 6. It is very or extremely gravelly, cobbly, or stony loam or sandy loam.

The C horizon has colors and textures similar to those of the B horizon.

Penn Series

Soils of the Penn series are moderately deep and well drained. They formed in materials weathered from Triassic red shale. These soils are on uplands in the Piedmont. Slope ranges from 2 to 25 percent.

Penn soils commonly are near Klinsville, Manassas, Mayodan, Rapidan, and Totier soils. They have a thicker solum than Klinsville soils. Penn soils are shallower to bedrock than Manassas soils and have less clay in the subsoil than Mayodan, Rapidan, and Totier soils.

Typical pedon of Penn silt loam, 2 to 7 percent slopes; in pasture, about 15 miles south of Charlottesville, 0.5 mile south of the junction of State Highways 6 and 626 and about 400 yards east of 626:

Ap—0 to 7 inches; reddish brown (2.5YR 4/4) silt loam; moderate fine and medium granular structure; friable, slightly sticky and slightly plastic; common fine roots; 5 percent shale fragments less than 1/2 inch in length; neutral; clear smooth boundary.

B21t—7 to 15 inches; red (2.5YR 4/6) silty clay loam; moderate fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine roots; few thin clay films on faces of pedis; 10 percent shale fragments less than 1 inch in length; slightly acid; gradual wavy boundary.

B22t—15 to 21 inches; red (2.5YR 4/6) shaly silty clay loam; moderate fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; common thin clay films on faces of pedis; 25 percent shale fragments less than 2 inches in length; medium acid; clear wavy boundary.

C—21 to 29 inches; red (2.5YR 4/6) extremely shaly silt loam; massive; friable, slightly sticky and slightly plastic; few fine roots; 70 percent oriented shale with soil in fractures; medium acid; clear smooth boundary.

R—29 inches; oriented red (2.5YR 4/6) shale bedrock; ripplable.

The solum is 17 to 34 inches thick. The depth to bedrock is 20 to 40 inches. The soil is slightly acid to strongly acid, unless limed. Coarse fragments make up 2 to 15 percent of the A horizon, 10 to 30 percent of the B horizon, and 30 to 70 percent of the C horizon. The coarse fragments consist of angular red shale and quartzite.

The A horizon has hue of 2.5YR through 7.5YR, value of 3 or 4, and chroma of 3 or 4.

The B2t horizon has hue of 10R through 5YR, value of 3 or 4, and chroma of 4 through 6. The B2t horizon is silty clay loam, silt loam, or the shaly analogues of these textures.

The B3 horizon, if present, has hue of 10R or 2.5YR, value of 3 or 4, and chroma of 6. It is shaly or very shaly silt loam or silty clay loam.

The C horizon, if present, has colors and textures similar to those of the B3 horizon.

Porters Series

Soils of the Porters series are deep and well drained. They formed in the weathered products of granite, granodiorite, and granite gneiss. These soils are on uplands in the Blue Ridge. Slope ranges from 7 to 45 percent.

Porters soils commonly are near Ashe, Chester, and Parker soils. They have more clay in the subsoil than Ashe and Parker soils and have a thick, dark surface layer that the Chester soils do not have.

Typical pedon of Porters cobbly loam in an area of Porters very stony loam, 7 to 15 percent slopes; in mixed hardwood forest, about 12 miles southwest of Charlottesville on top of Heards Mountain, 130 yards north of a fire tower:

O1—2 inches to 0; undecomposed forest litter of leaves, sticks, and twigs.

A1—0 to 8 inches; black (10YR 2/1) cobbly loam; moderate very fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; 30 percent angular cobbles of granodiorite; strongly acid; clear smooth boundary.

B1—8 to 12 inches; dark brown (7.5YR 4/4) loam; weak fine subangular blocky structure; very friable, nonsticky and nonplastic; many large and medium roots; 10 percent angular cobbles of granodiorite; strongly acid; gradual smooth boundary.

B2t—12 to 26 inches; brown (7.5YR 4/4) loam; weak fine and medium subangular blocky structure; friable, nonsticky and nonplastic; few thin clay films on faces of peds; 10 percent angular cobbles of granodiorite; very strongly acid; gradual smooth boundary.

B3—26 to 32 inches; dark yellowish brown (10YR 4/4) loam; weak very fine subangular blocky structure; friable, nonsticky and nonplastic; few fine mica flakes; 10 percent angular cobbles of granodiorite; very strongly acid; gradual wavy boundary.

C—32 to 59 inches; brownish yellow (10YR 6/6) sandy loam; massive; firm in place, nonsticky and nonplastic; 10 percent angular cobbles of granodiorite; very strongly acid; abrupt wavy boundary.

R—59 inches; hard granodiorite bedrock.

The solum is 20 to 40 inches thick. The depth to bedrock ranges from 40 to 60 inches. Angular rock fragments of granite, granodiorite, or granite gneiss range from 0 to 15 percent throughout the soil. The solum ranges from very strongly acid to medium acid, unless limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 through 3.

The B horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 through 8. It is loam to clay loam.

The C horizon is generally lighter in color than the B horizon. It is weathered granodiorite, granite, or granite gneiss and is sandy loam.

Rabun Series

Soils of the Rabun series are deep and well drained. They formed in the weathered products of greenstone. These soils are on uplands in the Piedmont. Slope ranges from 2 to 45 percent.

Rabun soils commonly are near Catoclin, Davidson, Dyke, and Myersville soils. They have more clay in the subsoil and a redder and thicker solum than Catoclin and Myersville soils. Rabun soils have a thinner solum than Davidson soils. They are kaolinitic, and Dyke soils have mixed mineralogy.

Typical pedon of Rabun clay loam, 7 to 15 percent slopes; in cropland, about 11 miles northeast of Charlottesville, 200 yards north of State Highway 640 and 100 yards west of road to the tower on Southwest Mountain:

Ap—0 to 6 inches; dark reddish brown (5YR 3/3) clay loam; moderate medium granular structure; friable;

many fine and medium roots; medium acid; gradual smooth boundary.

B21t—6 to 14 inches; dark red (2.5YR 3/6) clay; moderate fine subangular blocky structure; friable, sticky and slightly plastic; common fine and medium roots; common thin clay films on faces of peds; strongly acid; gradual smooth boundary.

B22t—14 to 36 inches; dark red (10R 3/6) clay; moderate medium subangular blocky structure; firm, sticky and plastic; few fine roots; common thin clay films on faces of peds; strongly acid; gradual smooth boundary.

B3t—36 to 48 inches; dark red (2.5YR 4/6) clay loam; few medium distinct yellowish red (5YR 4/8) mottles; weak fine and medium subangular blocky structure; friable, sticky and slightly plastic; few thin clay films on faces of peds; strongly acid; gradual irregular boundary.

C—48 to 63 inches; red (2.5YR 4/6) silty clay loam; common medium distinct strong brown (7.5YR 5/6) and yellowish red (5YR 4/8) mottles; massive; friable; 2 percent weathered greenstone fragments; strongly acid.

The solum is 30 to 60 inches thick. The depth to hard rock is more than 60 inches. The soil is slightly acid to strongly acid, unless limed. Angular quartz pebbles 1/4 inch to 2 inches in diameter and weathered rock fragments 1 inch to 4 inches in length make up 0 to 10 percent of the solum.

The A horizon has hue of 5YR through 10R, value of 3, and chroma of 2 through 6. It is commonly clay loam but ranges to clay in severely eroded areas.

The Bt horizon has hue of 2.5YR or 10R, value of 3, and chroma of 3 through 6. It is clay, clay loam, or silty clay.

The C horizon has hue of 7.5YR through 2.5YR, value of 4 or 5, and chroma of 6 or 8. It is silty clay loam or silt loam, or is highly weathered greenstone that crushes to these textures.

Rapidan Series

Soils of the Rapidan series are deep and well drained. They formed in the weathered products of Triassic conglomerate. These soils are on uplands in the Piedmont. Slope ranges from 2 to 25 percent.

Rapidan soils commonly are near Klinsville, Penn, and Totier soils. They have more clay in the subsoil and are deeper to bedrock than Klinsville and Penn soils. Rapidan soils have darker red colors throughout than Totier soils.

Typical pedon of Rapidan silt loam, 2 to 7 percent slopes; in cropland, about 18 miles south of Charlottesville, 670 yards east of the junction of State Highways 626 and 723, 100 yards west of woods:

- Ap—0 to 6 inches; dark reddish brown (5YR 3/4) silt loam; moderate medium granular structure; friable, slightly sticky and slightly plastic; many fine and medium roots; 10 percent angular quartz pebbles; neutral; abrupt smooth boundary.
- B21t—6 to 13 inches; dark reddish brown (2.5YR 3/4) clay; strong medium subangular blocky structure; firm, sticky and plastic; common fine and medium roots; common thin clay films on faces of ped; 5 percent angular quartz pebbles; neutral; gradual smooth boundary.
- B22t—13 to 25 inches; dark red (2.5YR 3/6) clay; strong medium subangular blocky structure; firm, sticky and slightly plastic; common medium and fine roots; common thin clay films on faces of ped; medium acid; gradual smooth boundary.
- B23t—25 to 38 inches; dark red (2.5YR 3/6) clay; moderate medium and fine subangular blocky structure; friable, slightly sticky and slightly plastic; few fine and medium roots; few thin clay films on faces of ped; 2 percent angular quartz pebbles; strongly acid; gradual smooth boundary.
- B24t—38 to 54 inches; dark red (2.5YR 3/6) clay; few medium distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few thin clay films on faces of ped; 15 percent weathered conglomerate fragments less than 1 inch in diameter; strongly acid; gradual smooth boundary.
- C—54 to 70 inches; reddish brown (2.5YR 4/4) silty clay loam; common medium prominent strong brown (7.5YR 5/8), common medium faint weak red (10R 4/4), and few medium distinct yellowish red (5YR 4/6) mottles; massive; friable, slightly sticky and nonplastic; 15 percent weathered conglomerate fragments less than 1 inch in diameter; medium acid.

The solum is 40 to 60 inches thick. The depth to hard rock is more than 5 feet. The soil is medium acid or strongly acid, unless limed. Angular quartz pebbles 1/4 inch to 2 inches in diameter and weathered rock fragments as much as 2 inches in length make up 0 to 10 percent of the A and B2t horizons. Coarse fragments make up 0 to 30 percent of the B3 horizon and 0 to 60 percent of the C horizon.

The A horizon has hue of 2.5YR or 5YR, value of 3, and chroma of 3 or 4. It is silt loam or silty clay loam.

The B2t horizon has hue of 10R or 2.5YR, value of 3, and chroma of 4 through 6. It is clay, silty clay, silty clay loam, or clay loam.

The B3t horizon, if present, has hue of 10R through 5YR, value of 3, and chroma of 4 through 6. It is silty clay loam, clay loam, or the gravelly analogues of these textures.

The C horizon has hue of 10R through 5YR, value of 3 through 5, and chroma of 4 through 8. It is clay loam,

silty clay loam, silt loam, or the gravelly or very gravelly analogues of these textures.

Riverview Series

Soils of the Riverview series are deep and well drained. They formed in loamy alluvial material washed from soils on uplands. These soils are on flood plains in the Piedmont and are subject to occasional flooding. Slope is 0 to 2 percent.

Riverview soils commonly are near Buncombe, Chewacla, Toccoa, and Wehadkee soils. They have more clay in the subsoil than Buncombe or Toccoa soils. Riverview soils are better drained than Chewacla and Wehadkee soils.

Typical pedon of Riverview loam; in cropland, about 3 miles northeast of Charlottesville, 2 miles east of the junction of U.S. Highway 29 and State Highway 631, 225 yards north of the convergence of the North and South Forks of the Rivanna River:

- Ap—0 to 12 inches; dark brown (7.5YR 4/4) loam; weak very fine granular structure; very friable; many fine roots; few worm channels; many fine flakes of mica; slightly acid; abrupt smooth boundary.
- B21—12 to 21 inches; strong brown (7.5YR 4/6) silt loam; weak fine subangular blocky structure; very friable; many fine roots; few worm channels; many fine flakes of mica; medium acid; gradual smooth boundary.
- B22—21 to 29 inches; brown (7.5YR 4/4) silt loam; weak fine subangular blocky structure; friable; many fine roots; common very fine flakes of mica; strongly acid; clear wavy boundary.
- B3—29 to 35 inches; brown (7.5YR 4/4) loam; weak fine subangular blocky structure; friable; many fine roots; few very fine flakes of mica; strongly acid; gradual smooth boundary.
- C1—35 to 43 inches; dark yellowish brown (10YR 4/4) silt loam; massive; very friable; common fine roots; common very fine flakes of mica; strongly acid; gradual smooth boundary.
- C2—43 to 60 inches; dark yellowish brown (10YR 4/4) silt loam; massive; very friable; many fine flakes of mica; very strongly acid.

The solum is 24 to 40 inches thick. The depth to bedrock is more than 5 feet. Flakes of mica range from few to common throughout. The soil is strongly acid or very strongly acid, unless limed.

The A horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 3 or 4.

The B horizon has hue of 7.5YR or 10YR, value of 3 through 5, and chroma of 4 through 8. In some pedons, it has low chroma mottles below a depth of 24 inches. The B horizon is loam, silt loam, or silty clay loam.

The C horizon has colors similar to those of the A and B horizons. In some pedons, it has high chroma mottles. The C horizon is loam, silt loam, or fine sandy loam.

Rowland Series

Soils of the Rowland series are deep and moderately well drained to somewhat poorly drained. They formed in alluvium washed from uplands underlain by Triassic red shale and conglomerate. These soils are along streams and rivers in the Piedmont and are subject to occasional flooding. Slope is 0 to 2 percent.

Rowland soils commonly are near Bermudian, Klinsville, Manassas, and Penn soils. Rowland soils are more poorly drained than these soils.

Typical pedon of Rowland silt loam; in pasture, about 17 miles south of Charlottesville, 0.5 mile east of the junction of State Highway 626 and Rock Castle Creek and 10 yards north of Rock Castle Creek:

- Ap—0 to 11 inches; dark reddish brown (5YR 3/4) silt loam; moderate fine granular structure; very friable, slightly sticky and slightly plastic; many fine and medium roots; medium acid; abrupt smooth boundary.
- B1—11 to 16 inches; reddish brown (5YR 4/4) silt loam; few fine faint brown (7.5YR 5/4) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; medium acid; clear wavy boundary.
- B2—16 to 30 inches; reddish brown (5YR 5/4) silt loam; common medium distinct pinkish gray (5YR 6/2) and brown (7.5YR 5/2) mottles; weak medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; medium acid; clear wavy boundary.
- B3—30 to 38 inches; multicolored reddish brown (5YR 5/3), strong brown (7.5YR 5/6), and gray (5YR 6/1) silty clay loam; weak coarse angular blocky structure; friable, sticky and plastic; 10 percent pebbles as much as 1 inch in diameter; medium acid; abrupt smooth boundary.
- IIC—38 to 60 inches; yellowish red (5YR 4/6) very gravelly silt loam; common fine prominent weak red (2.5YR 5/2) and gray (5YR 6/1) mottles; massive; friable, slightly sticky and nonplastic; 45 percent pebbles as much as 2 inches in diameter; slightly acid.

The solum is 24 to 40 inches thick. The depth to bedrock is more than 5 feet. The soil is very strongly acid to medium acid, unless limed. Coarse fragments of gravel and shale range from 0 to 10 percent in the solum and from 0 to 50 percent in the C horizon.

The A horizon has hue of 7.5YR through 2.5YR, value of 3 through 5, and chroma of 3 or 4.

The B horizon has hue of 7.5YR through 2.5YR, value of 3 through 6, and chroma of 3 through 8. It is silt loam to silty clay loam.

The C horizon has colors similar to those of the B horizon and is mottled. It is silt loam, sandy loam, silty clay loam, or the gravelly or very gravelly analogues of these textures.

Starr Series

Soils of the Starr series are deep and well drained. They formed in local alluvium and colluvium washed from surrounding upland soils. These soils are on uplands in the Piedmont. Slope ranges from 2 to 7 percent.

Starr soils commonly are near Cullen, Davidson, Dyke, Hiwassee, and Rabun soils. Starr soils have less clay in the subsoil than these soils.

Typical pedon of Starr silt loam, 2 to 7 percent slopes; in pasture, about 8 miles south of Charlottesville, 1.6 miles northeast of Carters Bridge on State Highway 627 and 20 yards north of 627:

- Ap—0 to 9 inches; reddish brown (2.5YR 4/4) silt loam; moderate fine granular structure; very friable; many fine and medium roots; 1 percent greenstone fragments as much as 1 inch in diameter; slightly acid; clear smooth boundary.
- A2—9 to 18 inches; reddish brown (5YR 4/4) silt loam; weak fine subangular blocky structure; very friable, slightly sticky and slightly plastic; many fine roots; 1 percent fragments as much as 1 inch in diameter; slightly acid; clear wavy boundary.
- B1—18 to 22 inches; red (2.5YR 4/6) silty clay loam; weak fine and very fine subangular blocky structure; friable, sticky and slightly plastic; many fine roots; slightly acid; gradual wavy boundary.
- B21—22 to 35 inches; reddish brown (2.5YR 4/4) silty clay loam; moderate fine and medium subangular blocky structure; friable, sticky and slightly plastic; common fine roots; 1 percent weathered greenstone fragments as much as 1 inch in diameter; medium acid; gradual smooth boundary.
- B22—35 to 53 inches; reddish brown (2.5YR 4/4) silty clay loam; moderate fine and very fine subangular blocky structure; friable, sticky and plastic; few fine roots; 1 percent greenstone and quartz fragments as much as 1 inch in diameter; medium acid; gradual wavy boundary.
- IIC—53 to 58 inches; reddish brown (2.5YR 4/4) clay loam; few medium prominent strong brown (7.5YR 5/8) mottles; massive; friable, slightly sticky and slightly plastic; few black (10YR 2/1) oxide stains on faces of peds; 15 percent greenstone fragments as much as 1 inch in diameter; medium acid; abrupt wavy boundary.

IIBb—58 to 68 inches; red (2.5YR 4/6) clay loam; common medium distinct strong brown (7.5YR 5/8) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few black (10YR 2/1) oxide stains on faces of peds; slightly acid.

The solum is 30 to 60 inches thick. The depth to bedrock is 5 feet or more. The soil is strongly acid to slightly acid, unless limed. Coarse fragments range from 0 to 15 percent throughout the soil. In some pedons, the buried B horizon is not present.

The A horizon has hue of 5YR or 2.5YR, value of 3 or 4, and chroma of 3 through 6.

The B horizon has hue of 7.5YR or 5YR, value of 3 through 5, and chroma of 4 through 8. It is loam, silty clay loam, or clay loam.

The C horizon has hue of 7.5YR through 2.5YR, value of 3 through 6, and chroma of 3 through 8. It is clay loam or gravelly clay loam.

Tatum Series

Soils of the Tatum series are deep and well drained. They formed in the weathered products of sericitic schist. These soils are on uplands in the Piedmont. Slope commonly ranges from 2 to 15 percent.

Tatum soils commonly are near Manteo and Nason soils. Tatum soils have a thicker solum than Manteo soils and a redder subsoil than Nason soils.

Typical pedon of Tatum silt loam, 2 to 7 percent slopes; in mixed hardwood forest, 9 miles southeast of Charlottesville, about 1/2 mile northwest of State Highway 618, about 100 yards west of State Highway 53:

A1—0 to 1 inch; grayish brown (10YR 5/2) silt loam; weak very fine granular structure; very friable; many fine and medium roots; 2 percent angular quartz pebbles 1/4 inch to 2 inches in diameter; very strongly acid; abrupt smooth boundary.

A2—1 to 6 inches; light yellowish brown (10YR 6/4) silt loam; weak fine granular structure; friable; many fine and medium roots; 8 percent angular quartz pebbles 1/4 inch to 2 inches in diameter; strongly acid; clear smooth boundary.

B1t—6 to 11 inches; strong brown (7.5YR 5/6) silty clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; few thin clay films on faces of peds; 2 percent angular quartz pebbles 1/4 inch to 2 inches in diameter; many very fine flakes of mica; very strongly acid; gradual smooth boundary.

B21t—11 to 20 inches; red (2.5YR 4/6) silty clay; moderate medium subangular blocky structure; firm, slightly sticky and plastic; common medium roots; continuous thin clay films on faces of peds; 2 percent angular quartz pebbles 1/4 inch to 1 inch in

diameter; many very fine flakes of mica; very strongly acid; gradual smooth boundary.

B22t—20 to 36 inches; red (2.5YR 4/6) clay; strong medium subangular blocky structure; firm, slightly sticky and slightly plastic; common thin clay films on faces of peds; 2 percent weathered schist fragments; many very fine flakes of mica; very strongly acid; gradual smooth boundary.

B3t—36 to 42 inches; red (2.5YR 5/6) silty clay loam; common medium faint yellowish red (5YR 4/8) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few thin and medium clay films on faces of peds; many very fine flakes of mica; 15 percent strongly weathered schist fragments; very strongly acid; clear wavy boundary.

C—42 to 51 inches; multicolored in shades of red, yellow, brown, and gray channery silt loam; massive; very friable; common thick clay flows in crevices; many very fine flakes of mica; 35 percent strongly weathered schist fragments; very strongly acid; clear wavy boundary.

R—51 inches; sericitic schist; rippable; difficult to dig with spade.

The solum is 25 to 50 inches thick. The depth to bedrock is more than 40 inches. The soil is strongly acid or very strongly acid, unless limed. Angular quartz pebbles, 1/4 inch to 1 inch in diameter, make up 0 to 15 percent of the solum. Mica flakes are common throughout. In some pedons, 20 to 40 percent of the B3 and C horizons is strongly weathered schist fragments.

The A horizon has hue of 10YR or 7.5YR, value of 3 through 6, and chroma of 2 through 6, except chroma of 2 in a thin A1 horizon. The A horizon is loam or silt loam.

The B1t horizon has hue of 7.5YR, value of 4 through 6, and chroma of 6 or 8. It is silty clay loam or clay loam. The B2t horizon has hue of 2.5YR or 10R, value of 4 or 5, and chroma of 6 or 8. It is clay loam, silty clay loam, silty clay, or clay. The B3t horizon has colors similar to those of the B2t horizon and is mottled in shades of brown, yellow, white, or gray. It is silty clay loam or clay loam.

The C horizon is multicolored and commonly is strongly weathered sericitic schist that crushes easily to silt loam. A Cr horizon is present in a few pedons.

Thurmont Series

Soils of the Thurmont series are deep and well drained. They formed in colluvium from granite, granodiorite, and granite gneiss. These soils are in the Piedmont. Slope ranges from 2 to 25 percent.

Thurmont soils commonly are near Ashe, Braddock, Hayesville, and Tusquitee soils. They have more clay in the subsoil than Ashe soils. Thurmont soils are not so red or do not have as much clay in the subsoil as

Braddock and Hayesville soils. They have a lighter colored A horizon than Tusquitee soils.

Typical pedon of Thurmont loam, 7 to 15 percent slopes; in woodland, about 11 miles northwest of Charlottesville, 1.2 miles west of the junction of State Highways 664 and 776, 160 yards southwest of Buck Mountain Creek:

- O1—2 inches to 0; partially decomposed leaves, twigs, and other organic material; abrupt smooth boundary.
- A1—0 to 1 inch; dark grayish brown (10YR 4/2) loam; weak very fine granular structure; very friable; many fine roots; strongly acid; abrupt smooth boundary.
- A2—1 inch to 10 inches; brown (10YR 5/3) loam; weak fine granular structure; friable; many fine and medium roots; very strongly acid; clear smooth boundary.
- B1—10 to 19 inches; brown (7.5YR 5/4) loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; very strongly acid; gradual smooth boundary.
- B21t—19 to 25 inches; yellowish red (5YR 5/6) clay loam; moderate medium and fine subangular blocky structure; friable, slightly sticky and slightly plastic; few thin clay films on faces of peds; very strongly acid; gradual smooth boundary.
- B22t—25 to 34 inches; yellowish red (5YR 4/6) clay loam; moderate medium and fine subangular blocky structure; friable, slightly sticky and slightly plastic; common thin clay films on faces of peds; very strongly acid; gradual wavy boundary.
- B3t—34 to 46 inches; yellowish red (5YR 4/6) sandy clay loam; few medium distinct light yellowish brown (10YR 6/4) mottles; weak fine subangular blocky structure; friable, nonsticky and slightly plastic; few thin clay films on faces of peds; very strongly acid; gradual wavy boundary.
- C1—46 to 56 inches; yellowish red (5YR 4/6) loam, pockets of clay loam; many coarse distinct light yellowish brown (10YR 6/4) mottles; massive; very friable; very strongly acid; gradual wavy boundary.
- IIC2—56 to 68 inches; light yellowish brown (10YR 6/4) granitic saprolite that crushes to loam; common coarse distinct strong brown (7.5YR 5/6) mottles; massive, rock controlled structure; firm in place; very strongly acid.

The solum is 30 to 60 inches thick. The depth to hard bedrock is more than 5 feet. The soil is strongly acid or very strongly acid, unless limed. Coarse fragments of pebbles and cobbles range from 0 to 15 percent in the A horizon and from 0 to 35 percent in the B and C horizons. Fragments are quartz, granite, granodiorite, or granite gneiss. Depth to a lithologic discontinuity ranges from 30 to 60 inches.

The A horizon has hue of 7.5YR through 2.5Y, value of 4 or 5, and chroma of 3 through 6.

The B1 horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 4 through 6. It is loam, sandy clay loam, or clay loam. The B2t horizon has hue of 5YR or 7.5YR, value of 4 through 6, and chroma of 4 through 8. It is clay loam, sandy clay loam, or the gravelly or cobbly analogues of these textures. The B3t horizon has hue of 5YR through 10YR, value of 4 through 6, and chroma of 4 through 8. It is loam, sandy loam, or sandy clay loam.

The C horizon commonly is multicolored in shades of yellow, red, and brown. It is loam or sandy loam or is saprolite that crushes to these textures. In some pedons, a stone line is present in the B3 or C1 horizon.

Toccoa Series

Soils of the Toccoa series are deep and well drained. They formed in alluvium. These soils are along streams in the Piedmont. Slope commonly is 0 to 2 percent.

Toccoa soils commonly are near Buncombe, Chewacla, and Riverview soils. They have more clay than Buncombe soils. Toccoa soils are better drained than Chewacla soils. They have less clay than Riverview soils.

Typical pedon of Toccoa fine sandy loam; in a hay field, about 5 miles east-southeast of Charlottesville, 1 mile southeast of the junction of State Highways 732 and 729 and 660 yards east of 729 between the University of Virginia Airport runways:

- Ap—0 to 9 inches; dark brown (7.5YR 4/4) fine sandy loam; weak fine granular structure; very friable; common fine roots; few fine flakes of mica; slightly acid; abrupt smooth boundary.
- C1—9 to 17 inches; brown (7.5YR 4/4) sandy loam; massive; very friable; few fine roots; few fine flakes of mica; slightly acid; abrupt smooth boundary.
- C2—17 to 29 inches; dark yellowish brown (10YR 4/4) fine sandy loam; massive; very friable; few fine roots; few fine flakes of mica; slightly acid; gradual wavy boundary.
- C3—29 to 46 inches; brown (10YR 5/3) sandy loam; massive; very friable; few fine roots; few fine flakes of mica; slightly acid; gradual wavy boundary.
- C4—46 to 60 inches; brown (10YR 5/3) sandy loam; massive; friable; few, 1/4 inch thick, brown (7.5YR 4/4) clay loam bands 4 inches apart; common fine flakes of mica; slightly acid; gradual wavy boundary.
- C5—60 to 66 inches; yellowish brown (10YR 5/4) fine sandy loam; massive; friable; few, 1/4 inch thick, brown (7.5YR 4/4) clay loam bands 4 inches apart; common fine flakes of mica; slightly acid.

The depth to bedrock is more than 5 feet. The soil is medium acid or slightly acid. Thin bands or bedding planes are common throughout the C horizon. Flakes of mica are few to many throughout the pedon.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 through 6.

The C horizon has colors similar to those of the A horizon. Gravelly or very gravelly strata are in some pedons, generally below a depth of 40 inches. The C horizon is sandy loam or fine sandy loam.

Totier Series

Soils of the Totier series are deep and well drained. They formed in material weathered from Triassic red shale. These soils are on uplands on the Piedmont. Slope ranges from 2 to 15 percent.

Totier soils commonly are near Klinessville, Manassas, Penn, and Rapidan soils. They have a thicker solum than Klinessville and Penn soils. Totier soils have more clay in the subsoil than Klinessville, Manassas, and Penn soils. They have red colors in the solum, and Rapidan soils have dark red colors.

Typical pedon of Totier silt loam, 2 to 7 percent slopes; in pasture, about 13 miles south of Charlottesville, 1.9 miles northeast of Tapscott, 0.7 mile southwest of the junction of State Highways 6 and 626, about 100 yards east of a trench silo:

- Ap—0 to 8 inches; reddish brown (5YR 4/4) silt loam; moderate fine granular structure; very friable, slightly sticky and nonplastic; common fine roots; slightly acid; clear smooth boundary.
- B21t—8 to 12 inches; yellowish red (5YR 4/6) silty clay loam; few medium distinct reddish brown (5YR 5/3) mottles; moderate fine subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; few thin clay films on faces of peds; slightly acid; gradual wavy boundary.
- B22t—12 to 32 inches; red (2.5YR 4/6) silty clay; strong fine subangular blocky structure; friable, sticky and plastic; few fine roots; continuous thin clay films on faces of peds; 2 percent shale fragments less than 1 inch in length; medium acid; gradual smooth boundary.
- B3t—32 to 40 inches; red (2.5YR 4/6) silty clay; moderate medium subangular blocky structure; friable, sticky and slightly plastic; few thin clay films on faces of peds; 15 percent red shale fragments as much as 1 inch in length; very strongly acid; gradual smooth boundary.
- C—40 to 49 inches; red (2.5YR 4/6) shaly silty clay; massive; firm, slightly sticky and slightly plastic; 30 percent red shale fragments less than 2 inches in length; very strongly acid; gradual smooth boundary.
- Cr—49 to 63 inches; red (2.5YR 4/6) soft shale; few thin dark red (2.5YR 3/6) and pinkish gray (7.5YR 7/2) silty clay loam coatings on shale fragments; very strongly acid.

The solum ranges from 36 to 60 inches in thickness. Depth to paralithic contact ranges from 40 to 60 inches.

Depth to bedrock is more than 5 feet. The soil is medium acid to very strongly acid, unless limed. Coarse fragments make up 0 to 15 percent of the solum and 20 to 60 percent of the substratum. The coarse fragments consist of angular red shale and rounded quartzite.

The A horizon has hue of 2.5YR through 7.5YR, value of 4 or 5, and chroma of 4 or 6. If the A1 horizon is less than 4 inches thick, it commonly has value and chroma of less than 4.

The Bt horizon has hue of 10R through 5YR, value of 3 or 4, and chroma of 4 through 8. Hue of 5YR is restricted to the upper part of the Bt horizon. The Bt horizon is clay, silty clay, or silty clay loam.

The C horizon has hue of 10R or 2.5YR, value of 3 or 4, and chroma of 4 or 6. It is shaly or very shaly silty clay, silty clay loam, or silt loam.

Turbeville Series

Soils of the Turbeville series are very deep and well drained. They formed in old alluvium that is at a higher elevation and commonly some distance from the present flood plains. These soils are on uplands in the Piedmont. Slopes are 2 to 15 percent.

Turbeville soils commonly are near Hiwassee, Masada, and Nason soils. They have a thicker solum than these soils, except for Masada soils. Turbeville soils have a redder subsoil than Masada and Nason soils.

Typical pedon of Turbeville loam, 2 to 7 percent slopes; in cropland, 18 miles south of Charlottesville, 1 mile north of Hatton at the end of State Highway 812 and about 65 yards south of a farmhouse:

- Ap—0 to 12 inches; dark brown (10YR 4/3) loam; moderate fine and medium granular structure; very friable; many fine roots; 2 percent pebbles 1/4 to 1/2 inch in diameter; medium acid; abrupt smooth boundary.
- B1t—12 to 16 inches; reddish brown (5YR 4/4) clay loam; moderate fine subangular blocky structure; friable, sticky and slightly plastic; many fine roots; few thin clay films on faces of peds; 1 percent rounded quartz pebbles 1/4 to 1 inch in diameter; strongly acid; gradual smooth boundary.
- B21t—16 to 24 inches; yellowish red (5YR 4/6) clay; moderate fine and medium subangular blocky structure; firm, sticky and plastic; common fine roots; common thin clay films on faces of peds; 1 percent rounded quartz pebbles 1/4 to 1/2 inch in diameter; few fine dark brown concretions; strongly acid; clear smooth boundary.
- B22t—24 to 45 inches; dark red (2.5YR 3/6) clay; strong fine and medium subangular blocky structure; firm, sticky and plastic; many thin clay films on faces of peds; 1 percent quartz pebbles 1/4 to 1/2 inch in diameter; strongly acid; gradual smooth boundary.

B23t—45 to 56 inches; dark red (2.5YR 3/6) clay; strong fine subangular blocky structure; firm, very sticky and plastic; many thin and medium clay films on faces of peds; 2 percent quartz pebbles 1/4 to 1/2 inch in diameter; very strongly acid; gradual smooth boundary.

B3t—56 to 70 inches; weak red (10YR 4/4) clay loam; few fine distinct yellowish red (5YR 4/6) and strong brown (7.5YR 5/6) mottles; moderate fine subangular blocky structure; friable, sticky and slightly plastic; few thin and medium clay films on faces of peds; 10 percent rounded quartz pebbles 1/2 to 1 inch in diameter; very strongly acid.

The solum is more than 60 inches thick. The depth to bedrock is more than 5 feet. The soil is strongly acid or very strongly acid, unless limed. Quartz, granite, gneiss, and greenstone pebbles 1/4 inch to 3 inches in diameter make up 0 to 15 percent of the solum. In some pedons, a stone line is in the lower part of the solum.

The A horizon has hue of 7.5YR through 10YR, value of 4 or 5, and chroma of 2 through 4.

The B1 horizon has hue of 7.5YR or 5YR, value of 4 or 5, and chroma of 4 through 8. It is clay loam or sandy clay loam.

The B2t horizon has hue of 5YR through 10R, value of 3 through 5, and chroma of 4 through 8. The Bt horizon is clay, clay loam, or sandy clay loam

Tusquitee Series

Soils of the Tusquitee series are deep and well drained. They formed in loamy colluvium derived from granite, granodiorite, and granite gneiss. These soils are on the outlying mountains in the Blue Ridge. Slope ranges from 2 to 25 percent.

Tusquitee soils commonly are near Ashe, Braddock, Chester, Hayesville, Parker, Porters, and Thurmont soils. They have more clay in the subsoil than Ashe and Parker soils, and have a thick, dark surface layer that Ashe, Braddock, Hayesville, Parker, and Thurmont soils do not have. Tusquitee soils have less clay in the subsoil than Braddock and Hayesville soils and have a deeper solum than Ashe, Parker, and Porters soils.

Typical pedon of Tusquitee loam in an area of Tusquitee stony loam, 7 to 15 percent slopes; in apple orchard, about 8 miles west-southwest of Charlottesville, 1.75 miles south-southeast of the junction of State Highways 694 and 693, 750 yards south-southeast of the Miller School dam:

Ap1—0 to 5 inches; very dark brown (10YR 2/2) loam; weak very fine granular structure; very friable, nonsticky and nonplastic; many fine and medium roots; 2 percent granite pebbles less than 1 inch in diameter; slightly acid; clear smooth boundary.

Ap2—5 to 9 inches; dark brown (7.5YR 3/2) loam; weak fine granular structure; very friable, nonsticky and

nonplastic; common fine and medium roots; 2 percent granite pebbles less than 1 inch in diameter; slightly acid; abrupt smooth boundary.

B1—9 to 14 inches; brown (7.5YR 4/4) loam; weak fine subangular blocky structure; friable, slightly sticky and nonplastic; common fine and medium roots; 2 percent pebbles of granite less than 1 inch in diameter; medium acid; clear smooth boundary.

B21t—14 to 28 inches; strong brown (7.5YR 4/6) clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; few thin clay films on faces of peds; 2 percent cobbles of granite; medium acid; clear smooth boundary.

B22t—28 to 35 inches; brown (7.5YR 4/4) gravelly clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; few thin clay films on faces of peds; 10 percent pebbles and 5 percent cobbles of granite, quartz, and granodiorite; medium acid; gradual wavy boundary.

B3t—35 to 45 inches; strong brown (7.5YR 4/6) very cobbly clay loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; few thin clay films on faces of peds; 20 percent pebbles and 40 percent cobbles of granite, quartz, and granodiorite; medium acid; gradual wavy boundary.

C1—45 to 53 inches; strong brown (7.5YR 4/6) very gravelly sandy loam; common medium distinct dark yellowish brown (10YR 3/4) mottles; massive; firm in place, nonsticky and nonplastic; few fine and medium roots; 55 percent pebbles of granite, quartz, and granodiorite; medium acid; clear smooth boundary.

C2—53 to 63 inches; dark yellowish brown (10YR 3/4) very cobbly sandy loam; massive; firm in place, nonsticky and nonplastic; few fine and medium roots; 15 percent pebbles and 30 percent cobbles of granite, quartz, and granodiorite; medium acid.

The solum is more than 40 inches thick. The depth to bedrock is more than 5 feet. Rock fragments of granite, quartz, granodiorite, or granite gneiss range from 0 to 15 percent in the A, B1, and B2 horizons and range from 0 to 60 percent in the B3 and C horizons. The solum is strongly acid or medium acid, unless limed.

The A horizon has hue of 7.5YR or 10YR, value of 2 or 3, and chroma of 2 or 3.

The B1 horizon, if present, has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 4 or 6. It is loam or sandy clay loam. The B2t horizon has hue of 7.5YR or 10YR, value of 4 through 6, and chroma of 4 through 8. It is sandy clay loam, clay loam, or gravelly analogues of these textures. The B3 horizon is similar to the B2t horizon in color and texture but is very gravelly, cobbly, or very cobbly.

The C horizon has hue of 7.5YR or 10YR, value of 3 through 6, and chroma of 2 through 6. It is loam, sandy loam, and the very gravelly, cobbly, or very cobbly analogues of these textures.

Udorthents

Udorthents consist of deep, somewhat excessively drained, well drained, and moderately well drained soils along drainageways, and disturbed soils and soil materials on ridgetops and side slopes around areas used for quarries or urban development. These soils formed in loamy and clayey fill material derived from cuts over acidic or basic crystalline rock and in areas where material has been removed. Slope commonly is 2 to about 25 percent, but ranges to 60 percent or more in some areas.

Udorthents commonly are near Ashe, Catoctin, Chester, Cullen, Elioak, Hayesville, Manteo, Myersville, Nason, and Rabun soils. Unlike these soils, Udorthents commonly are made up of disturbed, mixed material.

Because of the variability of Udorthents, a typical pedon is not described. The thickness of the fill material and the depth to bedrock are more than 40 inches. The soil is strongly acid or extremely acid throughout. Pebbles, cobbles, and stones make up from 10 to 60 percent of some pedons.

The surface layer is multicolored in shades of brown, red, yellow, black, and gray. It is loam to clay loam or the gravelly or very gravelly analogues of these textures. The subsurface layer ranges from 16 to more than 60 inches in thickness.

The material under the surface layer has colors similar to those of the surface layer. It is loam to clay or the gravelly or very gravelly analogues of these textures.

The material beneath the fill layer is quite variable. It ranges from material similar to that of the adjacent soils to hard rock.

Unison Series

Soils of the Unison series are deep and well drained. They formed in colluvium washed from uplands underlain by greenstone. These soils are on mountains in the Blue Ridge. Slope ranges from 2 to 25 percent.

Unison soils commonly are near Dyke, Lew, Myersville, and Starr soils. They are not so red as Dyke soils. Unison soils have more clay in the subsoil than Lew, Myersville, and Starr soils.

Typical pedon of Unison silt loam, 2 to 7 percent slopes; in pasture, about 9 miles east-northeast of Charlottesville, 1 mile north of Cismont, 3/4 mile west of State Highway 231 and 2/3 mile northeast of State Highway 600:

Ap—0 to 6 inches; dark brown (7.5YR 4/4) silt loam; weak medium granular structure; friable; many fine roots; slightly acid; clear smooth boundary.

B1—6 to 12 inches; yellowish red (5YR 5/6) silty clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; slightly acid; gradual smooth boundary.

B21t—12 to 24 inches; reddish brown (5YR 4/4) silty clay loam; moderate medium subangular blocky structure; firm, sticky and plastic; few fine and medium roots; thin patchy clay films on faces of peds; medium acid; gradual smooth boundary.

B22t—24 to 50 inches; reddish brown (5YR 4/4) clay; strong fine and medium subangular blocky structure; firm, sticky and plastic; common thin continuous clay films on faces of peds; few black mineral concretions; 2 percent weathered greenstone fragments as much as 2 inches in diameter; medium acid; gradual smooth boundary.

B3—50 to 58 inches; yellowish red (5YR 4/6) silty clay loam; weak fine and medium subangular blocky structure; friable, sticky and slightly plastic; few black mineral concretions; 5 percent weathered greenstone fragments as much as 2 inches in diameter; medium acid; clear wavy boundary.

C—58 to 60 inches; strong brown (7.5YR 5/6) cobbly clay loam; massive; friable, sticky and slightly plastic; 25 percent greenstone cobbles as much as 6 inches in diameter; medium acid.

The solum is 30 to 60 inches thick. The depth to bedrock is more than 5 feet. Greenstone pebbles and cobbles range from 0 to 35 percent throughout the pedon. The soil is strongly acid or medium acid throughout, unless limed. Lithologic discontinuities are common.

The A horizon has hue of 7.5YR or 10YR, value of 4 or 5, and chroma of 3 through 6. It is silt loam or loam.

The B horizon has hue of 5YR or 7.5YR, value of 4 or 5, and chroma of 3 through 8. It is clay loam, silty clay loam, or clay.

The C horizon is mostly strong brown cobbly clay loam.

Wahee Series

Soils of the Wahee series are deep and somewhat poorly drained. They formed in clayey alluvium. These soils are along larger streams in the Piedmont. Slope is 0 to 4 percent.

Wahee soils commonly are near Dogue, McQueen, and Wehadkee soils. They are more poorly drained than Dogue and McQueen soils. Wahee soils are not so poorly drained as Wehadkee soils.

Typical pedon of Wahee silt loam; in pasture, about 8 miles southeast of Charlottesville, about 2 miles south of U.S. Highway 250 and State Highway 808, 350 yards north of the Rivanna River:

- Ap1—0 to 7 inches; dark grayish brown (10YR 4/2) silt loam; weak fine granular structure; friable; many fine and medium roots; strongly acid; abrupt smooth boundary.
- Ap2—7 to 9 inches; grayish brown (2.5Y 5/2) silt loam; weak fine granular structure; friable; many fine roots; strongly acid; abrupt smooth boundary.
- B1—9 to 13 inches; light yellowish brown (2.5Y 6/4) clay loam; common medium distinct brown (10YR 5/6) mottles; weak medium subangular blocky structure; friable, slightly sticky and nonplastic; many fine roots; strongly acid; gradual smooth boundary.
- B21tg—13 to 25 inches; light brownish gray (2.5Y 6/2) clay loam; many coarse distinct light olive brown (2.5Y 5/4) mottles; moderate medium subangular blocky structure; friable, slightly sticky and slightly plastic; few fine roots; thin patchy clay films on faces of peds; strongly acid; gradual smooth boundary.
- B22tg—25 to 40 inches; light gray (10YR 6/1) clay; common medium distinct light olive gray (5Y 6/2) and many fine distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm, sticky and slightly plastic; thin continuous clay films on faces of peds; strongly acid; gradual smooth boundary.
- B3tg—40 to 60 inches; gray (N 6/0) clay loam; many coarse prominent yellowish brown (10YR 5/8) and light olive brown (2.5Y 5/6) mottles; weak coarse subangular blocky structure; firm, slightly sticky and slightly plastic; few thin clay films on faces of peds; strongly acid.

The solum is more than 40 inches thick. The depth to bedrock is more than 5 feet. The soil is very strongly acid or strongly acid, unless limed. Rounded quartz pebbles make up 0 to 10 percent of the solum.

The A horizon has hue of 10YR or 2.5Y, value of 3 through 5, and chroma of 1 or 2.

The B1 horizon has hue of 10YR or 2.5Y, value of 5 or 6, and chroma of 3 through 6. It is sandy clay loam or clay loam. The B2t horizon is neutral or has hue of 10YR through 5Y, value of 4 through 7, and chroma of 2 or less. It is mottled. The B2t horizon is clay, clay loam, silty clay loam, or silty clay. The B3 horizon is neutral or has hue of 10YR through 5Y, value of 5 through 7, and chroma of 0 through 2, and is mottled. It is clay loam, sandy clay loam, or silty clay loam.

The C horizon, if present, has colors similar to those of the B3 horizon. It is loam, sandy clay loam, or clay loam.

Watt Series

Soils of the Watt series are moderately deep and somewhat excessively drained. They formed in the weathered products of graphitic schist. These soils are

on uplands in the Piedmont. Slope ranges from 7 to 45 percent.

Watt soils commonly are near Albemarle, Elioak, Gleneig, and Hazel soils. They have less clay and are more excessively drained than Albemarle, Elioak, and Gleneig soils. Watt soils are darker and have more coarse fragments than Hazel soils.

Typical pedon of Watt channery silt loam; 7 to 15 percent slopes; in hardwood forest, 12 miles northeast of Charlottesville, about 170 yards west of State Highway 644, 1/2 mile north of State Highway 641:

O1—1 inch to 0; hardwood leaves and twigs.

A11—0 to 3 inches; very dark gray (5Y 3/1) channery silt loam; moderate fine granular structure; very friable; many fine roots; 20 percent thin weathered schist and quartz fragments; very strongly acid; clear smooth boundary.

A12—3 to 10 inches; dark olive gray (5Y 3/2) channery silt loam; moderate fine granular structure; very friable; many fine and medium roots; 25 percent thin weathered schist and quartz fragments; very strongly acid; clear smooth boundary.

B—10 to 18 inches; olive gray (5Y 4/2) very channery silt loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine and medium roots; 40 percent thin weathered schist fragments; very strongly acid; gradual smooth boundary.

C—18 to 28 inches; multicolored olive gray (5Y 4/2), black (5Y 2/1), and light olive brown (2.5Y 5/4) very channery silt loam; massive; firm in place; 55 percent coarse fragments of weathered schist; very strongly acid; clear wavy boundary.

R—28 inches; partly weathered black (10YR 2/1) graphitic schist.

The solum is 10 to 20 inches thick. The depth to bedrock ranges from 20 to 40 inches. The soil is extremely acid or very strongly acid, unless limed. Angular quartz pebbles make up 0 to 5 percent of the solum. Weathered schist fragments make up 15 to 35 percent of the A horizon and 35 to 70 percent of the B and C horizons.

The A horizon has hue of 2.5YR through 5Y, value of 2 or 3, and chroma of 1 or 2.

The B horizon is neutral or has hue of 10YR through 5Y, value of 3 or 4, and chroma of 2 or less. It is silt loam or silty clay loam in the fine earth fraction.

The C horizon is strongly weathered graphitic schist. It is neutral, or it has hue of 7.5YR or 5YR, value of 3 or 4, and chroma of 0 through 2. It is channery or very channery silt loam. In some pedons, the C horizon grades to a Cr horizon.

Wedowee Series

Soils of the Wedowee series are deep and well drained. They formed in the weathered products of granite and granite gneiss. These soils are on uplands in the Piedmont. Slope is 2 to 15 percent.

Wedowee soils commonly are near Cullen, Elioak, Glenelg, Louisburg, and Pacolet soils. They have a thinner solum than Cullen and Elioak soils and have yellower hues in the subsoil than Pacolet soils.

Wedowee soils have more clay in the subsoil than Glenelg and Louisburg soils.

Typical pedon of Wedowee sandy loam, 2 to 7 percent slopes; in hardwood forest, about 5 miles north of Charlottesville, about 1/2 mile south of the junction of State Highways 643 and 743, 2/3 mile west of U.S. Highway 29:

- O—1 inch to 0; very dark gray (10YR 3/1) partially decomposed forest litter; clear smooth boundary.
- A1—0 to 1 inch; dark grayish brown (10YR 4/2) sandy loam; weak very fine granular structure; very friable; many fine roots; very strongly acid; clear smooth boundary.
- A2—1 to 7 inches; dark yellowish brown (10YR 4/4) sandy loam; weak fine granular structure; very friable; many fine roots; 2 percent quartz pebbles as much as 1 inch in diameter; very strongly acid; gradual smooth boundary.
- B1—7 to 11 inches; yellowish brown (10YR 5/6) sandy clay loam; weak fine and medium subangular blocky structure; friable, slightly sticky and slightly plastic; many fine and medium roots; many fine and medium pores; 2 percent quartz pebbles as much as 1 inch in diameter; strongly acid; gradual smooth boundary.
- B21t—11 to 15 inches; yellowish brown (10YR 5/6) clay loam; moderate fine and medium subangular blocky structure; hard, friable, slightly sticky and slightly plastic; common fine and medium roots; many fine and medium pores; few thin patchy clay films; strongly acid; gradual smooth boundary.
- B22t—15 to 26 inches; yellowish red (5YR 5/6) clay; strong fine and medium subangular blocky structure; hard, firm, slightly sticky and plastic; few medium and large roots; few thin continuous clay films; few fine flakes of mica; strongly acid; gradual smooth boundary.
- B3—26 to 30 inches; strong brown (7.5YR 5/6) sandy clay loam; common medium distinct dark yellowish brown (10YR 3/4) mottles; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; few large roots; common fine flakes of mica; 2 percent quartz pebbles as much as 1 inch in diameter; 10 percent weathered granite fragments as much as 2 inches in length; strongly acid; gradual wavy boundary.
- C—30 to 42 inches; multicolored yellowish brown (10YR 5/4), strong brown (7.5YR 5/6), and white (10YR

8/1) sandy clay loam; massive; friable; common fine flakes of mica; 85 percent granite saprolite that crushes easily; 2 percent quartz pebbles as much as 1 inch in diameter; strongly acid; gradual wavy boundary.

Cr—42 to 60 inches; multicolored yellowish brown (10YR 5/4), strong brown (7.5YR 5/6), and white (10YR 8/1) granite saprolite that crushes easily to sandy clay loam; rock structure; friable; strongly acid.

The solum is 20 to 40 inches thick. The depth to bedrock is more than 5 feet. The soil is strongly acid or very strongly acid, unless limed. Angular quartz pebbles, 1/4 inch to 2 inches in diameter, and weathered rock fragments make up 0 to 15 percent of the solum. Few to common fine flakes of mica are in one or more horizons.

The A horizon has hue of 7.5YR or 10YR, value of 3 through 6, and chroma of 2 through 6. It is sandy loam, fine sandy loam, loam, or the gravelly analogues of these textures.

The B1 horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. It is loam or sandy clay loam. The B2t horizon has hue of 5YR through 10YR, value of 5 or 6, and chroma of 6 or 8. It is sandy clay loam, clay loam, loam, or clay. The B3 horizon has colors similar to those of the B2t horizon and commonly is mottled in shades of red, yellow, or brown. It is clay loam, sandy clay loam, or loam.

The C horizon commonly is mottled in shades of red, yellow, brown, or white. It is clay loam, sandy clay loam, loam, or sandy loam with as much as 90 percent saprolite. A Cr horizon is present in some pedons.

Wehadkee Series

Soils of the Wehadkee series are deep and poorly drained. They formed in stratified alluvial sediment. Wehadkee soils are along streams in the Piedmont and Blue Ridge. They are subject to occasional flooding. Slope is 0 to 2 percent.

Wehadkee soils commonly are near Chewacla, Riverview, and Wahee soils. They are more poorly drained than these soils. Wehadkee soils have less clay in the subsoil than Wahee soils.

Typical pedon of Wehadkee silt loam; in pasture, about 19 miles south of Charlottesville, 1/2 mile east of Warren Railroad station, 70 yards south of the railroad tracks along the James River:

- Ap—0 to 10 inches; grayish brown (10YR 5/2) silt loam; few fine distinct yellowish brown (10YR 5/6) mottles; weak fine granular structure; very friable; many fine roots; few fine flakes of mica; slightly acid; abrupt smooth boundary.
- B1g—10 to 16 inches; dark gray (10YR 4/1) silty clay loam; common medium distinct yellowish brown (10YR 5/4) mottles; weak fine subangular blocky

structure; friable; few fine and medium roots; few fine flakes of mica; medium acid; clear smooth boundary.

B21g—16 to 24 inches; gray (10YR 5/1) silty clay loam; common medium prominent reddish yellow (7.5YR 6/6) mottles; weak very fine subangular blocky structure; friable; common fine flakes of mica; medium acid; gradual smooth boundary.

B22g—24 to 43 inches; gray (N 5/0) silty clay loam; common medium prominent strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable, slightly sticky and slightly plastic; common fine flakes of mica; medium acid; gradual smooth boundary.

B3g—43 to 52 inches; gray (N 5/0) silt loam; weak fine subangular blocky structure; friable, slightly sticky and slightly plastic; common fine flakes of mica; medium acid; clear wavy boundary.

Cg—52 to 62 inches; gray (N 5/0) sandy loam; common medium distinct dark yellowish brown (10YR 4/4) mottles; massive; friable; 10 percent pebbles as much as 2 inches in diameter; common fine flakes of mica; medium acid.

The solum ranges from 35 to 60 inches in thickness. The depth to bedrock is more than 5 feet. The soil is strongly acid to slightly acid, unless limed.

The A horizon has hue of 10YR or 2.5Y, value of 4 through 6, and chroma of 1 through 3.

The B horizon is neutral or has hue of 10YR, value of 4 through 6, and chroma of 0 through 2. It has mottles in shades of yellow and brown. This horizon is clay loam, silty clay loam, silt loam, or loam.

The C horizon, if present, is neutral or has hue of 10YR or 2.5Y, value of 5 through 7, and chroma of 0 through 2. It has stratified layers of sand and gravel in some pedons. This horizon is loam, sandy loam, or silt loam.

Worsham Series

Soils of the Worsham series are deep and poorly drained. They formed in clayey alluvium and colluvium. These soils are in the Piedmont. Slope ranges from 2 to 7 percent.

Worsham soils commonly are near Abell, Belvoir, Lignum, Meadowville, and Starr soils. They are more poorly drained and have more clay in the subsoil than these soils.

Typical pedon of Worsham loam, 2 to 7 percent slopes; in pasture, about 10 miles northwest of Charlottesville, 1/3 mile south of the junction of State Highways 688 and 671 and 70 yards east of 671:

A1—0 to 4 inches; dark grayish brown (2.5Y 4/2) loam; common fine prominent yellowish red (5YR 5/8) mottles in root channels; weak medium granular structure; friable, slightly sticky and slightly plastic;

many fine and medium roots; slightly acid; abrupt smooth boundary.

A2—4 to 9 inches; grayish brown (2.5Y 5/2) loam; common fine prominent yellowish red (5YR 5/8) mottles in root channels; weak medium granular structure; friable, slightly sticky and slightly plastic; many fine and medium roots; slightly acid; abrupt smooth boundary.

B1tg—9 to 13 inches; grayish brown (2.5Y 5/2) clay loam; common fine prominent brown (7.5YR 5/8) mottles; weak medium and coarse subangular blocky structure; friable, slightly sticky and slightly plastic; many fine and medium roots; thin patchy clay films on faces of peds; strongly acid; clear smooth boundary.

B21tg—13 to 20 inches; light gray (5Y 6/1) clay; common medium prominent strong brown (7.5YR 5/8) and common fine prominent red (2.5YR 4/6) mottles; weak medium prismatic structure parting to moderate medium subangular blocky; firm, slightly sticky and plastic; common fine and medium roots; thin continuous clay films on faces of peds; strongly acid; clear smooth boundary.

B22tg—20 to 29 inches; light gray (5Y 6/1) clay; common medium prominent red (2.5YR 4/8) and few medium prominent strong brown (7.5YR 5/8) mottles; strong medium and coarse prismatic structure parting to strong medium angular blocky; firm, sticky and plastic; common fine and medium roots on faces of prisms; thick continuous clay films on faces of peds; strongly acid; clear smooth boundary.

B23tg—29 to 39 inches; gray (N 5/0) clay; common medium prominent red (2.5YR 4/8) mottles; moderate medium and coarse prismatic structure parting to strong thick and very thick platy; firm, sticky and plastic; few fine and medium roots on faces of prisms; thick continuous clay films on faces of peds; strongly acid; gradual wavy boundary.

B3g—39 to 54 inches; light gray (N 6/0) sandy clay; few medium prominent brownish yellow (10YR 6/8) mottles; weak medium and coarse prismatic structure; firm, sticky and slightly plastic; 2 percent quartz pebbles less than 1/2 inch in diameter; strongly acid; clear smooth boundary.

Cg—54 to 60 inches; light gray (N 7/0) sandy clay loam; massive; friable, slightly sticky and slightly plastic; 5 percent quartz pebbles less than 1 inch in diameter; very strongly acid.

The solum ranges from 40 to more than 60 inches in thickness. The depth to bedrock is more than 5 feet. The soil is very strongly acid or strongly acid, unless limed. Quartz pebbles make up 0 to 10 percent of the solum.

The A horizon has hue of 10YR or 2.5Y, value of 3 through 6, and chroma of 1 or 2. It is loam or silt loam.

The B1 and B2 horizons are neutral or have hue of 10YR through 5Y, value of 5 or 6, and chroma of 0 through 2. These horizons have common mottles. The B1 horizon is sandy clay loam or clay loam. The B2 horizon is clay, sandy clay, or clay loam. The B3 horizon

is neutral or has hue of 10YR or 2.5Y, value of 5 through 7, and chroma of 0 through 2. It has common mottles. It is clay loam, sandy clay loam, or sandy clay.

The C horizon is typically gray or light gray. It is sandy clay loam or clay loam.

Formation of the Soils

Soils are the products of soil-forming processes acting upon materials altered or deposited by geologic forces. The five soil-forming factors that contribute to the differences among soils are climate, parent material, plant and animal life, relief, and time. Climate and plant and animal life, particularly vegetation, are the active forces in soil formation. Their effect on the parent material is modified by relief and by the length of time the parent material has been in place. In some places one factor dominates in the formation of soil and determines most of its properties, but normally the interaction of all factors determines the kind of soil that develops in any given place.

Factors of Soil Formation

Soils are formed as a result of physical weathering of parent rock, chemical weathering of rock fragments and organic matter, the transfer of materials, and gains and losses of organic matter and minerals.

Soil formation begins with physical weathering. Large pieces of rock are broken into smaller pieces by frost action and other forces. The rocks and rock fragments are further reduced to the size of particles of sand and silt. These particles form an unconsolidated layer of material in which plants can grow. Organic matter is added to the mineral material when plants and animals die.

The rock fragments and the organic matter are chemically weathered by solution, carbonation, oxidation, reduction, and the action of weak acids. By chemical processes, iron, aluminum, calcium, and other elements are released in a form that plants can use.

The transfer of materials from one part of the soil to another is common in most soils. Organic matter is suspended in solution and moved. Calcium and other elements are leached from the surface layer. To some extent, these elements are held by the clay in the subsoil or lower part of the profile, but some is leached out of the soil. Bases are absorbed by plant roots and stored in the stems, leaves, and twigs of plants. When the plants die and decay, they return these elements to the soil. In most of the soils of the county, the translocation of clay minerals and the forming of clay minerals in-place, have had a strong influence on the development of soil horizons. As the soil develops, it gradually forms characteristics that are recognizable and that distinguish one layer from another.

The results of the soil-forming factors can be distinguished by the different layers, or soil horizons, seen in a soil profile. The soil profile extends from the surface of the land downward to materials that are little altered by the soil-forming processes.

Most soils contain three major horizons called A, B, and C. These major horizons may be further subdivided by the use of subscripts and letters to indicate changes within one horizon. An example would be a B2t horizon that represents a layer within the B horizon with translocated clay eluviated from the A horizon.

The A horizon is the surface layer. It is the layer with the largest accumulation of organic matter, called an A1 horizon. It is also the layer of maximum leaching or eluviation of clay and iron. When considerable leaching has taken place, an A2 horizon is formed. The A2 horizon of some of the soils in Albemarle County shows light colors resulting from the loss of iron, aluminum, and clay minerals. A few soils have an A3 horizon that is transitional between the A and B horizons.

The B horizon is underneath the A horizon and is commonly called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay, iron, aluminum, or other compounds leached from the A horizon. In some soils the B horizon is formed by alteration in place rather than from illuviation. The alteration may be due to oxidation and reduction of iron or the weathering to clay minerals. The B horizon is generally firmer, has more clay, has more pronounced structure, and has browner or redder colors than the A2 horizon. Most young soils have not developed a B horizon.

The C horizon is below the A or B horizons. It consists of materials that are little altered by the soil-forming processes, but may be modified by weathering.

Climate

Climate is important in the formation of soils because it influences the weathering of minerals. Weathering is more rapid under a warm, humid climate than it is under a cold or a dry climate. The type and abundance of vegetation are influenced by the amount of precipitation and the length of the growing season. Precipitation also affects the translocation and leaching of some products of weathering. Hard rains and frequent showers may cause excessive erosion.

The climate typical of this county causes intense leaching of soluble material and colloidal materials downward in many soils. Examples are the Cullen, Davidson, Hayesville, and Tatum soils. Because the soils are frozen for only short periods and only to a shallow depth, the amount of weathering and the translocation of material are further increased. Leaching has kept free carbonates of lime from accumulating in the soils, although calcium is a part of the mineral components of some of the underlying rocks. Practically all of the soils are acid.

Weathering breaks down the rocks so that other forces of soil formation have a chance to act. Most of the upland soils have well developed profile features.

The climate varies locally as a result of differences in relief, in the degree and direction of slope, and in the position of the slope on the landscape. These factors account for significant differences among the soils in the mountain areas of the county and in the Piedmont. A more detailed discussion of the climate of Albemarle County is given in the section "Climate."

Parent Material

The two broad classes of parent material in Albemarle County are residual material and transported material. Residual material has weathered in-place from the underlying rock. The transported materials—colluvium and alluvium—have been carried by water, or moved by gravity, or both of these and laid down as unconsolidated deposits of clay, silt, sand, and larger fragments of rock. The characteristics of residual material are related directly to the characteristics of the underlying rocks. Those of the transported material are related to the characteristics of the soils or rocks from which this material was washed or from which it moved.

The rocks in Albemarle County are of the Precambrian Era or of the Lower Cambrian, Ordovician, and Triassic Periods, but mainly Precambrian. Igneous, metamorphic, and sedimentary rocks are in the county, and all have been sources of parent material.

The igneous rocks include amphibolite, granite, gabbro, diorite, greenstone, and diabase. These rocks are the source of parent material for the Davidson, Hayesville, Louisburg, and Orange soils.

The metamorphic rocks include schist, marble, phyllite, gneiss, soapstone, quartzite, and slate. They are the source of parent material for the Elioak, Nason, and Watt soils.

The sedimentary rocks include siltstone, sandstone, conglomerate, and shale. The Manassas, Rapidan, and Totter soils formed in material that weathered from sedimentary rocks. The Chewacla, Riverview, and Wehadkee soils formed in transported material on first bottoms. The Dogue, Masada, and Turbeville soils formed in transported material on stream terraces. The Dyke, Lew, and Tusquitee soils formed in colluvium.

The characteristics of the underlying rocks and of the parent material strongly influence the kinds of changes that take place during weathering. Because of differences in these characteristics the rates of weathering vary. For example, sercitic schist, which is resistant to weathering, underlies the Manteo soils and is within a depth of 2 feet. Granite gneiss, in comparison, weathers deeply and is the parent material of the deep Hayesville and Cullen soils.

Many characteristics of a soil can be traced directly to the parent material. These include the texture, mineral content, kind and quantity of clay, natural fertility, and soil reaction.

Plant and Animal Life

Biologic forces have an important role in the formation of the soils in Albemarle County. Trees, shrubs, grasses, and other herbaceous plants and micro-organisms, earthworms, and various other forms of plant and animal life are active agents in the soil forming-processes. The kinds of plants and animals that live on and in the soils are determined by environmental factors including climate, parent material, relief, and age of the soil. Where the variation in either climate or vegetation is great enough to be significant, the soil varies accordingly.

Plants supply organic matter to the soil, and they transfer plant nutrients from the lower horizons to the upper horizons. Organic matter decomposes and is mixed into the soils by the action of micro-organisms and earthworms or by chemical reaction. The rate of decomposition in Albemarle County is fairly rapid because of the favorable temperature, generally abundant moisture, and favorable population of micro-organisms in the soil. Organic matter has not accumulated in the soils of Albemarle County to any great extent, but it ranges from 1 to 3 percent by volume. The highest contents of organic matter are generally in the mountain areas.

The original vegetation in this county was a dense forest of hardwoods, or of hardwoods and pines. The density of the stands, the proportion of different species, and the kinds of ground cover varied to some extent. The forests were so nearly uniform that this factor would not likely account for all the differences in soil properties throughout the county. Deciduous trees generally have deep roots and their leaves vary in content of plant nutrients, but they generally return more bases and more phosphorus to the soil than do the needles of coniferous trees.

As agriculture developed in Albemarle County, the activity of man influenced soil formation. Forests were cleared, and new kinds of plants were introduced. Cultivation, artificial drainage, and the application of lime and fertilizers changed some characteristics of the soils in the county. Man's activity has caused an accelerated

loss of soil through erosion. Because of this loss, the soil in many areas is thinner and less productive than before it was cleared. Some of the material washed from sloping areas has been deposited in depressions and on flood plains. The Buncombe and Riverview soils formed in such material. These soils are young or immature.

Relief

Relief, or lay of the land, affects the formation of soils by causing differences in internal drainage, surface runoff, soil temperature, and geologic erosion. It can alter the effects of parent material on the development of soils to the extent that several different kinds of soils may form from the same kind of parent material.

In this county, slopes range from nearly level to very steep. In the steeper areas, the effects of relief are rapid surface runoff, little percolation of water through the soil, little movement of clay, little translocation of soil bases, and erosion that removes weathered rock and soil materials as rapidly as they are formed. The Ashe and Monteo soils formed in this kind of environment and have weakly expressed horizons. Gently sloping and strongly sloping areas are well drained, and erosion is generally slight. The soils in such areas are mature and have well defined horizons; they include the Cullen, Davidson, Hayesville, and Tatum soils. Low flat areas or depressions are wet, are commonly ponded, and have restricted drainage. Mottled soils, such as the Wahee and Worsham soils, formed in these depressional areas. Low areas and flood plains are wet because they are flooded frequently and have a seasonal high water table. The Wahadkee soils are in such areas, and they are

gray and mottled because of the seasonal high water table. Relief also affects the amount of radiant energy absorbed by soils, and this energy, in turn, affects the native vegetation.

Time

Time is important in the formation of soils. If the factors of soil formation have operated long enough to form well defined, genetically related horizons and a soil is in equilibrium with its environment, the soil is considered to be mature. The Cullen, Hayesville, and Turbeville soils are considered to be mature. However, if the soil shows little or no horizonation, it is considered to be immature or young. The Riverview and Toccoa soils are considered to be immature. Many soils range in maturity between these extremes.

Soils that formed in the same kind of parent material but in areas of different topography do not necessarily mature in the same length of time. On steep slopes, for example, well defined horizons have not had time to develop in the Manteo soils, because soil material has been removed by erosion almost as rapidly as it has formed. In sloping areas there is time for soil development; the Nason soils in sloping areas are examples.

Soils formed in material that is resistant to weathering require more time to reach maturity than soils formed in easily weathered material. On flood plains the development of genetically related horizons may be slowed or prevented if alluvium is being deposited frequently. An example of this is the Buncombe soils.

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Glossary

ABC soil. A soil having an A, a B, and a C horizon.

AC soil. A soil having only an A and a C horizon.

Commonly such soil formed in recent alluvium or on steep rocky slopes.

Aeration, soil. The exchange of air in soil with air from the atmosphere. The air in a well aerated soil is similar to that in the atmosphere; the air in a poorly aerated soil is considerably higher in carbon dioxide and lower in oxygen.

Aggregate, soil. Many fine particles held in a single mass or cluster. Natural soil aggregates, such as granules, blocks, or prisms, are called peds. Clods are aggregates produced by tillage or logging.

Alluvium. Material, such as sand, silt, or clay, deposited on land by streams.

Area reclaim (in tables). An area difficult to reclaim after the removal of soil for construction and other uses. Revegetation and erosion control are extremely difficult.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	<i>Inches</i>
Very low.....	0 to 3
Low.....	3 to 6
Moderate.....	6 to 9
High.....	9 to 12
Very high.....	more than 12

Base saturation. The degree to which material having cation exchange properties is saturated with exchangeable bases (sum of Ca, Mg, Na, K), expressed as a percentage of the total cation exchange capacity.

Bedrock. The solid rock that underlies the soil and other unconsolidated material or that is exposed at the surface.

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.

Cation. An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

Cation-exchange capacity. The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity, but is more precise in meaning.

Channery soil. A soil that is, by volume, more than 15 percent thin, flat fragments of sandstone, shale, slate, limestone, or schist as much as 6 inches along the longest axis. A single piece is called a fragment.

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 film. A thin coating of oriented clay on the surface of a soil aggregate or lining pores or root channels. Synonyms: clay coating, clay skin.

Climax vegetation. 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 fragments. If round, mineral or rock particles 2 millimeters to 25 centimeters (10 inches) in diameter; if flat, mineral or rock particles (flagstone) 15 to 38 centimeters (6 to 15 inches) long.

Coarse textured soil. Sand or loamy sand.

Cobblestone (or cobble). A rounded or partly rounded fragment of rock 3 to 10 inches (7.5 to 25 centimeters) in diameter.

Colluvium. Soil material, 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 constructing terraces, diversions, and other water-control measures on a complex slope is difficult.

Complex, soil. A map unit of two or more kinds of soil 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 are somewhat similar in all areas.

Concretions. Grains, pellets, or nodules of various sizes, shapes, and colors consisting of concentrated compounds or cemented soil grains. The composition of most concretions is unlike that of the surrounding soil. Calcium carbonate and iron oxide are common compounds in concretions.

Conservation tillage. A form of noninversion tillage that retains protective amounts of residue mulch on the soil surface throughout the year.

Consistence, soil. The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are—
Loose.—Noncoherent when dry or moist; does not hold together in a mass.

Friable.—When moist, crushes easily under gentle pressure between thumb and forefinger and can be pressed together into a lump.

Firm.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

Plastic.—When wet, readily deformed by moderate pressure but can be pressed into a lump; will form a “wire” when rolled between thumb and forefinger.

Sticky.—When wet, adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

Hard.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

Soft.—When dry, breaks into powder or individual grains under very slight pressure.

Cemented.—Hard; little affected by moistening.

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.

Controlled grazing. Postponing grazing or arresting grazing for a prescribed period.

Corrosive. High risk of corrosion to uncoated steel or deterioration of concrete.

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.

Cutbanks cave (in tables). The walls of excavations tend to cave in or slough.

Depth to rock (in tables). Bedrock is too near the surface for the specified use.

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 periods of saturation or partial saturation during soil formation, as opposed to altered drainage, which is commonly the result of artificial drainage or irrigation but may be caused by the sudden deepening of channels or the blocking of drainage outlets. Seven classes of natural soil drainage are recognized:

Excessively drained.—Water is removed from the soil very rapidly. Excessively drained soils are commonly very coarse textured, rocky, or shallow. Some are steep. All are free of the mottling related to wetness.

Somewhat excessively drained.—Water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy and rapidly pervious. Some are shallow. Some are so steep that much of the water they receive is lost as runoff. All are free of the mottling related to wetness.

Well drained.—Water is removed from the soil readily, but not rapidly. It is available to plants throughout most of the growing season, and wetness does not inhibit growth of roots for significant periods during most growing seasons. Well drained soils are commonly medium textured. They are mainly free of mottling.

Moderately well drained.—Water is removed from the soil somewhat slowly during some periods. Moderately well drained soils are wet for only a short time during the growing season, but periodically they are wet long enough that most mesophytic crops are affected. They commonly have a slowly pervious layer within or directly below the solum, or periodically receive high rainfall, or both.

Somewhat poorly drained.—Water is removed slowly enough that the soil is wet for significant periods during the growing season. Wetness markedly restricts the growth of mesophytic crops unless artificial drainage is provided. Somewhat poorly drained soils commonly have a slowly pervious layer, a high water table, additional water from seepage, nearly continuous rainfall, or a combination of these.

Poorly drained.—Water is removed so slowly that the soil is saturated periodically during the growing season or remains wet for long periods. Free water is commonly at or near the surface for long enough during the growing season that most mesophytic crops cannot be grown unless the soil is artificially drained. The soil is not continuously saturated in layers directly below plow depth. Poor drainage

results from a high water table, a slowly pervious layer within the profile, seepage, nearly continuous rainfall, or a combination of these.

Very poorly drained.—Water is removed from the soil so slowly that free water remains at or on the surface during most of the growing season. Unless the soil is artificially drained, most mesophytic crops cannot be grown. Very poorly drained soils are commonly level or depressed and are frequently ponded. Yet, where rainfall is high and nearly continuous, they can have moderate or high slope gradients.

Drainage, surface. Runoff, or surface flow of water, from an area.

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 the activities of man or other animals or of a catastrophe in nature, for example, fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay in the soil. The soil is not a source of gravel or sand for construction purposes.

Excess sulfur (in tables). Excessive amount of sulfur in the soil. The sulfur causes extreme acidity if the soil is drained, and the growth of most plants is restricted.

Fast intake (in tables). The rapid movement of water into the soil.

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.

Fine textured soil. Sandy clay, silty clay, and clay.

First bottom. The normal flood plain of a stream, subject to frequent or occasional flooding.

Flagstone. A thin fragment of sandstone, limestone, slate, shale, or (rarely) schist, 6 to 15 inches (15 to 37.5 centimeters) long.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

Foot slope. The inclined surface at the base of a hill.

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.

Frost action (in tables). Freezing and thawing of soil moisture. Frost action can damage roads, buildings and other structures, and plant roots.

Genesis, soil. The mode of origin of the soil. Refers especially to the processes or soil-forming factors responsible for the formation of the solum, or true soil, from the unconsolidated parent material.

Gleyed soil. Soil that formed under poor drainage, resulting in the reduction of iron and other elements in the profile and in gray colors and mottles.

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 up to 3 inches (2 millimeters to 7.5 centimeters) in diameter. An individual piece is a pebble.

Gravelly soil material. Material that is 15 to 50 percent, by volume, rounded or angular rock fragments, not prominently flattened, up to 3 inches (7.5 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 (geology). Water filling all the unblocked pores of underlying 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.

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 upper case letter represents the major horizons. Numbers or lower case 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 at the surface of a mineral soil.

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 O, A, or E horizon. The B horizon is in part a layer of transition from the overlying horizon 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. The combined A and B horizons are generally called the solum, or true soil. If a soil does not have a B horizon, the A horizon alone is the solum.

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 A or B horizon. 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, the Arabic numeral 2 precedes the letter C.

R layer.—Consolidated rock beneath the soil. The rock commonly underlies a C horizon, but can be directly below an A or a B horizon.

Hydrologic soil groups. Refers to soils grouped according to their runoff-producing characteristics. The chief consideration is the inherent capacity of soil bare of vegetation to permit infiltration. The slope and the kind of plant cover are not considered but are separate factors in predicting runoff. Soils are assigned to four groups. In group A are soils having a high infiltration rate when thoroughly wet and having a low runoff potential. They are mainly deep, well drained, and sandy or gravelly. In group D, at the other extreme, are soils having a very slow infiltration rate and thus a high runoff potential. They have a claypan or clay layer at or near the surface, have a permanent high water table, or are shallow over nearly impervious bedrock or other material. A soil is assigned to two hydrologic groups if part of the acreage is artificially drained and part is undrained.

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 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.

Irrigation. Application of water to soils to assist in production of crops. Methods of irrigation are—

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.

Basin.—Water is applied rapidly to nearly level plains surrounded by levees or dikes.

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.

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 (7.5 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.

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.

Low strength. The soil is not strong enough to support loads.

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.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

Moderately coarse textured soil. Sandy loam and fine sandy loam.

Moderately fine textured soil. Clay loam, sandy clay loam, and silty clay loam.

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. Mottling generally indicates poor aeration and impeded drainage. 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).

Munsell notation. A designation of color by degrees of the three simple variables—hue, value, and chroma. For example, a notation of 10YR 6/4 is a color of 10YR hue, value of 6, and chroma of 4.

Neutral soil. A soil having a pH value between 6.6 and 7.3. (See Reaction, soil.)

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.

Parent material. The unconsolidated organic and mineral material in which soil forms.

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 downward movement of water through the soil.

Percs slowly (in tables). The slow movement of water through the soil adversely affecting the specified use.

Permeability. The quality of the soil that enables water to move downward through the profile. Permeability is measured as the number of inches per hour that water moves downward through the saturated soil. Terms describing permeability are:

Very slow.....	less than 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. For example, slope, stoniness, and thickness.

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.

Ponding. Standing water on soils in closed depressions. Unless the soils are artificially drained, the water can be removed only by percolation or evapotranspiration.

Poorly graded. Refers to a coarse grained soil or soil material consisting mainly of particles of nearly the same size. Because there is little difference in size of the particles, density can be increased only slightly by compaction.

Poor filter (in tables). Because of rapid permeability the soil may not adequately filter effluent from a waste disposal system.

Productivity, soil. The capability of a soil for producing a specified plant or sequence of plants under specific management.

Profile, soil. A vertical section of the soil extending through all its horizons and into the parent material.

Reaction, soil. A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline. The degree of acidity or alkalinity is expressed as—

	<i>pH</i>
Extremely acid.....	below 4.5
Very strongly acid.....	4.5 to 5.0
Strongly acid.....	5.1 to 5.5
Medium acid.....	5.6 to 6.0
Slightly acid.....	6.1 to 6.5
Neutral.....	6.6 to 7.3
Mildly 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

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.

Rock fragments. Rock or mineral fragments having a diameter of 2 millimeters or more; for example, pebbles, cobbles, stones, and boulders.

Rooting depth (in tables). Shallow root zone. The soil is shallow over a layer that greatly restricts roots.

Root zone. The part of the soil that can be penetrated by plant roots.

Runoff. The precipitation discharged into stream channels from an area. The water that flows off the surface of the land without sinking into the soil is called surface runoff. Water that enters the soil before reaching surface streams is called ground-water runoff or seepage flow from ground water.

Sand. As a soil separate, individual rock or mineral fragments from 0.05 millimeter to 2.0 millimeters in diameter. Most sand grains consist of quartz. As a soil textural class, a soil that is 85 percent or more sand and not more than 10 percent clay.

Sandstone. Sedimentary rock containing dominantly sand-size particles.

Saprolite (soil science). Unconsolidated residual material underlying the soil and grading to hard bedrock below.

Sedimentary rock. Rock made up of particles deposited from suspension in water. The chief kinds of sedimentary rock are conglomerate, formed from gravel; sandstone, formed from sand; shale, formed from clay; and limestone, formed from soft masses of calcium carbonate. There are many intermediate types. Some wind-deposited sand is consolidated into sandstone.

Seepage (in tables). The movement of water through the soil. Seepage adversely affects the specified use.

Sequum. A sequence consisting of an illuvial horizon and the overlying eluvial horizon.

Serles, soil. A group of soils that have profiles that are almost alike, except for differences in texture of the surface layer or of the underlying material. 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.

Shrink-swell. 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.

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.

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 feet.

Slope. The inclination of the land surface from the horizontal. Percentage of slope is the vertical distance divided by horizontal distance, then multiplied by 100. Thus, a slope of 20 percent is a drop of 20 feet in 100 feet of horizontal distance.

Slope (in tables). Slope is great enough that special practices are required to insure satisfactory performance of the soil for a specific use.

Slow intake (in tables). The slow movement of water into the soil.

Slow refill (in tables). The slow filling of ponds, resulting from restricted permeability in the soil.

Small stones (in tables). Rock fragments less than 3 inches (7.5 centimeters) in diameter. Small stones adversely affect the specified use of the soil.

Soil. A natural, three-dimensional body at the earth's surface. It is capable of supporting plants and has properties resulting from the integrated effect of climate and living matter acting on earthy parent material, as conditioned by relief 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 of separates recognized in the United States are as follows:

	<i>Millimeters</i>
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 and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Stockpiling plant growth. Allowing plant growth, generally tall fescue pasture, to accumulate in fall for use as pasture in winter.

Stones. Rock fragments 10 to 24 inches (25 to 60 centimeters) in diameter.

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 which provide vegetative barriers to wind and water erosion.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Stubble mulch. Stubble or other crop residue left on the soil or partly worked into the soil. It protects the soil from wind 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. Breaking up a compact subsoil by pulling a special chisel through the soil.

Substratum. The part of the soil below the solum.

Subsurface layer. Technically, the A2 horizon. Generally refers to a leached horizon lighter in color and lower in content of organic matter than the overlying surface layer.

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."

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.

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.

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 too thin for the specified use.

Tilth, soil. The physical condition of the soil as related to tillage, seedbed preparation, seedling emergence, and root penetration.

Toe slope. The outermost inclined surface at the base of a hill; part of a foot slope.

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, are in soils in extremely small amounts. They are essential to plant growth.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Weathering. All physical and chemical changes produced in rocks or other deposits at or near the earth's surface by atmospheric agents. These changes result in disintegration and decomposition of the material.

Well graded. Refers to soil material consisting of coarse grained particles that are well distributed over a wide range in size or diameter. Such soil normally can be easily increased in density and bearing properties by compaction. Contrasts with poorly graded soil.

Wilting point (or permanent wilting point). The moisture content of soil, on an oven-dry basis, at which a plant (specifically sunflower) wilts so much that it does not recover when placed in a humid, dark chamber.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION
 [Recorded in the period 1949-78 at Charlottesville, Virginia]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average daily	2 years in 10 will have--		Average number of growing degree days ¹	Average	2 years in 10 will have--		Average number of days with 0.10 inch or more	Average snowfall
				Maximum temperature higher than--	Minimum temperature lower than--			Less than--	More than--		
	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>°F</u>	<u>Units</u>	<u>In</u>	<u>In</u>	<u>In</u>		<u>In</u>
January----	44.6	26.5	35.6	73	5	72	3.18	1.82	4.27	6	6.4
February----	47.1	28.5	37.8	73	7	78	3.07	1.35	4.06	6	6.3
March-----	55.9	35.5	45.7	84	18	229	4.01	2.71	5.57	7	4.9
April-----	68.2	45.7	57.0	92	28	506	3.15	2.11	4.59	6	0.4
May-----	75.9	54.7	65.3	92	37	782	4.25	2.56	5.32	7	0.0
June-----	82.8	62.6	72.7	97	46	981	3.74	2.07	5.39	6	0.0
July-----	87.0	66.6	76.8	99	57	1,138	4.64	2.61	6.31	7	0.0
August-----	85.6	65.5	75.6	97	54	1,102	4.65	2.46	6.49	7	0.0
September--	79.3	59.3	69.3	96	42	879	3.92	1.85	5.75	6	0.0
October----	68.9	48.9	58.9	87	28	564	4.18	1.54	7.16	5	0.0
November---	57.9	38.9	48.4	80	17	278	3.16	1.78	4.92	5	1.5
December---	46.9	29.8	38.0	71	11	90	3.53	2.18	5.00	6	4.0
Yearly											
Average--	66.8	47.0	56.9	---	---	---	---	---	---	---	---
Extreme--	---	---	---	107	-2	---	---	---	---	---	---
Total----	---	---	---	---	---	6,698	45.48	25.04	64.83	56	23.1

¹A 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 (40° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1949-78 at
Charlottesville, Virginia]

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--	March 25	March 30	April 15
2 years in 10 later than--	March 24	March 28	April 13
5 years in 10 later than--	March 14	March 20	April 3
First freezing temperature in fall:			
1 year in 10 earlier than--	November 18	October 29	October 26
2 years in 10 earlier than--	November 22	November 4	October 29
5 years in 10 earlier than--	December 2	November 10	November 8

TABLE 3.--GROWING SEASON

[Recorded in the period 1949-78
at Charlottesville, Virginia]

Probability	Length of growing season if daily minimum temperature is--		
	Higher than 24° F	Higher than 28° F	Higher than 32° F
	Days	Days	Days
9 years in 10	241	220	195
8 years in 10	246	225	198
5 years in 10	266	232	214
2 years in 10	282	251	230
1 year in 10	283	255	231

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
1B	Abell silt loam, 2 to 7 percent slopes-----	580	0.1
2B	Albemarle fine sandy loam, 2 to 7 percent slopes-----	400	0.1
2C	Albemarle fine sandy loam, 7 to 15 percent slopes-----	980	0.2
2D	Albemarle fine sandy loam, 15 to 25 percent slopes-----	670	0.1
3C	Albemarle very stony fine sandy loam, 7 to 15 percent slopes-----	410	0.1
3D	Albemarle very stony fine sandy loam, 15 to 25 percent slopes-----	570	0.1
3E	Albemarle very stony fine sandy loam, 25 to 45 percent slopes-----	250	0.1
4B	Ashe loam, 2 to 7 percent slopes-----	210	*
4C	Ashe loam, 7 to 15 percent slopes-----	1,230	0.3
4D	Ashe loam, 15 to 25 percent slopes-----	9,420	1.9
4E	Ashe loam, 25 to 45 percent slopes-----	14,480	3.0
5B	Belvoir loam, 2 to 7 percent slopes-----	900	0.2
6	Bermudian silt loam-----	350	0.1
7B	Braddock loam, 2 to 7 percent slopes-----	6,180	1.3
7C	Braddock loam, 7 to 15 percent slopes-----	3,740	0.8
7D	Braddock loam, 15 to 25 percent slopes-----	390	0.1
8C3	Braddock clay loam, 7 to 15 percent slopes, severely eroded-----	570	0.1
9B	Braddock very stony loam, 2 to 7 percent slopes-----	270	0.1
9C	Braddock very stony loam, 7 to 15 percent slopes-----	580	0.1
9D	Braddock very stony loam, 15 to 25 percent slopes-----	410	0.1
10	Buncombe loamy sand-----	1,040	0.2
11D	Cataska-Hartleton very stony loams, 15 to 25 percent slopes-----	610	0.1
11E	Cataska-Hartleton very stony loams, 25 to 60 percent slopes-----	3,500	0.7
12C	Catoctin silt loam, 7 to 15 percent slopes-----	720	0.2
12D	Catoctin silt loam, 15 to 25 percent slopes-----	1,370	0.3
12E	Catoctin silt loam, 25 to 45 percent slopes-----	1,320	0.3
13C	Catoctin very stony silt loam, 7 to 15 percent slopes-----	550	0.1
13D	Catoctin very stony silt loam, 15 to 25 percent slopes-----	950	0.2
13E	Catoctin very stony silt loam, 25 to 45 percent slopes-----	2,860	0.6
14B	Chester loam, 2 to 7 percent slopes-----	1,220	0.3
14C	Chester loam, 7 to 15 percent slopes-----	5,380	1.1
14D	Chester loam, 15 to 25 percent slopes-----	6,440	1.4
14E	Chester loam, 25 to 45 percent slopes-----	2,950	0.6
15C	Chester very stony loam, 7 to 15 percent slopes-----	1,630	0.3
15D	Chester very stony loam, 15 to 25 percent slopes-----	4,550	1.0
15E	Chester very stony loam, 25 to 45 percent slopes-----	11,860	2.4
16	Chewacla silt loam-----	5,210	1.1
17	Craigsville loam-----	2,110	0.4
18B	Creedmoor loam, 2 to 7 percent slopes-----	670	0.1
19B	Cullen loam, 2 to 7 percent slopes-----	4,690	1.0
19C	Cullen loam, 7 to 15 percent slopes-----	4,030	0.9
19D	Cullen loam, 15 to 25 percent slopes-----	1,410	0.3
20B3	Cullen clay loam, 2 to 7 percent slopes, severely eroded-----	270	0.1
20C3	Cullen clay loam, 7 to 15 percent slopes, severely eroded-----	1,760	0.4
20D3	Cullen clay loam, 15 to 25 percent slopes, severely eroded-----	1,140	0.2
21B	Culpeper fine sandy loam, 2 to 7 percent slopes-----	1,760	0.4
21C	Culpeper fine sandy loam, 7 to 15 percent slopes-----	1,530	0.3
21D	Culpeper fine sandy loam, 15 to 25 percent slopes-----	270	0.1
22C3	Culpeper clay loam, 7 to 15 percent slopes, severely eroded-----	300	0.1
23B	Davidson clay loam, 2 to 7 percent slopes-----	2,340	0.5
23C	Davidson clay loam, 7 to 15 percent slopes-----	1,200	0.3
24B	Dogue silt loam, 2 to 7 percent slopes-----	940	0.2
25B	Dyke silt loam, 2 to 7 percent slopes-----	4,230	0.9
25C	Dyke silt loam, 7 to 15 percent slopes-----	1,300	0.3
26B3	Dyke clay loam, 2 to 7 percent slopes, severely eroded-----	280	0.1
26C3	Dyke clay loam, 7 to 15 percent slopes, severely eroded-----	1,210	0.3
26D3	Dyke clay loam, 15 to 25 percent slopes, severely eroded-----	470	0.1
27B	Elioak loam, 2 to 7 percent slopes-----	8,710	1.8
27C	Elioak loam, 7 to 15 percent slopes-----	7,110	1.5
27D	Elioak loam, 15 to 25 percent slopes-----	1,160	0.2
28C3	Elioak clay loam, 7 to 15 percent slopes, severely eroded-----	810	0.2
28D3	Elioak clay loam, 15 to 25 percent slopes, severely eroded-----	250	0.1
29B	Fauquier silt loam, 2 to 7 percent slopes-----	1,300	0.3
29C	Fauquier silt loam, 7 to 15 percent slopes-----	1,670	0.4
29D	Fauquier silt loam, 15 to 25 percent slopes-----	1,120	0.2
29E	Fauquier silt loam, 25 to 45 percent slopes-----	470	0.1
30C3	Fauquier silty clay loam, 7 to 15 percent slopes, severely eroded-----	440	0.1
30D3	Fauquier silty clay loam, 15 to 25 percent slopes, severely eroded-----	200	*
31C	Fauquier very stony silt loam, 7 to 15 percent slopes-----	500	0.1
31D	Fauquier very stony silt loam, 15 to 25 percent slopes-----	600	0.1

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
32B	Fluvanna silt loam, 2 to 7 percent slopes-----	700	0.1
32C	Fluvanna silt loam, 7 to 15 percent slopes-----	580	0.1
33C	Fluvanna very stony silt loam, 7 to 15 percent slopes-----	420	0.1
34B	Glenelg loam, 2 to 7 percent slopes-----	1,270	0.3
34C	Glenelg loam, 7 to 15 percent slopes-----	5,150	1.1
34D	Glenelg loam, 15 to 25 percent slopes-----	4,780	1.0
34E	Glenelg loam, 25 to 45 percent slopes-----	850	0.2
35C	Hartleton-Cataska very stony loams, 7 to 15 percent slopes-----	500	0.1
36B	Hayesville loam, 2 to 7 percent slopes-----	16,700	3.4
36C	Hayesville loam, 7 to 15 percent slopes-----	16,020	3.3
36D	Hayesville loam, 15 to 25 percent slopes-----	5,130	1.1
36E	Hayesville loam, 25 to 45 percent slopes-----	470	0.1
37B3	Hayesville clay loam, 2 to 7 percent slopes, severely eroded-----	450	0.1
37C3	Hayesville clay loam, 7 to 15 percent slopes, severely eroded-----	6,400	1.4
37D3	Hayesville clay loam, 15 to 25 percent slopes, severely eroded-----	5,030	1.1
37E3	Hayesville clay loam, 25 to 45 percent slopes, severely eroded-----	290	0.1
38C	Hayesville very stony loam, 7 to 15 percent slopes-----	1,400	0.3
38D	Hayesville very stony loam, 15 to 25 percent slopes-----	1,450	0.3
38E	Hayesville very stony loam, 25 to 45 percent slopes-----	860	0.2
39C	Hazel loam, 7 to 15 percent slopes-----	770	0.2
39D	Hazel loam, 15 to 25 percent slopes-----	4,550	1.0
39E	Hazel loam, 25 to 45 percent slopes-----	4,530	1.0
40D	Hazel very stony loam, 15 to 25 percent slopes-----	910	0.2
40E	Hazel very stony loam, 25 to 45 percent slopes-----	3,710	0.8
41B	Hiwassee loam, 2 to 7 percent slopes-----	1,480	0.3
41C	Hiwassee loam, 7 to 15 percent slopes-----	380	0.1
42B3	Hiwassee clay loam, 2 to 7 percent slopes, severely eroded-----	280	0.1
42C3	Hiwassee clay loam, 7 to 15 percent slopes, severely eroded-----	630	0.1
42D3	Hiwassee clay loam, 15 to 25 percent slopes, severely eroded-----	220	*
43B	Klinesville channery silt loam, 2 to 7 percent slopes-----	220	*
43C	Klinesville channery silt loam, 7 to 15 percent slopes-----	1,280	0.3
43D	Klinesville channery silt loam, 15 to 25 percent slopes-----	1,500	0.3
43E	Klinesville channery silt loam, 25 to 45 percent slopes-----	610	0.1
44C	Lew very stony silt loam, 7 to 15 percent slopes-----	1,030	0.2
44D	Lew very stony silt loam, 15 to 25 percent slopes-----	1,120	0.2
45C	Lew extremely stony silt loam, 7 to 15 percent slopes-----	660	0.1
45D	Lew extremely stony silt loam, 15 to 25 percent slopes-----	520	0.1
46B	Lignum silt loam, 2 to 7 percent slopes-----	1,820	0.4
47C	Louisburg sandy loam, 7 to 15 percent slopes-----	500	0.1
47D	Louisburg sandy loam, 15 to 25 percent slopes-----	1,170	0.2
47E	Louisburg sandy loam, 25 to 45 percent slopes-----	470	0.1
48D	Louisburg very stony sandy loam, 15 to 25 percent slopes-----	300	0.1
48E	Louisburg very stony sandy loam, 25 to 45 percent slopes-----	1,330	0.3
49B	Manassas silt loam, 2 to 7 percent slopes-----	730	0.2
50D	Manor loam, 15 to 25 percent slopes-----	290	0.1
50E	Manor loam, 25 to 45 percent slopes-----	270	0.1
51B	Manteo channery silt loam, 2 to 7 percent slopes-----	5,990	1.3
51C	Manteo channery silt loam, 7 to 15 percent slopes-----	14,030	2.9
51D	Manteo channery silt loam, 15 to 25 percent slopes-----	10,410	2.1
51E	Manteo channery silt loam, 25 to 45 percent slopes-----	2,700	0.6
52D	Manteo very channery silt loam, 15 to 25 percent slopes-----	940	0.2
52E	Manteo very channery silt loam, 25 to 45 percent slopes-----	980	0.2
53B	Masada loam, 2 to 7 percent slopes-----	840	0.2
53C	Masada loam, 7 to 15 percent slopes-----	390	0.1
54B	Mayodan loam, 2 to 7 percent slopes-----	490	0.1
54C	Mayodan loam, 7 to 15 percent slopes-----	180	*
55B	McQueen loam, 2 to 7 percent slopes-----	1,050	0.2
56B	Meadowville loam, 2 to 7 percent slopes-----	3,330	0.7
56C	Meadowville loam, 7 to 15 percent slopes-----	1,000	0.2
57B	Mount Lucas silt loam, 2 to 7 percent slopes-----	1,110	0.2
58B	Myersville silt loam, 2 to 7 percent slopes-----	1,210	0.3
58C	Myersville silt loam, 7 to 15 percent slopes-----	2,160	0.5
58D	Myersville silt loam, 15 to 25 percent slopes-----	1,740	0.4
58E	Myersville silt loam, 25 to 45 percent slopes-----	880	0.2
59C	Myersville very stony silt loam, 7 to 15 percent slopes-----	770	0.2
59D	Myersville very stony silt loam, 15 to 25 percent slopes-----	2,520	0.5
59E	Myersville very stony silt loam, 25 to 45 percent slopes-----	5,740	1.2
60C	Myersville-Catoclin very stony silt loams, 7 to 15 percent slopes-----	1,850	0.4
60D	Myersville-Catoclin very stony silt loams, 15 to 25 percent slopes-----	3,560	0.8
60E	Myersville-Catoclin very stony silt loams, 25 to 60 percent slopes-----	19,060	3.9

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
61D	Myersville-Rock outcrop complex, 15 to 25 percent slopes-----	240	0.1
61E	Myersville-Rock outcrop complex, 25 to 45 percent slopes-----	320	0.1
62B	Nason silt loam, 2 to 7 percent slopes-----	15,180	3.1
62C	Nason silt loam, 7 to 15 percent slopes-----	8,220	1.7
62D	Nason silt loam, 15 to 25 percent slopes-----	550	0.1
63B	Orange silt loam, 2 to 7 percent slopes-----	610	0.1
64B	Orange very stony silt loam, 2 to 7 percent slopes-----	380	0.1
65B	Pacolet sandy loam, 2 to 7 percent slopes-----	1,010	0.2
65C	Pacolet sandy loam, 7 to 15 percent slopes-----	810	0.2
66C	Parker very stony loam, 7 to 15 percent slopes-----	700	0.1
66D	Parker very stony loam, 15 to 25 percent slopes-----	2,320	0.5
66E	Parker very stony loam, 25 to 45 percent slopes-----	13,580	2.8
67D	Parker extremely stony loam, 15 to 25 percent slopes-----	550	0.1
67E	Parker extremely stony loam, 25 to 60 percent slopes-----	6,100	1.3
68B	Penn silt loam, 2 to 7 percent slopes-----	960	0.2
68C	Penn silt loam, 7 to 15 percent slopes-----	1,940	0.4
68D	Penn silt loam, 15 to 25 percent slopes-----	390	0.1
69	Pits, quarry-----	250	0.1
70C	Porters very stony loam, 7 to 15 percent slopes-----	210	*
70D	Porters very stony loam, 15 to 25 percent slopes-----	280	0.1
70E	Porters very stony loam, 25 to 45 percent slopes-----	1,800	0.4
71B	Rabun clay loam, 2 to 7 percent slopes-----	3,670	0.8
71C	Rabun clay loam, 7 to 15 percent slopes-----	6,150	1.3
71D	Rabun clay loam, 15 to 25 percent slopes-----	5,400	1.1
71E	Rabun clay loam, 25 to 45 percent slopes-----	1,340	0.3
72B3	Rabun clay, 2 to 7 percent slopes, severely eroded-----	1,130	0.2
72C3	Rabun clay, 7 to 15 percent slopes, severely eroded-----	4,540	1.0
72D3	Rabun clay, 15 to 25 percent slopes, severely eroded-----	2,320	0.5
72E3	Rabun clay, 25 to 45 percent slopes, severely eroded-----	240	0.1
73C	Rabun very stony clay loam, 7 to 15 percent slopes-----	540	0.1
73D	Rabun very stony clay loam, 15 to 25 percent slopes-----	2,060	0.4
73E	Rabun very stony clay loam, 25 to 45 percent slopes-----	1,220	0.3
74B	Rapidan silt loam, 2 to 7 percent slopes-----	1,400	0.3
74C	Rapidan silt loam, 7 to 15 percent slopes-----	870	0.2
74D	Rapidan silt loam, 15 to 25 percent slopes-----	280	0.1
75C3	Rapidan silty clay loam, 7 to 15 percent slopes, severely eroded-----	420	0.1
75D3	Rapidan silty clay loam, 15 to 25 percent slopes, severely eroded-----	400	0.1
76	Riverview loam-----	4,230	0.9
77	Riverview-Chewacla complex-----	3,380	0.7
78	Rowland silt loam-----	460	0.1
79B	Starr silt loam, 2 to 7 percent slopes-----	4,230	0.9
80B	Tatum silt loam, 2 to 7 percent slopes-----	3,730	0.8
80C	Tatum silt loam, 7 to 15 percent slopes-----	1,100	0.2
81B	Thurmont loam, 2 to 7 percent slopes-----	1,960	0.4
81C	Thurmont loam, 7 to 15 percent slopes-----	2,560	0.5
81D	Thurmont loam, 15 to 25 percent slopes-----	460	0.1
82C	Thurmont very stony loam, 7 to 15 percent slopes-----	1,060	0.2
82D	Thurmont very stony loam, 15 to 25 percent slopes-----	790	0.2
83	Toccoa fine sandy loam-----	3,050	0.6
84B	Totier silt loam, 2 to 7 percent slopes-----	4,410	0.9
84C	Totier silt loam, 7 to 15 percent slopes-----	990	0.2
85C3	Totier silty clay loam, 7 to 15 percent slopes, severely eroded-----	380	0.1
86B	Turbeville loam, 2 to 7 percent slopes-----	850	0.2
86C	Turbeville loam, 7 to 15 percent slopes-----	350	0.1
87B	Tusquitee stony loam, 2 to 7 percent slopes-----	470	0.1
87C	Tusquitee stony loam, 7 to 15 percent slopes-----	970	0.2
87D	Tusquitee stony loam, 15 to 25 percent slopes-----	490	0.1
88	Udorthents, loamy-----	1,550	0.3
89B	Unison silt loam, 2 to 7 percent slopes-----	970	0.2
89C	Unison silt loam, 7 to 15 percent slopes-----	310	0.1
90B	Unison very stony silt loam, 2 to 7 percent slopes-----	580	0.1
90C	Unison very stony silt loam, 7 to 15 percent slopes-----	1,220	0.3
90D	Unison very stony silt loam, 15 to 25 percent slopes-----	250	0.1
91	Urban land-----	660	0.1
92	Wahee silt loam-----	690	0.1
93C	Watt channery silt loam, 7 to 15 percent slopes-----	270	0.1
93D	Watt channery silt loam, 15 to 25 percent slopes-----	270	0.1
93E	Watt channery silt loam, 25 to 45 percent slopes-----	400	0.1
94B	Wedowee sandy loam, 2 to 7 percent slopes-----	500	0.1
94C	Wedowee sandy loam, 7 to 15 percent slopes-----	850	0.2

See footnote at end of table.

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS--Continued

Map symbol	Soil name	Acres	Percent
95	Wehadkee silt loam-----	3,550	0.7
96B	Worsham loam, 2 to 7 percent slopes-----	1,450	0.3
	Water-----	2,520	0.5
	Total-----	474,000	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
1B	Abell silt loam, 2 to 7 percent slopes
2B	Albemarle fine sandy loam, 2 to 7 percent slopes
6	Bermudian silt loam
7B	Braddock loam, 2 to 7 percent slopes
14B	Chester loam, 2 to 7 percent slopes
16	Chewacla silt loam (where drained and protected from flooding)
19B	Cullen loam, 2 to 7 percent slopes
21B	Culpeper fine sandy loam, 2 to 7 percent slopes
23B	Davidson clay loam, 2 to 7 percent slopes
24B	Dogue silt loam, 2 to 7 percent slopes
25B	Dyke silt loam, 2 to 7 percent slopes
27B	EliOak loam, 2 to 7 percent slopes
29B	Fauquier silt loam, 2 to 7 percent slopes
32B	Fluvanna silt loam, 2 to 7 percent slopes
34B	Glenelg loam, 2 to 7 percent slopes
36B	Hayesville loam, 2 to 7 percent slopes
41B	Hiwassee loam, 2 to 7 percent slopes
49B	Manassas silt loam, 2 to 7 percent slopes
53B	Masada loam, 2 to 7 percent slopes
54B	Mayodan loam, 2 to 7 percent slopes
55B	McQueen loam, 2 to 7 percent slopes
56B	Meadowville loam, 2 to 7 percent slopes
57B	Mount Lucas silt loam, 2 to 7 percent slopes (where drained)
58B	Myersville silt loam, 2 to 7 percent slopes
62B	Nason silt loam, 2 to 7 percent slopes
65B	Pacolet sandy loam, 2 to 7 percent slopes
68B	Penn silt loam, 2 to 7 percent slopes
71B	Rabun clay loam, 2 to 7 percent slopes
74B	Rapidan silt loam, 2 to 7 percent slopes
76	Riverview loam (where protected from flooding)
77	Riverview-Chewacla complex (where drained and protected from flooding)
78	Rowland silt loam (where drained and protected from flooding)
79B	Starr silt loam, 2 to 7 percent slopes
80B	Tatum silt loam, 2 to 7 percent slopes
81B	Thurmont loam, 2 to 7 percent slopes
83	Toccoa fine sandy loam (where protected from flooding)
84B	Totier silt loam, 2 to 7 percent slopes
86B	Turbeville loam, 2 to 7 percent slopes
89B	Unison silt loam, 2 to 7 percent slopes
94B	Wedowee sandy loam, 2 to 7 percent slopes

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE

[Yields are those that can be expected under a high level of management. Absence of a yield indicates that the soil is not suited to the crop or the crop generally is not grown on the soil]

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass-legume hay	Pasture	Apples	Peaches
	Bu	Bu	Ton	Ton	AUM*	Bu	Bu
1B----- Abell	110	60	---	3.5	8.0	---	---
2B----- Albemarle	100	70	---	2.5	4.0	---	---
2C----- Albemarle	80	60	---	2.5	4.0	---	---
2D----- Albemarle	60	40	---	2.0	3.5	---	---
3C, 3D----- Albemarle	---	---	---	---	3.0	---	---
3E----- Albemarle	---	---	---	---	2.0	---	---
4B, 4C----- Ashe	65	---	---	3.0	6.0	300	150
4D----- Ashe	---	---	---	2.0	4.5	260	120
4E----- Ashe	---	---	---	---	4.0	250	110
5B----- Belvoir	80	60	---	2.4	6.0	---	---
6----- Bermudian	130	80	---	3.5	10.5	---	---
7B----- Braddock	120	---	---	5.0	10.0	480	380
7C----- Braddock	115	---	---	4.5	9.0	450	340
7D----- Braddock	100	---	---	4.0	7.5	420	300
8C3----- Braddock	85	---	---	3.5	6.5	310	300
9B, 9C, 9D----- Braddock	---	---	---	---	6.0	480	380
10----- Buncombe	---	---	---	3.0	5.0	---	---
11D----- Cataska-Hartleton	---	---	---	---	---	---	---
11E----- Cataska-Hartleton	---	---	---	---	---	---	---
12C----- Catoctin	---	---	---	2.5	5.0	200	---
12D----- Catoctin	---	---	---	2.0	4.0	160	---

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass- legume hay	Pasture	Apples	Peaches
	Bu	Bu	Ton	Ton	AUM*	Bu	Bu
12E, 13C, 13D, 13E----- Catoctin	---	---	---	---	---	---	---
14B----- Chester	135	80	5.5	3.5	7.0	550	400
14C----- Chester	125	75	5.0	3.5	7.0	520	370
14D----- Chester	110	65	4.5	3.0	6.0	470	300
14E, 15C, 15D, 15E----- Chester	---	---	---	---	---	450	250
16----- Chewacla	100	---	---	4.0	9.5	---	---
17----- Craigsville	75	50	2.0	1.8	4.5	---	---
18B----- Creedmoor	75	75	---	2.5	5.0	---	---
19B----- Cullen	120	80	4.0	3.8	9.1	520	450
19C----- Cullen	115	70	3.7	3.6	8.7	500	420
19D----- Cullen	90	55	---	3.0	8.0	450	370
20B3----- Cullen	110	65	3.7	3.2	8.3	460	380
20C3----- Cullen	80	50	3.0	2.8	7.6	420	340
20D3----- Cullen	---	---	---	2.2	6.0	350	250
21B----- Culpeper	115	80	4.2	3.5	8.5	---	---
21C----- Culpeper	105	75	4.0	3.0	7.5	---	---
21D----- Culpeper	90	70	3.6	2.8	7.1	---	---
22C3----- Culpeper	75	60	2.7	2.0	6.5	---	---
23B, 23C----- Davidson	125	70	5.5	5.5	9.5	550	500
24B----- Dogue	115	70	---	3.5	7.0	---	---
25B----- Dyke	125	70	5.5	5.5	9.0	560	510
25C----- Dyke	120	60	5.0	5.0	8.5	510	500
26B3----- Dyke	120	---	4.0	5.0	8.5	550	500

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass-legume hay	Pasture	Apples	Peaches
	<u>Bu</u>	<u>Bu</u>	<u>Ton</u>	<u>Ton</u>	<u>AUM*</u>	<u>Bu</u>	<u>Bu</u>
26C3----- Dyke	85	---	3.7	3.5	6.0	500	450
26D3----- Dyke	---	---	---	4.5	7.5	450	400
27B----- Elioak	120	80	4.5	3.5	9.5	450	320
27C----- Elioak	110	75	4.0	3.5	9.0	430	300
27D----- Elioak	90	65	---	3.0	8.5	---	---
28C3----- Elioak	90	65	3.5	3.0	8.5	---	---
28D3----- Elioak	---	---	---	2.5	7.5	---	---
29B----- Fauquier	110	80	4.5	4.0	8.5	450	320
29C----- Fauquier	100	75	4.0	3.5	8.0	430	300
29D----- Fauquier	90	65	3.0	3.0	7.0	430	250
29E----- Fauquier	---	---	---	---	---	---	---
30C3----- Fauquier	85	65	3.7	3.0	8.5	---	---
30D3----- Fauquier	---	---	---	2.5	7.5	---	---
31C, 31D----- Fauquier	---	---	---	2.0	7.0	430	300
32B----- Fluvanna	110	65	---	3.0	8.0	---	---
32C----- Fluvanna	100	50	---	3.0	8.0	---	---
33C----- Fluvanna	---	---	---	2.5	7.0	---	---
34B----- Glenelg	120	80	4.5	3.5	8.0	---	---
34C----- Glenelg	110	75	4.0	3.5	7.0	---	---
34D----- Glenelg	90	65	3.5	3.0	6.0	---	---
34E----- Glenelg	---	---	---	---	5.0	---	---
35C----- Hartleton-Cataska	---	---	---	---	---	---	---
36B----- Hayesville	115	80	4.5	3.6	8.0	520	420

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass- legume hay	Pasture	Apples	Peaches
	<u>Bu</u>	<u>Bu</u>	<u>Ton</u>	<u>Ton</u>	<u>AUM*</u>	<u>Bu</u>	<u>Bu</u>
36C----- Hayesville	80	50	3.2	3.0	7.0	500	400
36D----- Hayesville	---	---	---	2.5	6.0	440	300
36E----- Hayesville	---	---	---	---	4.5	360	200
37B3----- Hayesville	75	50	3.2	3.0	6.5	500	380
37C3----- Hayesville	---	---	2.6	2.2	6.5	440	300
37D3----- Hayesville	---	---	---	2.0	5.0	300	210
37E3----- Hayesville	---	---	---	---	4.0	250	---
38C----- Hayesville	---	---	---	---	5.0	420	320
38D, 38E----- Hayesville	---	---	---	---	4.0	370	240
39C----- Hazel	---	---	---	2.0	3.5	---	---
39D----- Hazel	---	---	---	2.0	3.0	---	---
39E----- Hazel	---	---	---	---	2.5	---	---
40D----- Hazel	---	---	---	---	3.0	---	---
40E----- Hazel	---	---	---	---	2.5	---	---
41B----- Hiwassee	110	90	4.5	3.9	6.5	550	500
41C----- Hiwassee	100	70	4.0	3.3	5.5	500	450
42B3----- Hiwassee	105	70	4.2	3.3	5.5	480	400
42C3----- Hiwassee	95	70	3.8	3.3	5.5	420	350
42D3----- Hiwassee	---	---	---	3.0	5.0	370	250
43B----- Klinesville	60	55	2.5	2.0	5.0	---	---
43C----- Klinesville	---	50	2.5	2.0	5.0	---	---
43D----- Klinesville	---	---	---	2.0	4.5	---	---
43E----- Klinesville	---	---	---	---	---	---	---

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass- legume hay	Pasture	Apples	Peaches
	Bu	Bu	Ton	Ton	AUM#	Bu	Bu
44C, 44D----- Lew	---	---	---	---	3.0	450	260
45C, 45D----- Lew	---	---	---	---	3.0	430	230
46B----- Lignum	100	50	---	2.5	7.0	---	---
47C----- Louisburg	---	45	---	2.0	4.0	---	---
47D, 47E, 48D, 48E----- Louisburg	---	---	---	---	3.0	---	---
49B----- Manassas	130	80	---	3.5	6.0	---	---
50D----- Manor	80	55	3.0	2.0	5.5	---	---
50E----- Manor	---	---	---	---	4.0	---	---
51B----- Manteo	---	35	---	1.5	2.5	---	---
51C----- Manteo	---	---	---	---	2.0	---	---
51D, 51E----- Manteo	---	---	---	---	---	---	---
52D, 52E----- Manteo	---	---	---	---	---	---	---
53B----- Masada	120	75	4.5	4.0	8.5	---	---
53C----- Masada	110	75	4.5	3.5	8.0	---	---
54B----- Mayodan	95	85	---	4.8	8.0	---	---
54C----- Mayodan	75	60	---	4.2	7.0	---	---
55B----- McQueen	120	75	---	4.5	9.0	---	---
56B----- Meadowville	125	75	4.2	3.8	6.5	---	---
56C----- Meadowville	120	70	4.2	3.8	6.5	---	---
57B----- Mount Lucas	105	70	4.0	3.0	7.5	---	---
58B----- Myersville	100	80	4.0	3.5	7.0	520	450
58C----- Myersville	90	75	3.7	3.5	7.0	480	400
58D----- Myersville	110	65	---	3.0	6.0	450	350

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass- legume hay	Pasture	Apples	Peaches
	<u>Bu</u>	<u>Bu</u>	<u>Ton</u>	<u>Ton</u>	<u>AUM*</u>	<u>Bu</u>	<u>Bu</u>
58E, 59C, 59D, 59E----- Myersville	---	---	---	---	6.0	440	280
60C, 60D----- Myersville-Catoctin	---	---	---	---	6.0	420	230
60E----- Myersville-Catoctin	---	---	---	---	5.0	360	---
61D----- Myersville-Rock outcrop	---	---	---	---	5.0	400	---
61E----- Myersville-Rock outcrop	---	---	---	---	5.0	360	---
62B----- Nason	90	70	---	3.0	8.0	---	---
62C----- Nason	85	65	---	2.5	7.5	---	---
62D----- Nason	65	60	---	2.5	7.5	---	---
63B----- Orange	80	50	---	3.0	6.5	---	---
64B----- Orange	---	---	---	---	6.0	---	---
65B----- Pacolet	80	65	---	4.0	8.0	---	---
65C----- Pacolet	65	55	---	3.5	7.0	---	---
66C, 66D----- Parker	---	---	---	---	5.5	420	280
66E----- Parker	---	---	---	---	5.0	350	200
67D, 67E----- Parker	---	---	---	---	4.5	300	---
68B----- Penn	95	65	3.5	3.0	6.5	---	---
68C----- Penn	90	60	3.0	2.5	5.5	---	---
68D----- Penn	80	55	3.0	2.0	4.5	---	---
69**. Pits	---	---	---	---	---	---	---
70C----- Porters	---	---	---	---	6.0	520	340
70D----- Porters	---	---	---	---	5.0	500	270
70E----- Porters	---	---	---	---	4.0	450	---
71B----- Rabun	120	70	4.2	5.0	9.0	550	500

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass-legume hay	Pasture	Apples	Peaches
	Bu	Bu	Ton	Ton	AUM#	Bu	Bu
71C, 71D----- Rabun	100	60	3.7	4.0	8.0	500	450
71E----- Rabun	---	---	---	3.0	6.0	380	---
72B3----- Rabun	95	---	---	5.0	9.0	500	450
72C3----- Rabun	80	---	---	4.0	7.5	450	400
72D3----- Rabun	---	---	---	3.0	6.0	300	---
72E3, 73C, 73D, 73E----- Rabun	---	---	---	---	4.5	250	---
74B----- Rapidan	120	75	4.5	4.3	9.0	---	---
74C----- Rapidan	110	65	4.0	4.0	8.0	---	---
74D----- Rapidan	85	60	3.7	3.0	7.0	---	---
75C3----- Rapidan	85	60	3.7	3.0	7.0	---	---
75D3----- Rapidan	---	---	---	---	6.0	---	---
76----- Riverview	115	---	---	3.5	7.0	---	---
77----- Riverview-Chewacla	90	---	---	3.0	6.5	---	---
78----- Rowland	120	80	---	3.5	8.5	---	---
79B----- Starr	110	75	---	4.5	8.5	---	---
80B----- Tatum	90	70	4.0	3.0	8.0	---	---
80C----- Tatum	85	65	3.5	2.5	7.5	---	---
81B----- Thurmont	125	---	---	4.5	8.0	350	340
81C----- Thurmont	115	---	---	4.0	7.5	325	300
81D----- Thurmont	100	---	---	4.0	7.5	300	280
82C----- Thurmont	---	---	---	---	7.5	240	200
82D----- Thurmont	---	---	---	---	7.0	200	150
83----- Toccoa	110	---	---	4.0	8.0	---	---

See footnotes at end of table.

TABLE 6.--YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Soil name and map symbol	Corn	Oats	Alfalfa hay	Grass- legume hay	Pasture	Apples	Peaches
	Bu	Bu	Ton	Ton	AUM*	Bu	Bu
84B----- Totier	125	75	5.5	4.0	9.0	---	---
84C----- Totier	110	65	5.0	3.5	8.0	---	---
85C3----- Totier	100	55	4.7	4.0	7.5	---	---
86B----- Turbeville	120	75	4.5	4.0	8.5	---	---
86C----- Turbeville	110	75	4.5	3.5	7.5	---	---
87B----- Tusquitee	110	75	---	4.0	8.0	350	350
87C----- Tusquitee	90	60	---	3.5	7.0	400	380
87D----- Tusquitee	---	---	---	2.5	5.0	450	400
88. Udorthents							
89B----- Unison	120	---	5.0	5.0	9.2	500	450
89C----- Unison	115	---	4.5	4.7	9.2	475	430
90B, 90C, 90D----- Unison	---	---	---	---	3.0	430	390
91**. Urban land							
92----- Wahee	110	70	---	---	---	---	---
93C----- Watt	60	40	---	---	5.0	---	---
93D----- Watt	---	---	---	---	4.0	---	---
93E----- Watt	---	---	---	---	2.5	---	---
94B----- Wedowee	80	80	---	---	---	---	---
94C----- Wedowee	60	70	---	---	---	---	---
95----- Wehadkee	75	---	---	---	9.5	---	---
96B----- Worsham	75	---	---	2.0	5.0	---	---

* Animal-unit-month: The amount of forage or feed required to feed one animal unit (one cow, one horse, one mule, five sheep, or five goats) for 30 days.

** See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY

[Only the soils suitable for production of commercial trees are listed. Absence of an entry indicates that information was not available].

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
1B----- Abell	2o	Slight	Slight	Slight	Slight	Northern red oak----- Yellow-poplar----- Loblolly pine----- Shortleaf pine----- Virginia pine-----	80 90 90 80 80	Loblolly pine, yellow- poplar, black walnut.
2B, 2C----- Albemarle	3o	Slight	Slight	Slight	Slight	Northern red oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	75 80 72 75	Virginia pine, yellow- poplar, loblolly pine.
2D----- Albemarle	3r	Moderate	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	75 80 72 75	Virginia pine, yellow- poplar, loblolly pine.
3C----- Albemarle	3o	Slight	Slight	Slight	Slight	Northern red oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	75 80 72 75	Virginia pine, yellow- poplar, loblolly pine.
3D----- Albemarle	3r	Moderate	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	75 80 72 75	Virginia pine, yellow- poplar, loblolly pine.
4B, 4C----- Ashe	3o	Slight	Slight	Slight	Slight	Chestnut oak----- Scarlet oak----- Yellow-poplar----- Eastern white pine-- Northern red oak----- Pitch pine----- Shortleaf pine----- Virginia pine-----	--- --- 78 84 --- --- 66 66	Loblolly pine, Virginia pine.
4D, 4E----- Ashe	3r	Moderate	Moderate	Moderate	Slight	Chestnut oak----- Scarlet oak----- Yellow-poplar----- Eastern white pine-- Northern red oak----- Pitch pine----- Shortleaf pine----- Virginia pine-----	--- --- 78 84 --- --- 66 66	Loblolly pine, Virginia pine.
5B----- Belvoir	3w	Slight	Moderate	Slight	Slight	Loblolly pine----- Red maple----- Sweetgum----- Yellow-poplar-----	80 66 80 80	Loblolly pine, sweetgum, yellow- poplar.
6----- Bermudian	1o	Slight	Slight	Slight	Slight	Northern red oak----- Yellow-poplar----- Sweetgum-----	86 96 96	Yellow-poplar, black walnut.
7B, 7C, 8C3----- Braddock	2c	Slight	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar----- Eastern white pine-- Virginia pine-----	80 90 95 76	Yellow-poplar, eastern white pine.
7D----- Braddock	2r	Moderate	Severe	Slight	Slight	Northern red oak----- Yellow-poplar----- Eastern white pine--	80 90 95	Yellow-poplar, eastern white pine.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
9B, 9C----- Braddock	2c	Slight	Moderate	Slight	Slight	Northern red oak---- Yellow-poplar----- Eastern white pine--	80 90 95	Yellow-poplar, eastern white pine.
9D----- Braddock	2r	Severe	Severe	Slight	Slight	Northern red oak---- Yellow-poplar----- Eastern white pine--	70 80 85	Yellow-poplar, white pine.
10----- Buncombe	2s	Slight	Moderate	Moderate	Slight	American sycamore--- Sweetgum----- Loblolly pine----- Yellow-poplar-----	90 90 90 95	Loblolly pine, American sycamore.
11D*: Cataska-----	5f	Moderate	Moderate	Severe	Severe	Chestnut oak----- Scarlet oak----- Pitch pine-----	50 50 50	Pitch pine, Virginia pine.
Hartleton-----	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Virginia pine-----	80 70	Red pine, Virginia pine.
11E*: Cataska-----	5f	Moderate	Moderate	Severe	Severe	Chestnut oak----- Scarlet oak----- Pitch pine-----	50 50 50	Pitch pine, Virginia pine.
Hartleton-----	3r	Slight	Moderate	Slight	Slight	Eastern white pine-- Virginia pine-----	80 70	Virginia pine, red pine.
12C----- Catoctin	4f	Slight	Slight	Moderate	Slight	Virginia pine----- Shortleaf pine----- Yellow-poplar-----	60 60 70	Virginia pine, eastern white pine.
12D----- Catoctin	4f	Moderate	Moderate	Moderate	Slight	Virginia pine----- Shortleaf pine----- Yellow-poplar-----	60 60 70	Virginia pine, eastern white pine.
12E----- Catoctin	4r	Severe	Severe	Moderate	Slight	Virginia pine----- Shortleaf pine----- Yellow-poplar-----	60 60 70	Virginia pine, eastern white pine.
13C----- Catoctin	4f	Slight	Slight	Moderate	Slight	Virginia pine----- Shortleaf pine----- Northern red oak---- Yellow-poplar-----	60 60 60 70	Virginia pine, eastern white pine.
13D----- Catoctin	4f	Moderate	Moderate	Moderate	Slight	Virginia pine----- Shortleaf pine----- Northern red oak---- Yellow-poplar-----	60 60 60 70	Virginia pine, eastern white pine.
13E----- Catoctin	4r	Severe	Severe	Moderate	Slight	Virginia pine----- Shortleaf pine----- Northern red oak---- Yellow-poplar-----	60 60 60 70	Virginia pine, eastern white pine.
14B, 14C----- Chester	2o	Slight	Slight	Slight	Slight	Chestnut oak----- Yellow-poplar----- Virginia pine-----	77 86 80	Black walnut, yellow-poplar, eastern white pine.
14D----- Chester	2r	Moderate	Moderate	Slight	Slight	Chestnut oak----- Yellow-poplar----- Virginia pine-----	77 86 80	Black walnut, yellow-poplar, eastern white pine.
14E----- Chester	2r	Severe	Severe	Slight	Slight	Shortleaf pine-----	80	Loblolly pine.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
15C----- Chester	2x	Slight	Moderate	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	77 86 80 80	Black walnut, yellow-poplar.
15D----- Chester	2x	Moderate	Moderate	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	77 86 80 80	Black walnut, yellow-poplar.
15E----- Chester	2x	Severe	Severe	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	77 86 80 80	Black walnut, yellow-poplar.
16----- Chewacla	1w	Slight	Moderate	Slight	Slight	Loblolly pine----- Yellow-poplar----- American sycamore---- Sweetgum----- Water oak----- Eastern cottonwood-- Green ash----- Southern red oak----	96 100 --- 97 86 --- --- ---	Loblolly pine, American sycamore, yellow-poplar, sweetgum.
17----- Craigsville	2o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar----- Eastern white pine-- Virginia pine-----	80 95 90 80	Loblolly pine, eastern white pine, yellow-poplar.
18B----- Creedmoor	3w	Slight	Moderate	Slight	Slight	Loblolly pine----- Shortleaf pine----- Sweetgum----- Water oak-----	84 66 --- ---	Loblolly pine, sweetgum, yellow-poplar.
19B, 19C----- Cullen	3o	Slight	Slight	Slight	Slight	Loblolly pine----- Shortleaf pine----- Virginia pine----- Yellow-poplar----- White oak----- Northern red oak----	80 70 70 70 60 70	Loblolly pine, Virginia pine, yellow-poplar.
19D----- Cullen	3r	Moderate	Moderate	Slight	Slight	Loblolly pine----- Shortleaf pine----- Virginia pine----- Yellow-poplar----- White oak----- Northern red oak----	80 70 70 80 70 70	Loblolly pine, Virginia pine, yellow-poplar.
20B3, 20C3----- Cullen	4c	Moderate	Moderate	Moderate	Slight	Loblolly pine----- Shortleaf pine----- Virginia pine----- White oak----- Northern red oak----	70 60 65 60 60	Loblolly pine.
20D3----- Cullen	4c	Severe	Severe	Moderate	Slight	Loblolly pine----- Shortleaf pine----- Virginia pine----- White oak----- Northern red oak----	70 60 65 60 60	Loblolly pine.
21B, 21C----- Culpeper	3o	Slight	Slight	Slight	Slight	Virginia pine----- Shortleaf pine----- Yellow-poplar----- Northern red oak----	66 66 85 70	Loblolly pine, yellow-poplar.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
21D----- Culpeper	3r	Moderate	Moderate	Slight	Slight	Virginia pine----- Shortleaf pine----- Yellow-poplar----- Northern red oak-----	66 66 85 70	Loblolly pine, yellow-poplar.
22C3----- Culpeper	4c	Slight	Moderate	Slight	Slight	Shortleaf pine----- Virginia pine----- Northern red oak-----	60 60 60	Loblolly pine, yellow-poplar.
23B, 23C----- Davidson	3c	Moderate	Slight	Slight	Slight	Loblolly pine----- Shortleaf pine----- Northern red oak----- Southern red oak----- Sweetgum----- White oak----- Yellow-poplar-----	81 68 85 72 80 71 80	Loblolly pine, yellow- poplar, black walnut.
24B----- Dogue	2w	Slight	Moderate	Slight	Slight	Loblolly pine----- Southern red oak----- Sweetgum----- Yellow-poplar----- White oak-----	90 80 90 93 80	Loblolly pine.
25B, 25C, 26B3, 26C3----- Dyke	2c	Slight	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	85 95 80 80	Yellow-poplar, loblolly pine, northern red oak, black walnut.
26D3----- Dyke	2c	Moderate	Severe	Slight	Slight	Northern red oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	85 95 80 80	Yellow-poplar, loblolly pine, northern red oak, black walnut.
27B, 27C----- Elioak	2c	Slight	Moderate	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	80 90 76 76	Loblolly pine, yellow- poplar.
27D----- Elioak	2c	Moderate	Severe	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	80 90 76 76	Loblolly pine, yellow- poplar.
28C3----- Elioak	2c	Slight	Moderate	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	80 90 76 76	Loblolly pine, yellow- poplar.
28D3----- Elioak	2c	Moderate	Severe	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	80 90 76 76	Loblolly pine, yellow- poplar.
29B, 29C----- Fauquier	1c	Slight	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar-----	95 120	Yellow-poplar, black walnut, loblolly pine.
29D----- Fauquier	1c	Moderate	Severe	Slight	Slight	Northern red oak----- Yellow-poplar-----	95 120	Yellow-poplar, black walnut, loblolly pine.
29E----- Fauquier	1c	Severe	Severe	Slight	Slight	Northern red oak----- Yellow-poplar-----	95 120	Yellow-poplar, black walnut, loblolly pine.
30C3----- Fauquier	3c	Slight	Moderate	Slight	Slight	Northern red oak----- Virginia pine-----	66 70	Virginia pine, loblolly pine,

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
30D3----- Fauquier	3c	Moderate	Severe	Moderate	Slight	Northern red oak----- Virginia pine-----	66 70	Virginia pine, loblolly pine.
31C----- Fauquier	1c	Slight	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar-----	95 120	Yellow-poplar, black walnut, loblolly pine.
31D----- Fauquier	1c	Moderate	Severe	Slight	Slight	Northern red oak----- Yellow-poplar-----	95 120	Yellow-poplar, black walnut, loblolly
32B, 32C----- Fluvanna	3o	Slight	Slight	Slight	Slight	Virginia pine----- Shortleaf pine-----	74 66	Loblolly pine, Virginia pine.
33C----- Fluvanna	3o	Slight	Slight	Slight	Slight	Northern red oak----- Virginia pine----- Shortleaf pine----- Northern red oak-----	70 74 66 70	Loblolly pine, Virginia pine.
34B, 34C----- Glennelg	2o	Slight	Slight	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	78 87 70 70	Black walnut, loblolly pine, yellow-poplar, Virginia pine. Japanese larch.
34D----- Glennelg	2r	Moderate	Moderate	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	78 87 70 70	Black walnut, loblolly pine, yellow-poplar, Virginia pine.
34E----- Glennelg	2r	Severe	Severe	Slight	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	78 87 70 70	Black walnut, loblolly pine, yellow-poplar, Virginia pine.
35C*: Hartleton-----	3f	Slight	Slight	Slight	Slight	Northern red oak----- Chestnut oak-----	70 70	Virginia pine, eastern white pine.
Cataska-----	5f	Moderate	Slight	Severe	Severe	Chestnut oak----- Scarlet oak----- Pitch pine-----	50 50 50	Pitch pine.
36B, 36C----- Hayesville	2o	Slight	Slight	Slight	Slight	Pitch pine----- Shortleaf pine----- Virginia pine----- Eastern white pine-- Northern red oak----- Yellow-poplar-----	81 76 76 86 76 93	Shortleaf pine, eastern white pine, yellow-poplar.
36D----- Hayesville	2r	Slight	Moderate	Slight	Slight	Pitch pine----- Shortleaf pine----- Virginia pine----- Eastern white pine-- Northern red oak----- Yellow-poplar-----	81 76 70 86 76 93	Shortleaf pine, eastern white pine, yellow-poplar.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
37B3, 37C3----- Hayesville	2o	Slight	Slight	Slight	Slight	Pitch pine-----	81	Shortleaf pine, eastern white pine, yellow-poplar.
						Shortleaf pine-----	76	
						Virginia pine-----	76	
						Eastern white pine--	86	
						Northern red oak----	76	
Yellow-poplar-----	93							
37D3, 37E3----- Hayesville	2r	Slight	Moderate	Slight	Slight	Pitch pine-----	81	Shortleaf pine, eastern white pine, yellow-poplar.
						Shortleaf pine-----	76	
						Virginia pine-----	76	
						Eastern white pine--	86	
						Northern red oak----	76	
Yellow-poplar-----	93							
38C----- Hayesville	2o	Slight	Slight	Slight	Slight	Shortleaf pine-----	76	Loblolly pine, yellow-poplar.
						Virginia pine-----	76	
						Northern red oak----	76	
						Yellow-poplar-----	93	
38D----- Hayesville	2r	Moderate	Moderate	Slight	Slight	Shortleaf pine-----	76	Loblolly pine, yellow-poplar.
						Virginia pine-----	76	
						Northern red oak----	76	
						Yellow-poplar-----	93	
38E----- Hayesville	2r	Severe	Severe	Slight	Slight	Shortleaf pine-----	76	Loblolly pine, yellow-poplar.
						Virginia pine-----	76	
						Northern red oak----	76	
						Yellow-poplar-----	93	
39C----- Hazel	4d	Slight	Slight	Moderate	Slight	Northern red oak----	60	Red pine, eastern white pine.
						Virginia pine-----	60	
39D----- Hazel	4d	Moderate	Moderate	Moderate	Slight	Northern red oak----	60	Red pine, eastern white pine.
						Virginia pine-----	60	
39E----- Hazel	4d	Severe	Severe	Moderate	Slight	Northern red oak----	60	Red pine, eastern white pine.
						Virginia pine-----	60	
40D----- Hazel	4d	Moderate	Moderate	Moderate	Slight	Northern red oak----	60	Virginia pine, red pine, eastern white pine.
						Virginia pine-----	60	
40E----- Hazel	4d	Severe	Severe	Moderate	Slight	Northern red oak----	60	Virginia pine, red pine, eastern white pine.
						Virginia pine-----	60	
41B, 41C----- Hiwassee	3o	Slight	Slight	Slight	Slight	Loblolly pine-----	76	Loblolly pine, yellow- poplar.
						Northern red oak----	70	
						Shortleaf pine-----	70	
						White oak-----	70	
						Yellow-poplar-----	85	
42B3, 42C3----- Hiwassee	4c	Moderate	Moderate	Moderate	Slight	Loblolly pine-----	70	Loblolly pine, Virginia pine.
						Shortleaf pine-----	60	
42D3----- Hiwassee	4c	Slight	Moderate	Moderate	Slight	Loblolly pine-----	75	Loblolly pine, yellow- poplar.
						Northern red oak----	60	
						Shortleaf pine-----	60	
						White oak-----	60	
						Yellow-poplar-----	75	
43B, 43C----- Klinesville	4d	Slight	Slight	Moderate	Slight	Northern red oak----	60	Virginia pine, loblolly pine.
						Virginia pine-----	60	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
43D----- Klinsville	5d	Slight	Moderate	Moderate	Slight	Northern red oak----- Virginia pine-----	60 60	Virginia pine, eastern white pine, red pine, pitch pine.
43E----- Klinsville	5d	Moderate	Severe	Moderate	Slight	Northern red oak----- Virginia pine-----	60 60	Virginia pine, eastern white pine, red pine, pitch pine.
44C----- Lew	2o	Slight	Slight	Slight	Slight	Northern red oak----- Yellow-poplar----- Eastern white pine--	80 90 90	Yellow-poplar, eastern white pine.
44D----- Lew	2r	Slight	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar----- Eastern white pine--	80 90 90	Yellow-poplar, eastern white pine.
45C----- Lew	2x	Slight	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar----- Eastern white pine--	80 90 90	Yellow-poplar, eastern white pine.
45D----- Lew	2x	Slight	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar----- Eastern white pine--	80 90 90	Yellow-poplar, eastern white pine.
46B----- Lignum	3w	Slight	Moderate	Moderate	Slight	Virginia pine----- Shortleaf pine----- Southern red oak----- Loblolly pine-----	74 66 68 76	Loblolly pine, sweetgum.
47C----- Louisburg	3o	Slight	Slight	Slight	Slight	Loblolly pine----- Shortleaf pine----- Southern red oak----- Yellow-poplar----- Virginia pine----- White oak-----	77 69 72 84 71 68	Loblolly pine, Virginia pine.
47D, 47E----- Louisburg	3r	Moderate	Moderate	Slight	Slight	Loblolly pine----- Shortleaf pine----- Southern red oak----- Yellow-poplar----- Virginia pine----- White oak-----	77 69 72 84 71 68	Loblolly pine, Virginia pine.
48D, 48E----- Louisburg	3x	Moderate	Severe	Slight	Slight	Loblolly pine----- Shortleaf pine----- Southern red oak----- Yellow-poplar----- Virginia pine----- White oak-----	77 69 70 84 71 68	Loblolly pine, Virginia pine.
49B----- Manassas	2o	Slight	Slight	Slight	Slight	Virginia pine----- Northern red oak----- Shortleaf pine----- Yellow-poplar-----	76 80 80 90	Loblolly pine, yellow-poplar.
50D----- Manor	2r	Severe	Moderate	Moderate	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	80 90 80 80	Yellow-poplar, eastern white pine, loblolly pine.
50E----- Manor	2r	Severe	Severe	Moderate	Slight	Black oak----- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	80 90 80 80	Yellow-poplar, eastern white pine, loblolly pine.
51B, 51C----- Manteo	4d	Slight	Slight	Severe	Moderate	Virginia pine----- Shortleaf pine----- Northern red oak-----	65 60 65	Loblolly pine, shortleaf pine.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
51D----- Manteo	4d	Slight	Moderate	Severe	Moderate	Virginia pine----- Shortleaf pine----- Northern red oak----	65 60 65	Loblolly pine, shortleaf pine.
51E----- Manteo	4d	Moderate	Severe	Severe	Moderate	Virginia pine----- Shortleaf pine----- Northern red oak----	65 60 65	Loblolly pine, shortleaf pine.
52D----- Manteo	4d	Slight	Moderate	Severe	Moderate	Virginia pine----- Shortleaf pine----- Northern red oak----	65 60 65	Loblolly pine, shortleaf pine.
52E----- Manteo	4d	Moderate	Severe	Severe	Moderate	Virginia pine----- Shortleaf pine----- Northern red oak----	65 60 65	Loblolly pine, shortleaf pine.
53B, 53C----- Masada	3o	Slight	Slight	Slight	Slight	Southern red oak---- Virginia pine----- Shortleaf pine----- Yellow-poplar----- Eastern white pine-- Loblolly pine-----	70 70 70 85 80 82	Loblolly pine, yellow-poplar.
54B, 54C----- Mayodan	3o	Slight	Slight	Slight	Slight	Loblolly pine----- Shortleaf pine----- Yellow-poplar-----	82 75 79	Loblolly pine, Virginia pine, yellow-poplar.
55B----- McQueen	3o	Slight	Slight	Slight	Slight	Yellow-poplar----- Loblolly pine----- Shortleaf pine----- Sweetgum-----	80 80 70 80	Yellow-poplar, loblolly pine.
56B, 56C----- Meadowville	2o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar----- Virginia pine----- Loblolly pine-----	76 90 80 90	Loblolly pine, yellow-poplar, black walnut.
57B----- Mount Lucas	2w	Slight	Moderate	Slight	Slight	Northern red oak---- Yellow-poplar----- Virginia pine-----	80 90 76	Yellow-poplar, Virginia pine.
58B, 58C----- Myersville	1o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar-----	86 96	Yellow-poplar, black walnut, loblolly pine.
58D, 58E----- Myersville	2r	Moderate	Moderate	Slight	Slight	Northern red oak---- Yellow-poplar-----	85 95	Yellow-poplar, black walnut, loblolly pine.
59C----- Myersville	1o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar-----	86 96	Yellow-poplar, black walnut, loblolly pine.
59D----- Myersville	2r	Moderate	Moderate	Slight	Slight	Northern red oak---- Yellow-poplar-----	85 95	Yellow-poplar, black walnut, loblolly pine.
59E----- Myersville	2r	Severe	Severe	Slight	Slight	Northern red oak---- Yellow-poplar-----	85 95	Yellow-poplar, black walnut, loblolly pine.
60C*: Myersville-----	1o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar-----	86 96	Yellow-poplar, black walnut, loblolly pine.
Catoctin-----	4f	Slight	Slight	Moderate	Slight	Virginia pine----- Shortleaf pine----- Northern red oak---- Yellow-poplar-----	60 60 60 70	Virginia pine, eastern white pine, black walnut.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
60D*: Myersville-----	2r	Moderate	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar-----	85 95	Yellow-poplar, black walnut, loblolly pine.
Catoctin-----	4f	Moderate	Moderate	Moderate	Slight	Virginia pine----- Shortleaf pine----- Northern red oak----- Yellow-poplar-----	60 60 60 70	Virginia pine, eastern white pine.
60E*: Myersville-----	2r	Severe	Severe	Slight	Slight	Northern red oak----- Yellow-poplar-----	85 95	Yellow-poplar, black walnut, loblolly pine.
Catoctin-----	4r	Severe	Severe	Moderate	Slight	Virginia pine----- Shortleaf pine----- Northern red oak----- Yellow-poplar-----	60 60 60 70	Virginia pine, eastern white pine.
61D*: Myersville-----	2r	Moderate	Moderate	Slight	Slight	Northern red oak----- Yellow-poplar-----	85 95	Yellow-poplar, black walnut, loblolly pine.
Rock outcrop.								
61E*: Myersville-----	2r	Severe	Severe	Slight	Slight	Northern red oak----- Yellow-poplar-----	85 95	Yellow-poplar, black walnut, loblolly pine.
Rock outcrop.								
62B, 62C----- Nason	3o	Slight	Slight	Slight	Slight	Northern red oak----- Virginia pine----- Shortleaf pine----- Loblolly pine-----	66 69 66 80	Loblolly pine, yellow-poplar.
62D----- Nason	3r	Moderate	Moderate	Slight	Slight	Northern red oak----- Virginia pine----- Shortleaf pine----- Loblolly pine-----	66 69 66 80	Loblolly pine, yellow-poplar.
63B, 64B----- Orange	4w	Slight	Moderate	Moderate	Moderate	Northern red oak----- Virginia pine----- Shortleaf pine----- Loblolly pine-----	60 60 60 75	Loblolly pine.
65B, 65C----- Pacolet	3o	Slight	Slight	Slight	Slight	Loblolly pine----- Shortleaf pine----- Yellow-poplar-----	78 70 85	Loblolly pine, yellow-poplar.
66C----- Parker	3f	Slight	Slight	Moderate	Slight	Black oak----- White oak----- Scarlet oak----- Chestnut oak----- Yellow-poplar-----	70 70 --- --- 80	Eastern white pine, yellow-poplar.
66D, 66E----- Parker	3x	Moderate	Moderate	Moderate	Slight	Black oak----- White oak----- Scarlet oak----- Chestnut oak----- Yellow-poplar-----	70 70 --- --- 80	Eastern white pine, yellow-poplar.
67D, 67E----- Parker	3x	Slight	Moderate	Moderate	Slight	Black oak----- White oak----- Scarlet oak----- Chestnut oak----- Yellow-poplar-----	70 70 --- --- 80	Eastern white pine, yellow-poplar.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
68B, 68C----- Penn	3o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	67 76 69 70	Yellow-poplar, loblolly pine.
68D----- Penn	3r	Moderate	Moderate	Slight	Slight	Northern red oak---- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	67 76 69 70	Yellow-poplar, loblolly pine.
70C, 70D----- Porters	2x	Slight	Slight	Slight	Slight	Shortleaf pine----- Virginia pine----- Northern red oak---- Yellow-poplar-----	80 80 76 95	Yellow-poplar, black walnut.
70E----- Porters	2x	Moderate	Moderate	Slight	Slight	Shortleaf pine----- Virginia pine----- Northern red oak---- Yellow-poplar-----	80 80 76 95	Yellow-poplar, black walnut.
71B, 71C----- Rabun	2o	Slight	Slight	Slight	Slight	Eastern white pine--	93	Northern red oak, eastern white pine, yellow-poplar, loblolly pine, black walnut.
71D, 71E----- Rabun	2r	Moderate	Moderate	Slight	Slight	Eastern white pine--	93	Northern red oak, eastern white pine, yellow-poplar, loblolly pine, black walnut.
72B3, 72C3----- Rabun	2c	Slight	Moderate	Moderate	Slight	Yellow-poplar----- Loblolly pine----- Shortleaf pine----- Virginia pine----- Eastern white pine--	95 90 76 76 93	Northern red oak, yellow-poplar, loblolly pine, black walnut.
72D3----- Rabun	2r	Slight	Severe	Moderate	Slight	Yellow-poplar----- Loblolly pine----- Shortleaf pine----- Virginia pine----- Eastern white pine--	95 90 76 76 93	Northern red oak, yellow-poplar, loblolly pine, black walnut.
72E3----- Rabun	2r	Moderate	Severe	Moderate	Slight	Yellow-poplar----- Loblolly pine----- Shortleaf pine----- Virginia pine----- Eastern white pine--	95 90 76 76 93	Northern red oak, yellow-poplar, loblolly pine, black walnut.
73C, 73D----- Rabun	2x	Slight	Moderate	Slight	Slight	Eastern white pine--	93	Northern red oak, eastern white pine, yellow-poplar, loblolly pine, black walnut.
73E----- Rabun	2x	Moderate	Moderate	Slight	Slight	Eastern white pine--	93	Northern red oak, eastern white pine, yellow-poplar, loblolly pine, black walnut.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
74B, 74C----- Rapidan	2c	Slight	Moderate	Slight	Slight	Shortleaf pine-----	80	Loblolly pine, yellow- poplar, black walnut.
						Virginia pine-----	76	
						Northern red oak----	80	
						Yellow-poplar-----	95	
74D----- Rapidan	2c	Moderate	Severe	Slight	Slight	Shortleaf pine-----	80	Loblolly pine, yellow- poplar, black walnut.
						Virginia pine-----	76	
						Northern red oak----	80	
						Yellow-poplar-----	95	
75C3----- Rapidan	3c	Slight	Moderate	Moderate	Slight	Shortleaf pine-----	70	Loblolly pine.
						Northern red oak----	70	
						Virginia pine-----	70	
75D3----- Rapidan	3c	Moderate	Severe	Moderate	Slight	Shortleaf pine-----	70	Loblolly pine.
						Northern red oak----	70	
						Virginia pine-----	70	
76----- Riverview	1w	Slight	Moderate	Moderate	Slight	Yellow-poplar-----	110	Loblolly pine, yellow-poplar, American sycamore.
						Loblolly pine-----	100	
						Sweetgum-----	100	
77*: Riverview-----	1w	Slight	Moderate	Moderate	Slight	Yellow-poplar-----	110	Loblolly pine, yellow-poplar, American sycamore.
						Loblolly pine-----	100	
						Sweetgum-----	100	
Chewacla-----	1w	Slight	Moderate	Slight	Slight	Loblolly pine-----	96	Loblolly pine, American sycamore, yellow-poplar.
						Yellow-poplar-----	100	
						Sweetgum-----	97	
						Water oak-----	86	
						Green ash-----	---	
						Southern red oak----	---	
78----- Rowland	2w	Slight	Moderate	Slight	Slight	Northern red oak----	80	Eastern white pine, yellow-poplar, loblolly pine.
						Yellow-poplar-----	95	
79B----- Starr	1o	Slight	Slight	Slight	Slight	Loblolly pine-----	101	Loblolly pine, eastern white pine, yellow- poplar, black walnut.
						Shortleaf pine-----	86	
						Yellow-poplar-----	103	
						Eastern white pine--	96	
80B, 80C----- Tatum	3o	Slight	Slight	Slight	Slight	Northern red oak----	72	Loblolly pine, eastern white pine, yellow- poplar.
						Virginia pine-----	68	
						Shortleaf pine-----	68	
						Loblolly pine-----	78	
						Yellow-poplar-----	83	
81B, 81C----- Thurmont	2o	Slight	Slight	Slight	Slight	Northern red oak----	76	Eastern white pine, yellow-poplar.
						Yellow-poplar-----	88	
						Eastern white pine--	88	
						Shortleaf pine-----	77	
81D----- Thurmont	2r	Moderate	Moderate	Slight	Slight	Northern red oak----	76	Eastern white pine, yellow-poplar.
						Yellow-poplar-----	88	
						Eastern white pine--	88	
						Shortleaf pine-----	77	

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
82C----- Thurmont	2o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar----- Eastern white pine-- Shortleaf pine-----	76 90 90 77	Eastern white pine, yellow-poplar, black walnut.
82D----- Thurmont	2r	Moderate	Moderate	Slight	Slight	Northern red oak---- Yellow-poplar----- Eastern white pine-- Shortleaf pine-----	76 90 90 77	Eastern white pine, yellow-poplar, black walnut.
83----- Toccoa	1o	Slight	Slight	Slight	Slight	Loblolly pine----- Yellow-poplar----- Sweetgum----- Southern red oak----	96 107 100 ---	Loblolly pine, yellow- poplar.
84B, 84C, 85C3---- Totier	2o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar----- Virginia pine----- Shortleaf pine-----	76 90 76 80	Loblolly pine, yellow- poplar.
86B, 86C----- Turbeville	3o	Slight	Slight	Slight	Slight	Loblolly pine----- Yellow-poplar----- Virginia pine----- Shortleaf pine----- Southern red oak----	80 85 70 70 70	Loblolly pine, yellow- poplar.
87B, 87C----- Tusquitee	2o	Slight	Slight	Slight	Slight	Shortleaf pine----- Eastern white pine-- Northern red oak---- Yellow-poplar----- White oak----- Hickory----- Black locust----- Black walnut-----	76 90 80 95 --- --- --- ---	Northern red oak, eastern white pine, black walnut, yellow-poplar.
87D----- Tusquitee	2r	Moderate	Moderate	Slight	Slight	Shortleaf pine----- Eastern white pine-- Northern red oak---- Yellow-poplar----- White oak----- Hickory----- Black locust----- Black walnut-----	76 90 80 95 --- --- --- ---	Northern red oak, eastern white pine, black walnut, yellow- poplar.
89B, 89C, 90B, 90C- Unison	1o	Slight	Slight	Slight	Slight	Northern red oak---- Yellow-poplar----- Virginia pine-----	86 96 86	Yellow-poplar, black walnut, eastern white pine.
90D----- Unison	1r	Slight	Moderate	Slight	Slight	Northern red oak---- Yellow-poplar----- Virginia pine-----	86 96 86	Yellow-poplar, black walnut, eastern white pine.
92----- Wahee	2w	Slight	Moderate	Moderate	Slight	Loblolly pine----- Sweetgum----- Blackgum----- Water oak----- Swamp chestnut oak-- Willow oak----- Southern red oak----	86 90 --- --- --- --- ---	Loblolly pine.
93C----- Watt	4d	Slight	Slight	Moderate	Moderate	Virginia pine----- Shortleaf pine----- Northern red oak----	60 60 60	Virginia pine, loblolly pine.
93D, 93E----- Watt	4r	Moderate	Moderate	Severe	Moderate	Virginia pine----- Shortleaf pine----- Northern red oak----	60 60 60	Virginia pine, loblolly pine.

See footnote at end of table.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Soil name and map symbol	Ordination symbol	Management concerns				Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Wind-throw hazard	Common trees	Site index	
94B, 94C----- Wedowee	3o	Slight	Slight	Slight	Slight	Loblolly pine----- Virginia pine----- Shortleaf pine----- Southern red oak---- Northern red oak---- White oak-----	80 70 69 70 68 66	Loblolly pine, yellow-poplar.
95----- Wehadkee	1w	Slight	Severe	Severe	-----	Loblolly pine----- Sweetgum----- Yellow-poplar----- Willow oak----- Green ash----- Water oak----- White ash-----	102 93 98 90 96 86 88	Loblolly pine, yellow-poplar.
96B----- Worsham	2w	Slight	Severe	Severe	Slight	Northern red oak---- Virginia pine----- Loblolly pine----- Pin oak----- Yellow-poplar-----	80 80 88 85 91	Loblolly pine, yellow-poplar.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 8.--RECREATIONAL DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
1B----- Abell	Moderate: wetness.	Moderate: wetness.	Moderate: slope, small stones, wetness.	Slight-----	Slight.
2B----- Albemarle	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
2C----- Albemarle	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
2D----- Albemarle	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
3C----- Albemarle	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Severe: erodes easily.	Moderate: large stones, slope.
3D----- Albemarle	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: erodes easily.	Severe: slope.
3E----- Albemarle	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope, erodes easily.	Severe: slope.
4B----- Ashe	Slight-----	Slight-----	Severe: slope.	Slight-----	Moderate: thin layer.
4C----- Ashe	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: thin layer, slope.
4D----- Ashe	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
4E----- Ashe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
5B----- Belvoir	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
6----- Bermudian	Severe: flooding.	Slight-----	Moderate: flooding.	Severe: erodes easily.	Moderate: flooding.
7B----- Braddock	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
7C----- Braddock	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
7D----- Braddock	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
8C3----- Braddock	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
9B----- Braddock	Moderate: large stones.	Moderate: large stones.	Moderate: slope, small stones.	Slight-----	Moderate: large stones.
9C----- Braddock	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: slope.	Slight-----	Moderate: slope, large stones.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
9D----- Braddock	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
10----- Buncombe	Severe: flooding.	Moderate: flooding, too sandy.	Severe: flooding.	Moderate: flooding, too sandy.	Severe: flooding, droughty.
11D*: Cataska-----	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: small stones, slope.
Hartleton-----	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: large stones, slope.	Severe: large stones, slope.
11E*: Cataska-----	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: small stones, slope.
Hartleton-----	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
12C----- Catoctin	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: droughty, slope.
12D----- Catoctin	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
12E----- Catoctin	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
13C----- Catoctin	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.
13D----- Catoctin	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
13E----- Catoctin	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
14B----- Chester	Slight-----	Slight-----	Moderate: slope.	Slight-----	Moderate: large stones.
14C----- Chester	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: large stones, slope.
14D----- Chester	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
14E----- Chester	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
15C----- Chester	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
15D----- Chester	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
15E----- Chester	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
16----- Chewacla	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
17----- Craigsville	Moderate: large stones.	Moderate: large stones.	Severe: large stones.	Moderate: flooding.	Severe: large stones.
18B----- Creedmoor	Severe: percs slowly.	Severe: percs slowly.	Severe: percs slowly.	Moderate: wetness.	Moderate: wetness.
19B----- Cullen	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
19C----- Cullen	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
19D----- Cullen	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
20B3----- Cullen	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
20C3----- Cullen	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
20D3----- Cullen	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
21B----- Culpeper	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
21C----- Culpeper	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
21D----- Culpeper	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
22C3----- Culpeper	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
23B----- Davidson	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
23C----- Davidson	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
24B----- Dogue	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: slope, small stones, wetness.	Moderate: wetness.	Moderate: wetness.
25B----- Dyke	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
25C----- Dyke	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
26B3----- Dyke	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
26C3----- Dyke	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
26D3----- Dyke	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
27B----- Elioak	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Moderate: large stones, droughty.
27C----- Elioak	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: large stones, droughty, slope.
27D----- Elioak	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
28C3----- Elioak	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: large stones, droughty, slope.
28D3----- Elioak	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
29B----- Fauquier	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
29C----- Fauquier	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
29D----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
29E----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
30C3----- Fauquier	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
30D3----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
31C----- Fauquier	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope, small stones.	Slight-----	Moderate: slope, large stones.
31D----- Fauquier	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: slope.	Severe: slope.
32B----- Fluvanna	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight-----	Slight.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
32C----- Fluvanna	Moderate: slope, percs slowly.	Moderate: slope, percs slowly.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
33C----- Fluvanna	Moderate: slope, large stones, percs slowly.	Moderate: slope, large stones, percs slowly.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.
34B----- Glenelg	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
34C----- Glenelg	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
34D----- Glenelg	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
34E----- Glenelg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
35C*: Hartleton-----	Moderate: slope, large stones, small stones.	Moderate: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones.	Severe: large stones.
Cataska-----	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: large stones, slope, small stones.	Moderate: large stones.	Severe: small stones.
36B----- Hayesville	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
36C----- Hayesville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
36D----- Hayesville	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
36E----- Hayesville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
37B3----- Hayesville	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
37C3----- Hayesville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
37D3----- Hayesville	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
37E3----- Hayesville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
38C----- Hayesville	Moderate: slope, large stones.	Moderate: slope.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.
38D----- Hayesville	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
38E----- Hayesville	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
39C----- Hazel	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope, thin layer.
39D----- Hazel	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
39E----- Hazel	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
40D----- Hazel	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: slope.	Severe: slope.
40E----- Hazel	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: slope.
41B----- Hiwassee	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
41C----- Hiwassee	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
42B3----- Hiwassee	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
42C3----- Hiwassee	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
42D3----- Hiwassee	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
43B----- Klinsville	Severe: small stones, depth to rock.	Severe: small stones, depth to rock.	Severe: small stones, depth to rock.	Severe: small stones.	Severe: small stones, thin layer.
43C----- Klinsville	Severe: small stones, depth to rock.	Severe: small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: small stones.	Severe: small stones, thin layer.
43D----- Klinsville	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: small stones.	Severe: small stones, slope, thin layer.
43E----- Klinsville	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones, depth to rock.	Severe: slope, small stones.	Severe: small stones, slope, thin layer.
44C----- Lew	Severe: small stones.	Severe: small stones.	Severe: large stones, slope, small stones.	Severe: large stones, small stones.	Severe: small stones, large stones.
44D----- Lew	Severe: slope, small stones.	Severe: slope, small stones	Severe: large stones, slope, small stones.	Severe: large stones, small stones.	Severe: small stones, large stones, slope.
45C----- Lew	Severe: large stones, small stones.	Severe: large stones, small stones.	Severe: large stones, slope, small stones.	Severe: large stones, small stones.	Severe: small stones, large stones.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
45D----- Lew	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: large stones, small stones.	Severe: small stones, large stones, slope.
46B----- Lignum	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
47C----- Louisburg	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: large stones, slope.
47D----- Louisburg	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
47E----- Louisburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
48D----- Louisburg	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope, large stones.	Severe: large stones, slope.
48E----- Louisburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
49B----- Manassas	Severe: flooding.	Moderate: wetness.	Moderate: slope, wetness.	Moderate: flooding.	Slight.
50D----- Manor	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
50E----- Manor	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
51B----- Manteo	Severe: depth to rock.	Severe: depth to rock.	Severe: small stones, depth to rock.	Slight-----	Severe: thin layer.
51C----- Manteo	Severe: depth to rock.	Severe: depth to rock.	Severe: small stones, slope, depth to rock.	Slight-----	Severe: thin layer.
51D----- Manteo	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: small stones, slope, depth to rock.	Moderate: slope.	Severe: slope, thin layer.
51E----- Manteo	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: small stones, slope, depth to rock.	Severe: slope.	Severe: slope, thin layer.
52D----- Manteo	Severe: slope, small stones, depth to rock.	Small stones, depth to rock.	Severe: small stones, slope, depth to rock.	Moderate: large stones, slope.	Severe: thin layer, small stones, slope.
52E----- Manteo	Severe: slope, small stones, depth to rock.	Small stones, depth to rock.	Severe: small stones, slope, depth to rock.	Severe: slope.	Severe: thin layer, small stones, slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
53B----- Masada	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
53C----- Masada	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
54B----- Mayodan	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
54C----- Mayodan	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
55B----- McQueen	Severe: flooding.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight-----	Slight.
56B----- Meadowville	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
56C----- Meadowville	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
57B----- Mount Lucas	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, erodes easily.	Severe: wetness.
58B----- Myersville	Slight-----	Slight-----	Moderate: slope.	Severe: erodes easily.	Slight.
58C----- Myersville	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
58D----- Myersville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
58E----- Myersville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, erodes easily.	Severe: slope.
59C----- Myersville	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.
59D----- Myersville	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
59E----- Myersville	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
60C*: Myersville-----	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.
Catoctin-----	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Slight-----	Moderate: large stones, slope.
60D*: Myersville-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
60D*: Catoctin-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
60E*: Myersville-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Catoctin-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
61D*: Myersville-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: slope.	Severe: slope.
Rock outcrop.					
61E*: Myersville-----	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Severe: slope.	Severe: slope.
Rock outcrop.					
62B----- Nason	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
62C----- Nason	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
62D----- Nason	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
63B----- Orange	Severe: wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Moderate: wetness, percs slowly.	Moderate: wetness.
64B----- Orange	Severe: wetness.	Moderate: wetness, large stones, percs slowly.	Severe: large stones, wetness.	Moderate: wetness.	Moderate: large stones, wetness.
65B----- Pacolet	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
65C----- Pacolet	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
66C----- Parker	Severe: small stones.	Severe: small stones.	Severe: large stones, slope, small stones.	Severe: small stones.	Severe: small stones.
66D----- Parker	Severe: slope, small stones.	Severe: slope, small stones.	Severe: large stones, slope, small stones.	Severe: small stones.	Severe: small stones, slope.
66E----- Parker	Severe: slope, small stones.	Severe: slope, small stones.	Severe: large stones, slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
67D----- Parker	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: small stones.	Severe: small stones, slope.
67E----- Parker	Severe: slope, large stones, small stones.	Severe: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Severe: slope, small stones.	Severe: small stones, slope.
68B----- Penn	Slight-----	Slight-----	Moderate: slope.	Slight-----	Moderate: thin layer.
68C----- Penn	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: thin layer, slope.
68D----- Penn	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
69*. Pits					
70C----- Porters	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope, small stones.	Slight-----	Severe: large stones.
70D----- Porters	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: slope.	Severe: large stones, slope.
70E----- Porters	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Severe: slope.	Severe: large stones, slope.
71B----- Rabun	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
71C----- Rabun	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
71D----- Rabun	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
71E----- Rabun	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
72B3----- Rabun	Severe: too clayey.	Severe: too clayey.	Severe: too clayey.	Severe: too clayey.	Moderate: too clayey.
72C3----- Rabun	Severe: too clayey.	Severe: too clayey.	Severe: slope, too clayey.	Severe: too clayey.	Moderate: slope, too clayey.
72D3----- Rabun	Severe: slope, too clayey.	Severe: slope, too clayey.	Severe: slope, too clayey.	Severe: too clayey.	Severe: slope.
72E3----- Rabun	Severe: slope, too clayey.	Severe: slope, too clayey.	Severe: slope, too clayey.	Severe: too clayey, slope.	Severe: slope.
73C----- Rabun	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Slight-----	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
73D----- Rabun	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Moderate: slope.	Severe: slope.
73E----- Rabun	Severe: slope.	Severe: slope.	Severe: slope, small stones.	Severe: slope.	Severe: slope.
74B----- Rapidan	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
74C----- Rapidan	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
74D----- Rapidan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
75C3----- Rapidan	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
75D3----- Rapidan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: erodes easily.	Severe: slope.
76----- Riverview	Severe: flooding.	Slight-----	Moderate: flooding.	Slight-----	Moderate: flooding.
77*: Riverview-----	Severe: flooding.	Slight-----	Moderate: flooding.	Slight-----	Moderate: flooding.
Chewacla-----	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
78----- Rowland	Severe: flooding, wetness.	Moderate: wetness, percs slowly.	Severe: wetness.	Severe: erodes easily.	Moderate: wetness, flooding.
79B----- Starr	Severe: flooding.	Slight-----	Moderate: slope, flooding.	Slight-----	Moderate: flooding.
80B----- Tatum	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
80C----- Tatum	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
81B----- Thurmont	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Slight.
81C----- Thurmont	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
81D----- Thurmont	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
82C----- Thurmont	Moderate: slope, large stones, small stones.	Moderate: slope, large stones, small stones.	Severe: large stones, slope, small stones.	Slight-----	Moderate: small stones, large stones, slope.
82D----- Thurmont	Severe: slope.	Severe: slope.	Severe: large stones, slope, small stones.	Moderate: slope.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
83----- Toccoa	Severe: flooding.	Slight-----	Moderate: flooding.	Slight-----	Moderate: flooding.
84B----- Totier	Slight-----	Slight-----	Moderate: slope, small stones.	Severe: erodes easily.	Slight.
84C, 85C3----- Totier	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: erodes easily.	Moderate: slope.
86B----- Turbeville	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Moderate: large stones.
86C----- Turbeville	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: large stones, slope.
87B----- Tusquitee	Slight-----	Slight-----	Severe: slope.	Slight-----	Slight.
87C----- Tusquitee	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
87D----- Tusquitee	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
88. Udorthents					
89B----- Unison	Slight-----	Slight-----	Moderate: slope, small stones.	Slight-----	Moderate: large stones.
89C----- Unison	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: large stones, slope.
90B----- Unison	Moderate: large stones.	Moderate: large stones.	Severe: large stones.	Moderate: large stones.	Moderate: large stones.
90C----- Unison	Moderate: slope, large stones.	Moderate: slope, large stones.	Severe: large stones, slope.	Moderate: large stones.	Moderate: slope, large stones.
90D----- Unison	Severe: slope.	Severe: slope.	Severe: large stones, slope.	Moderate: large stones, slope.	Severe: slope.
91*. Urban land					
92----- Wahee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
93C----- Watt	Moderate: slope, small stones.	Moderate: slope, small stones.	Severe: slope.	Slight-----	Moderate: small stones, large stones, droughty.
93D----- Watt	Severe: slope.	Severe: slope.	Severe: slope.	Moderate: slope.	Severe: slope.
93E----- Watt	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Soil name and map symbol	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
94B----- Wedowee	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
94C----- Wedowee	Moderate: slope.	Moderate: slope.	Severe: slope.	Slight-----	Moderate: slope.
95----- Wehadkee	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
96B----- Worsham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 9.--WILDLIFE HABITAT

[See text for definitions of "good," "fair," "poor," and "very poor." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
1B. Abell										
2B----- Albemarle	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
2C----- Albemarle	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
2D----- Albemarle	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
3C----- Albemarle	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
3D----- Albemarle	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
3E. Albemarle										
4B, 4C, 4D----- Ashe	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
4E----- Ashe	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
5B----- Belvoir	Fair	Good	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
6----- Bermudian	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
7B----- Braddock	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
7C----- Braddock	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
7D----- Braddock	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
8C3----- Braddock	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
9B. Braddock										
9C, 9D----- Braddock	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
10----- Buncombe	Very poor.	Poor	Poor	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
11D*: Cataska----- Hartleton-----	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
11E*: Cataska-----	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
Hartleton.										
12C----- Catoctin	Fair	Good	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.
12D----- Catoctin	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
12E, 13C, 13D, 13E- Catoctin	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
14B----- Chester	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
14C----- Chester	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
14D----- Chester	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
14E, 15C, 15D, 15E- Chester	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
16----- Chewacla	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
17----- Craigsville	Poor	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
18B----- Creedmoor	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
19B----- Cullen	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
19C----- Cullen	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
19D----- Cullen	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
20B3----- Cullen	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
20C3----- Cullen	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
20D3----- Cullen	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
21B----- Culpeper	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
21C----- Culpeper	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
21D----- Culpeper	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
22C3----- Culpeper	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
23B----- Davidson	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
23C----- Davidson	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
24B----- Dogue	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
25B----- Dyke	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
25C----- Dyke	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
26B3----- Dyke	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
26C3----- Dyke	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
26D3----- Dyke	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
27B----- Elioak	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
27C----- Elioak	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
27D----- Elioak	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
28C3----- Elioak	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
28D3----- Elioak	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
29B----- Fauquier	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
29C----- Fauquier	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
29D----- Fauquier	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
29E----- Fauquier	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
30C3----- Fauquier	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
30D3----- Fauquier	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
31C, 31D----- Fauquier	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
32B----- Fluvanna	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
32C----- Fluvanna	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
33C----- Fluvanna	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
34B----- Gleneig	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
34C----- Gleneig	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
34D----- Gleneig	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
34E----- Gleneig	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
35C*: Hartleton-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
Cataska-----	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
36B----- Hayesville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
36C----- Hayesville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
36D----- Hayesville	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
36E. Hayesville										
37B3----- Hayesville	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
37C3----- Hayesville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
37D3----- Hayesville	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
37E3. Hayesville										
38C, 38D, 38E----- Hayesville	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
39C, 39D----- Hazel	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
39E, 40D, 40E----- Hazel	Very poor.	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
41B----- Hiwassee	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
41C----- Hiwassee	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
42B3----- Hiwassee	Fair	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
42C3----- Hiwassee	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
42D3----- Hiwassee	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
43B, 43C, 43D, 43E- Klinesville	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
44C, 44D----- Lew	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
45C, 45D----- Lew	Very poor.	Very poor.	Good	Good	Good	Very poor.	Very poor.	Poor	Fair	Very poor.
46B----- Lignum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
47C----- Louisburg	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
47D, 47E----- Louisburg	Poor	Poor	Fair	Poor	Poor	Very poor.	Very poor.	Poor	Poor	Very poor.
48D, 48E----- Louisburg	Very poor.	Poor	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
49B----- Manassas	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
50D----- Manor	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
50E----- Manor	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
51B, 51C, 51D, 51E, 52D, 52E----- Manteo	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
53B----- Masada	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
53C----- Masada	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
54B----- Mayodan	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
54C----- Mayodan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
55B----- McQueen	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
56B----- Meadowville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
56C----- Meadowville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
57B----- Mount Lucas	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
58B----- Myersville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
58C----- Myersville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
58D----- Myersville	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
58E----- Myersville	Very poor.	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
59C, 59D----- Myersville	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
59E----- Myersville	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
60C*, 60D*: Myersville-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Catoctin-----	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
60E*: Myersville-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Catoctin-----	Very poor.	Poor	Good	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
61D*: Myersville-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Rock outcrop.										
61E*: Myersville-----	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
Rock outcrop.										
62B----- Nason	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
62C----- Nason	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
62D----- Nason	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
63B----- Orange	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
64B----- Orange	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
65B----- Pacolet	Fair	Fair	Fair	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
65C----- Pacolet	Poor	Fair	Poor	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
66C, 66D, 66E, 67D, 67E----- Parker	Very poor.	Very poor.	Fair	Fair	Fair	Very poor.	Very poor.	Poor	Fair	Very poor.
68B----- Penn	Fair	Good	Good	Fair	Fair	Poor	Very poor.	Good	Fair	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
68C----- Penn	Fair	Good	Good	Fair	Fair	Very poor.	Very poor.	Good	Fair	Very poor.
68D----- Penn	Poor	Fair	Good	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
69*. Pits										
70C, 70D----- Porters	Poor	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.
70E----- Porters	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
71B----- Rabun	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
71C----- Rabun	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
71D----- Rabun	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
71E----- Rabun	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
72B3----- Rabun	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
72C3----- Rabun	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
72D3----- Rabun	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
72E3----- Rabun	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
73C. Rabun										
73D----- Rabun	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
73E----- Rabun	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
74B----- Rapidan	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
74C----- Rapidan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
74D----- Rapidan	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
75C3----- Rapidan	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
75D3----- Rapidan	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
76----- Riverview	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba- ceous plants	Hardwood trees	Conif- erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
77*: Riverview-----	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Chewacla-----	Poor	Fair	Fair	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
78----- Rowland	Fair	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
79B----- Starr	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
80B----- Tatum	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
80C----- Tatum	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
81B----- Thurmont	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
81C----- Thurmont	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
81D----- Thurmont	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
82C, 82D----- Thurmont	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
83----- Toccoa	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
84B----- Totier	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
84C, 85C3----- Totier	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
86B----- Turbeville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
86C----- Turbeville	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
87B----- Tusquitee	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
87C----- Tusquitee	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
87D----- Tusquitee	Poor	Fair	Good	Good	Good	Very poor.	Very poor.	Fair	Good	Very poor.
88. Udorthents										
89B----- Unison	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
89C----- Unison	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
90B----- Unison	Very poor.	Poor	Good	Good	Good	Poor	Very poor.	Poor	Good	Very poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Soil name and map symbol	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herba-ceous plants	Hardwood trees	Conif-erous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
90C, 90D----- Unison	Very poor.	Poor	Good	Good	Good	Very poor.	Very poor.	Poor	Good	Very poor.
91*. Urban land										
92----- Wahee	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.
93C----- Watt	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
93D----- Watt	Poor	Fair	Fair	Poor	Poor	Very poor.	Very poor.	Fair	Poor	Very poor.
93E. Watt										
94B----- Wedowee	Fair	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
94C----- Wedowee	Fair	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
95----- Wehadkee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
96B----- Worsham	Poor	Fair	Fair	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 10.--BUILDING SITE DEVELOPMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
1B----- Abell	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Moderate: low strength, wetness.	Slight.
2B----- Albemarle	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: low strength, frost action.	Slight.
2C----- Albemarle	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
2D----- Albemarle	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
3C----- Albemarle	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: large stones, slope.
3D, 3E----- Albemarle	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
4B----- Ashe	Moderate: depth to rock, slope.	Moderate: depth to rock, slope.	Severe: depth to rock.	Moderate: depth to rock, slope.	Moderate: depth to rock, slope.	Moderate: thin layer.
4C----- Ashe	Moderate: depth to rock, slope.	Moderate: depth to rock, slope.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope.	Moderate: thin layer, slope.
4D, 4E----- Ashe	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
5B----- Belvoir	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.
6----- Bermudian	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding, low strength.	Moderate: flooding.
7B----- Braddock	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: low strength, frost action.	Slight.
7C----- Braddock	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
7D----- Braddock	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
8C3----- Braddock	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope.
9B----- Braddock	Moderate: too clayey, large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, large stones.	Moderate: shrink-swell, slope, large stones.	Moderate: low strength, frost action.	Moderate: large stones.
9C----- Braddock	Moderate: too clayey, large stones, slope.	Moderate: shrink-swell, slope, large stones.	Moderate: slope, shrink-swell, large stones.	Severe: slope.	Moderate: low strength, slope, frost action.	Moderate: slope, large stones.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
9D----- Braddock	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
10----- Buncombe	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding, droughty.
11D*, 11E*: Cataska-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
Hartleton-----	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: large stones, slope.
12C----- Catoctin	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: slope, depth to rock.	Moderate: droughty, slope.
12D, 12E----- Catoctin	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope.
13C----- Catoctin	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, large stones.	Moderate: large stones, slope.
13D, 13E----- Catoctin	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
14B----- Chester	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Moderate: large stones.
14C----- Chester	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: large stones, slope.
14D, 14E----- Chester	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
15C----- Chester	Moderate: wetness, slope.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Severe: low strength.	Moderate: large stones, slope.
15D, 15E----- Chester	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
16----- Chewacla	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.
17----- Craigsville	Severe: cutbanks cave, large stones.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: large stones.
18B----- Creedmoor	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
19B----- Cullen	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
19C----- Cullen	Moderate: too clayey, slope.	Moderate: slope, shrink-swell.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
19D----- Cullen	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
20B3----- Cullen	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
20C3----- Cullen	Moderate: too clayey, slope.	Moderate: slope, shrink-swell.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
20D3----- Cullen	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
21B----- Culpeper	Moderate: depth to rock, too clayey.	Moderate: shrink-swell.	Moderate: depth to rock, shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
21C----- Culpeper	Moderate: depth to rock, too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
21D----- Culpeper	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
22C3----- Culpeper	Moderate: depth to rock, too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: depth to rock, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
23B----- Davidson	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Severe: low strength.	Slight.
23C----- Davidson	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
24B----- Dogue	Severe: cutbanks cave, wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell, slope.	Severe: low strength.	Moderate: wetness.
25B----- Dyke	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
25C----- Dyke	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
26B3----- Dyke	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
26C3----- Dyke	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
26D3----- Dyke	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, low strength.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
27B----- Eloak	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Moderate: large stones, droughty.
27C----- Eloak	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: large stones, droughty, slope.
27D----- Eloak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
28C3----- Eloak	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: large stones, droughty, slope.
28D3----- Eloak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
29B----- Fauquier	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
29C----- Fauquier	Moderate: slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
29D, 29E----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, low strength.	Severe: slope.
30C3----- Fauquier	Moderate: slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
30D3----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, low strength.	Severe: slope.
31C----- Fauquier	Moderate: slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope, large stones.
31D----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
32B----- Fluvanna	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
32C----- Fluvanna	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
33C----- Fluvanna	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: large stones, slope.
34B----- Glenelg	Slight-----	Slight-----	Slight-----	Moderate: slope.	Moderate: frost action.	Slight.
34C----- Glenelg	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
34D, 34E----- Glenelg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
35C*: Hartleton-----	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: large stones.
Cataska-----	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, large stones.	Severe: small stones.
36B----- Hayesville	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
36C----- Hayesville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
36D, 36E----- Hayesville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
37B3----- Hayesville	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
37C3----- Hayesville	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
37D3, 37E3----- Hayesville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
38C----- Hayesville	Moderate: too clayey, slope.	Moderate: slope.	Severe: slope.	Severe: slope.	Severe: low strength.	Moderate: large stones, slope.
38D, 38E----- Hayesville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
39C----- Hazel	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, frost action.	Moderate: slope, thin layer.
39D, 39E----- Hazel	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
40D, 40E----- Hazel	Severe: slope, depth to rock.	Severe: slope.	Severe: slope, depth to rock.	Severe: slope.	Severe: slope.	Severe: slope.
41B----- Hiwassee	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
41C----- Hiwassee	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
42B3----- Hiwassee	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
42C3----- Hiwassee	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
42D3----- Hiwassee	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
43B----- Klinesville	Severe: depth to rock.	Moderate: depth to rock.	Severe: depth to rock.	Moderate: slope, depth to rock.	Moderate: depth to rock, frost action.	Severe: small stones, thin layer.
43C----- Klinesville	Severe: depth to rock.	Moderate: slope, depth to rock.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, frost action.	Severe: small stones, thin layer.
43D, 43E----- Klinesville	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope, thin layer.
44C----- Lew	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: small stones, large stones.
44D----- Lew	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, slope.
45C----- Lew	Severe: large stones.	Severe: large stones.	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: small stones, large stones.
45D----- Lew	Severe: large stones, slope.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: small stones, large stones, slope.
46B----- Lignum	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength.	Moderate: wetness.
47C----- Louisburg	Moderate: depth to rock.	Moderate: slope.	Moderate: depth to rock.	Severe: slope.	Moderate: slope.	Moderate: large stones, slope.
47D, 47E----- Louisburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
48D, 48E----- Louisburg	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
49B----- Manassas	Severe: wetness.	Severe: flooding.	Severe: flooding, wetness.	Severe: flooding.	Severe: low strength.	Slight.
50D, 50E----- Manor	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
51B----- Manteo	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: thin layer.
51C----- Manteo	Severe: depth to rock.	Severe: depth to rock.	Severe: depth to rock.	Severe: slope, depth to rock.	Severe: depth to rock.	Severe: thin layer.
51D, 51E----- Manteo	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, thin layer.
52D, 52E----- Manteo	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: slope, depth to rock.	Severe: thin layer, small stones, slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
53B----- Masada	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: slope, shrink-swell.	Severe: low strength.	Slight.
53C----- Masada	Moderate: too clayey, slope.	Moderate: slope, shrink-swell.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
54B----- Mayodan	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Severe: low strength.	Slight.
54C----- Mayodan	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
55B----- McQueen	Moderate: too clayey.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: low strength.	Slight.
56B----- Meadowville	Moderate: wetness.	Moderate: shrink-swell.	Moderate: wetness, shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
56C----- Meadowville	Moderate: slope, wetness.	Moderate: shrink-swell, slope.	Moderate: wetness, slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
57B----- Mount Lucas	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, frost action.	Severe: wetness.
58B----- Myersville	Slight-----	Slight-----	Slight-----	Moderate: slope.	Severe: low strength.	Slight.
58C----- Myersville	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
58D, 58E----- Myersville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
59C----- Myersville	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: large stones, slope.
59D, 59E----- Myersville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength.	Severe: slope.
60C*: Myersville-----	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: large stones, slope.
Catoctin-----	Severe: depth to rock.	Moderate: slope, depth to rock, large stones.	Severe: depth to rock.	Severe: slope.	Moderate: depth to rock, slope, large stones.	Moderate: large stones, slope.
60D*, 60E*: Myersville-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength.	Severe: slope.
Catoctin-----	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
61D*, 61E*: Myersville-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
61D*, 61E*: Rock outcrop.						
62B----- Nason	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: slope, shrink-swell.	Severe: low strength.	Slight.
62C----- Nason	Moderate: slope, too clayey.	Moderate: slope, shrink-swell.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
62D----- Nason	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope, low strength.	Severe: slope.
63B----- Orange	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: low strength, shrink-swell.	Moderate: wetness.
64B----- Orange	Severe: wetness.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: wetness, shrink-swell.	Severe: low strength, shrink-swell.	Moderate: large stones, wetness.
65B----- Pacolet	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Severe: low strength.	Slight.
65C----- Pacolet	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Severe: low strength.	Moderate: slope.
66C----- Parker	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Severe: small stones.
66D, 66E, 67D, 67E----- Parker	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: small stones, slope.
68B----- Penn	Moderate: depth to rock.	Slight-----	Moderate: depth to rock.	Moderate: slope.	Moderate: frost action.	Moderate: thin layer.
68C----- Penn	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: thin layer, slope.
68D----- Penn	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
69*. Pits						
70C----- Porters	Moderate: depth to rock, slope.	Moderate: slope.	Moderate: depth to rock, slope.	Severe: slope.	Moderate: slope.	Severe: large stones.
70D, 70E----- Porters	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: large stones, slope.
71B----- Rabun	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Slight.
71C----- Rabun	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope.
71D, 71E----- Rabun	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
72B3----- Rabun	Moderate: too clayey.	Slight-----	Slight-----	Moderate: slope.	Moderate: low strength.	Moderate: too clayey.
72C3----- Rabun	Moderate: too clayey, slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: low strength, slope.	Moderate: slope, too clayey.
72D3, 72E3, 73C, 73D, 73E----- Rabun	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
74B----- Rapidan	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, low strength.	Slight.
74C----- Rapidan	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, shrink-swell, slope.	Moderate: slope.
74D----- Rapidan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
75C3----- Rapidan	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Moderate: low strength, shrink-swell, slope.	Moderate: slope.
75D3----- Rapidan	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
76----- Riverview	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
77*: Riverview-----	Severe: cutbanks cave.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
Chewacla-----	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.
78----- Rowland	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, frost action.	Moderate: wetness, flooding.
79B----- Starr	Moderate: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
80B----- Tatum	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
80C----- Tatum	Moderate: slope, too clayey.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
81B----- Thurmont	Moderate: wetness.	Slight-----	Moderate: wetness.	Moderate: slope.	Moderate: frost action.	Slight.
81C----- Thurmont	Moderate: wetness, slope.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: slope.
81D----- Thurmont	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
82C----- Thurmont	Moderate: wetness, slope.	Moderate: slope.	Moderate: wetness, slope.	Severe: slope.	Moderate: slope, frost action.	Moderate: small stones, large stones, slope.
82D----- Thurmont	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
83----- Toccoa	Moderate: wetness, flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Moderate: flooding.
84B----- Totier	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
84C, 85C3----- Totier	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
86B----- Turbeville	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Moderate: large stones.
86C----- Turbeville	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: low strength.	Moderate: large stones, slope.
87B----- Tusquitee	Slight-----	Slight-----	Slight-----	Moderate: slope.	Slight-----	Slight.
87C----- Tusquitee	Moderate: slope.	Moderate: slope.	Moderate: slope.	Severe: slope.	Moderate: slope.	Moderate: slope.
87D----- Tusquitee	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.
88. Udorthents						
89B----- Unison	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: slope, shrink-swell.	Severe: low strength.	Moderate: large stones.
89C----- Unison	Moderate: too clayey, slope.	Moderate: slope, shrink-swell.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: large stones, slope.
90B----- Unison	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: slope, shrink-swell.	Severe: low strength.	Moderate: large stones.
90C----- Unison	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: shrink-swell, slope.	Severe: slope.	Severe: low strength.	Moderate: slope, large stones.
90D----- Unison	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Severe: low strength, slope.	Severe: slope.
91*. Urban land						
92----- Wahee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: low strength, wetness, flooding.	Severe: wetness.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Soil name and map symbol	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
93C----- Watt	Severe: depth to rock.	Moderate: depth to rock, large stones.	Severe: depth to rock.	Severe: slope.	Moderate: low strength, large stones.	Moderate: small stones, large stones, droughty.
93D, 93E----- Watt	Severe: depth to rock, slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Severe: slope.	Severe: slope.
94B----- Wedowee	Moderate: too clayey.	Moderate: shrink-swell.	Moderate: shrink-swell.	Moderate: shrink-swell, slope.	Severe: low strength.	Slight.
94C----- Wedowee	Moderate: too clayey, slope.	Moderate: shrink-swell, slope.	Moderate: slope, shrink-swell.	Severe: slope.	Severe: low strength.	Moderate: slope.
95----- Wehadkee	Severe: wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, flooding.	Severe: wetness.
96B----- Worsham	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, low strength.	Severe: wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," "good," "fair," and other terms. Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
1B----- Abell	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Fair: too clayey, wetness.
2B----- Albemarle	Moderate: depth to rock.	Severe: seepage.	Severe: depth to rock, seepage.	Severe: seepage.	Fair: area reclaim, too clayey.
2C----- Albemarle	Moderate: depth to rock, slope.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage.	Fair: area reclaim, too clayey, slope.
2D----- Albemarle	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: slope.
3C----- Albemarle	Moderate: depth to rock, slope.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage.	Fair: area reclaim, too clayey, slope.
3D, 3E----- Albemarle	Severe: slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: slope.
4B----- Ashe	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
4C----- Ashe	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
4D, 4E----- Ashe	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, slope, thin layer.
5B----- Belvoir	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: area reclaim, wetness.
6----- Bermudian	Severe: flooding, wetness, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Fair: too clayey, small stones, wetness.
7B----- Braddock	Moderate: percs slowly.	Severe: seepage.	Severe: seepage, too clayey.	Slight-----	Poor: too clayey, hard to pack.
7C----- Braddock	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
7D----- Braddock	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic-tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
8C3----- Braddock	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: seepage, too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
9B----- Braddock	Moderate: percs slowly, large stones.	Severe: seepage.	Severe: seepage, too clayey.	Slight-----	Poor: too clayey, hard to pack, small stones.
9C----- Braddock	Moderate: percs slowly, slope, large stones.	Severe: seepage, slope.	Severe: seepage, too clayey.	Moderate: slope.	Poor: too clayey, hard to pack, small stones.
9D----- Braddock	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
10----- Buncombe	Severe: flooding, poor filter.	Severe: seepage, flooding.	Severe: flooding, seepage, too sandy.	Severe: flooding, seepage.	Poor: seepage, too sandy.
11D*, 11E*: Cataska-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, small stones, slope.
Hartleton-----	Severe: slope, large stones.	Severe: seepage, slope, large stones.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: large stones, slope.
12C----- Catoclin	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
12D, 12E----- Catoclin	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Poor: area reclaim, small stones, slope.
13C----- Catoclin	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, small stones.
13D, 13E----- Catoclin	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, small stones, slope.
14B----- Chester	Moderate: percs slowly.	Moderate: seepage, slope.	Slight-----	Slight-----	Fair: small stones.
14C----- Chester	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope.	Moderate: slope.	Fair: small stones, slope.
14D, 14E----- Chester	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
15C----- Chester	Moderate: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness.	Moderate: slope.	Fair: slope.
15D, 15E----- Chester	Severe: slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Poor: slope.
16----- Chewacla	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
17----- Craigsville	Severe: flooding, poor filter.	Severe: seepage, flooding, large stones.	Severe: flooding, seepage, large stones.	Severe: flooding, seepage.	Poor: large stones, seepage.
18B----- Creedmoor	Severe: wetness, percs slowly.	Moderate: slope.	Severe: wetness, too clayey.	Moderate: wetness.	Poor: too clayey, hard to pack.
19B----- Cullen	Moderate: percs slowly.	Moderate: slope, seepage.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
19C----- Cullen	Moderate: percs slowly, slope.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
19D----- Cullen	Severe: slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
20B3----- Cullen	Moderate: percs slowly.	Moderate: slope, seepage.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
20C3----- Cullen	Moderate: percs slowly, slope.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
20D3----- Cullen	Severe: slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
21B----- Culpeper	Moderate: depth to rock, percs slowly.	Moderate: seepage, depth to rock, slope.	Severe: depth to rock.	Moderate: depth to rock.	Fair: area reclaim, too clayey.
21C----- Culpeper	Moderate: depth to rock, percs slowly, slope.	Severe: slope.	Severe: depth to rock.	Moderate: depth to rock, slope.	Fair: area reclaim, slope, too clayey.
21D----- Culpeper	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: slope.
22C3----- Culpeper	Moderate: depth to rock, percs slowly, slope.	Severe: slope.	Severe: depth to rock.	Moderate: depth to rock, slope.	Fair: area reclaim, slope, too clayey.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
23B----- Davidson	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
23C----- Davidson	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
24B----- Dogue	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: seepage, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack.
25B----- Dyke	Moderate: percs slowly.	Moderate: seepage, slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
25C----- Dyke	Moderate: percs slowly, slope.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
26B3----- Dyke	Moderate: percs slowly.	Moderate: seepage, slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
26C3----- Dyke	Moderate: percs slowly, slope.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
26D3----- Dyke	Severe: slope.	Severe: slope.	Severe: slope, too clayey.	Severe: slope.	Poor: slope, too clayey, hard to pack.
27B----- Elloak	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
27C----- Elloak	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
27D----- Elloak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
28C3----- Elloak	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
28D3----- Elloak	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
29B----- Fauquier	Moderate: depth to rock, percs slowly.	Moderate: slope, seepage, depth to rock.	Severe: too clayey, depth to rock.	Moderate: depth to rock.	Poor: too clayey, hard to pack, small stones.
29C----- Fauquier	Moderate: slope, percs slowly, depth to rock.	Severe: slope.	Severe: too clayey, depth to rock.	Moderate: slope, depth to rock.	Poor: too clayey, hard to pack, small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
29D, 29E----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope, too clayey, depth to rock.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
30C3----- Fauquier	Moderate: slope, percs slowly, depth to rock.	Severe: slope.	Severe: too clayey, depth to rock.	Moderate: slope, depth to rock.	Poor: too clayey, hard to pack, small stones.
30D3----- Fauquier	Severe: slope.	Severe: slope.	Severe: slope, too clayey, depth to rock.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
31C----- Fauquier	Moderate: depth to rock, percs slowly, slope.	Severe: slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock, slope.	Poor: too clayey, hard to pack, small stones.
31D----- Fauquier	Severe: slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, small stones.
32B----- Fluvanna	Severe: percs slowly.	Moderate: slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
32C, 33C----- Fluvanna	Severe: percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
34B----- Glenelg	Moderate: depth to rock, percs slowly.	Moderate: seepage, depth to rock, slope.	Severe: depth to rock.	Moderate: depth to rock.	Poor: small stones.
34C----- Glenelg	Moderate: depth to rock, percs slowly, slope.	Severe: slope.	Severe: depth to rock.	Moderate: depth to rock, slope.	Poor: small stones.
34D, 34E----- Glenelg	Severe: slope.	Severe: slope.	Severe: depth to rock, slope.	Severe: slope.	Poor: small stones, slope.
35C*: Hartleton-----	Severe: large stones.	Severe: seepage, slope, large stones.	Severe: depth to rock, seepage.	Severe: seepage.	Poor: large stones.
Cataska-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, small stones.
36B----- Hayesville	Moderate: percs slowly.	Moderate: seepage, slope.	Severe: seepage, too clayey.	Slight-----	Poor: too clayey, hard to pack.
36C----- Hayesville	Moderate: percs slowly, slope.	Severe: slope.	Severe: seepage, too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
36D, 36E----- Hayesville	Severe: slope.	Severe: slope.	Severe: seepage, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
37B3----- Hayesville	Moderate: percs slowly.	Moderate: seepage, slope.	Severe: seepage, too clayey.	Slight-----	Poor: too clayey, hard to pack.
37C3----- Hayesville	Moderate: percs slowly, slope.	Severe: slope.	Severe: seepage, too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
37D3, 37E3----- Hayesville	Severe: slope.	Severe: slope.	Severe: seepage, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
38C----- Hayesville	Moderate: percs slowly.	Severe: slope.	Severe: seepage, too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
38D, 38E----- Hayesville	Severe: slope.	Severe: slope.	Severe: seepage, slope, too clayey.	Severe: slope.	Poor: too clayey, hard to pack, slope.
39C----- Hazel	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, thin layer.
39D, 39E----- Hazel	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, slope, thin layer.
40D, 40E----- Hazel	Severe: slope, depth to rock.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, slope, seepage.	Poor: area reclaim, small stones, slope.
41B----- Hiwassee	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
41C----- Hiwassee	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
42B3----- Hiwassee	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, hard to pack.
42C3----- Hiwassee	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, hard to pack, slope.
42D3----- Hiwassee	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
43B----- Klinesville	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, seepage, small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
43C----- Klinesville	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, seepage, small stones.
43D, 43E----- Klinesville	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, seepage, small stones.
44C----- Lew	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: seepage.	Poor: hard to pack, large stones.
44D----- Lew	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: seepage, slope.	Poor: hard to pack, large stones, slope.
45C----- Lew	Severe: large stones.	Severe: slope, large stones.	Severe: large stones.	Severe: seepage.	Poor: hard to pack, large stones.
45D----- Lew	Severe: slope, large stones.	Severe: slope, large stones.	Severe: slope, large stones.	Severe: seepage, slope.	Poor: hard to pack, large stones, slope.
46B----- Lignum	Severe: percs slowly, wetness.	Severe: wetness.	Severe: depth to rock, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
47C----- Louisburg	Moderate: depth to rock.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Fair: slope.
47D, 47E----- Louisburg	Severe: slope.	Severe: seepage.	Severe: seepage.	Severe: seepage.	Poor: slope.
48D, 48E----- Louisburg	Severe: slope.	Severe: seepage, large stones.	Severe: seepage, large stones.	Severe: seepage.	Poor: slope.
49B----- Manassas	Moderate: flooding, depth to rock, wetness.	Severe: flooding, seepage, wetness.	Severe: seepage, depth to rock.	Severe: seepage, wetness.	Fair: area reclaim, too clayey, wetness.
50D, 50E----- Manor	Severe: slope.	Severe: slope, seepage.	Severe: seepage, slope.	Severe: slope, seepage.	Poor: slope.
51B----- Manteo	Severe: depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
51C----- Manteo	Severe: depth to rock.	Severe: slope, depth to rock, seepage.	Severe: depth to rock, seepage.	Severe: seepage, depth to rock.	Poor: area reclaim, small stones.
51D, 51E, 52D, 52E-- Manteo	Severe: depth to rock, slope.	Severe: slope, depth to rock, seepage.	Severe: slope, depth to rock, seepage.	Severe: slope, seepage, depth to rock.	Poor: slope, area reclaim, small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
53B----- Masada	Moderate: percs slowly.	Moderate: seepage, slope.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
53C----- Masada	Moderate: slope, percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
54B----- Mayodan	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Severe: seepage.	Fair: too clayey, hard to pack.
54C----- Mayodan	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Severe: seepage.	Fair: too clayey, hard to pack, slope.
55B----- McQueen	Severe: percs slowly.	Slight-----	Severe: too clayey.	Moderate: flooding.	Poor: too clayey.
56B----- Meadowville	Severe: wetness.	Severe: seepage, wetness.	Severe: depth to rock, seepage, wetness.	Severe: seepage, wetness.	Fair: area reclaim, too clayey.
56C----- Meadowville	Severe: wetness.	Severe: slope, seepage, wetness.	Severe: depth to rock, seepage, wetness.	Severe: seepage, wetness.	Fair: area reclaim, too clayey, slope.
57B----- Mount Lucas	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Severe: depth to rock, seepage, wetness.	Severe: seepage, wetness.	Poor: small stones, wetness.
58B----- Myersville	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, small stones.
58C----- Myersville	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, small stones, slope.
58D, 58E----- Myersville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
59C----- Myersville	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey, large stones.	Moderate: slope.	Fair: too clayey, small stones.
59D, 59E----- Myersville	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
60C#: Myersville-----	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey, large stones.	Moderate: slope.	Fair: too clayey, small stones.
Catoctin-----	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
60D*, 60E*: Myersville-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Catoctin-----	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, small stones, slope.
61D*, 61E*: Myersville-----	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
Rock outcrop.					
62B----- Nason	Moderate: depth to rock, percs slowly.	Moderate: slope, seepage, depth to rock.	Severe: too clayey, depth to rock.	Moderate: depth to rock.	Poor: too clayey, hard to pack.
62C----- Nason	Moderate: slope, depth to rock, percs slowly.	Severe: slope.	Severe: too clayey, depth to rock.	Moderate: slope, depth to rock.	Poor: too clayey, hard to pack.
62D----- Nason	Severe: slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: slope, too clayey, hard to pack.
63B----- Orange	Severe: percs slowly, wetness.	Severe: wetness.	Severe: depth to rock, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
64B----- Orange	Severe: wetness, percs slowly.	Severe: wetness.	Severe: depth to rock, wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
65B----- Pacolet	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
65C----- Pacolet	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
66C----- Parker	Severe: poor filter.	Severe: seepage, slope.	Severe: depth to rock, seepage.	Severe: seepage.	Poor: seepage, small stones.
66D, 66E, 67D, 67E-- Parker	Severe: poor filter, slope.	Severe: seepage, slope.	Severe: depth to rock, seepage, slope.	Severe: seepage, slope.	Poor: seepage, small stones, slope.
68B----- Penn	Severe: depth to rock.	Severe: seepage, depth to rock.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, small stones.
68C----- Penn	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, small stones.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
68D----- Penn	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, small stones, slope.
69*. Pits					
70C----- Porters	Moderate: depth to rock, slope.	Severe: slope.	Severe: depth to rock, seepage.	Severe: seepage.	Fair: area reclaim, small stones, slope.
70D, 70E----- Porters	Severe: slope.	Severe: slope.	Severe: depth to rock, seepage, slope.	Severe: slope.	Poor: slope.
71B----- Rabun	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
71C----- Rabun	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
71D, 71E----- Rabun	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
72B3----- Rabun	Moderate: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight-----	Fair: too clayey.
72C3----- Rabun	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope.
72D3, 72E3, 73C, 73D, 73E----- Rabun	Severe: slope.	Severe: slope.	Severe: slope.	Severe: slope.	Poor: slope.
74B----- Rapidan	Moderate: depth to rock.	Moderate: seepage, depth to rock, slope.	Severe: depth to rock, too clayey.	Slight-----	Fair: too clayey.
74C----- Rapidan	Moderate: slope, depth to rock.	Severe: slope.	Severe: depth to rock, too clayey.	Moderate: slope.	Fair: slope, too clayey.
74D----- Rapidan	Severe: slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: slope.
75C3----- Rapidan	Moderate: slope, depth to rock.	Severe: slope.	Severe: depth to rock, too clayey.	Moderate: slope.	Fair: slope, too clayey.
75D3----- Rapidan	Severe: slope.	Severe: slope.	Severe: depth to rock, slope, too clayey.	Severe: slope.	Poor: slope.
76----- Riverview	Severe: flooding, wetness.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage.	Fair: wetness.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
77*: Riverview-----	Severe: flooding, wetness.	Severe: seepage, flooding.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage.	Fair: wetness.
Chewacla-----	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
78----- Rowland	Severe: flooding, wetness, percs slowly.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, wetness.	Poor: wetness.
79B----- Starr	Severe: flooding.	Severe: flooding.	Severe: flooding.	Severe: flooding.	Fair: too clayey.
80B----- Tatum	Moderate: depth to rock, percs slowly.	Moderate: slope, seepage, depth to rock.	Severe: too clayey, depth to rock.	Moderate: depth to rock.	Poor: too clayey, hard to pack.
80C----- Tatum	Moderate: slope, depth to rock, percs slowly.	Severe: slope.	Severe: too clayey, depth to rock.	Moderate: slope, depth to rock.	Poor: too clayey, hard to pack.
81B----- Thurmont	Moderate: wetness, percs slowly.	Moderate: seepage, slope, wetness.	Severe: wetness.	Moderate: wetness.	Fair: small stones.
81C----- Thurmont	Moderate: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness.	Moderate: slope, wetness.	Fair: small stones, slope.
81D----- Thurmont	Severe: slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Poor: slope.
82C----- Thurmont	Moderate: wetness, percs slowly, slope.	Severe: slope.	Severe: wetness.	Moderate: wetness, slope.	Fair: small stones, slope.
82D----- Thurmont	Severe: slope.	Severe: slope.	Severe: wetness, slope.	Severe: slope.	Poor: slope.
83----- Toccoa	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, seepage, wetness.	Severe: flooding, seepage, wetness.	Good.
84B----- Totier	Moderate: depth to rock, percs slowly.	Moderate: seepage, depth to rock, slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock.	Poor: too clayey, hard to pack.
84C, 85C3----- Totier	Moderate: depth to rock, percs slowly, slope.	Severe: slope.	Severe: depth to rock, too clayey.	Moderate: depth to rock, slope.	Poor: too clayey, hard to pack.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
86B----- Turbeville	Moderate: percs slowly.	Moderate: slope, large stones.	Severe: too clayey.	Slight-----	Poor: too clayey, hard to pack.
86C----- Turbeville	Moderate: slope, percs slowly.	Severe: slope.	Severe: too clayey.	Moderate: slope.	Poor: too clayey, hard to pack.
87B----- Tusquitee	Slight-----	Severe: seepage.	Severe: seepage.	Severe: seepage.	Good.
87C----- Tusquitee	Moderate: slope.	Severe: seepage, slope.	Severe: seepage.	Severe: seepage.	Fair: slope.
87D----- Tusquitee	Severe: slope.	Severe: seepage, slope.	Severe: seepage, slope.	Severe: slope, seepage.	Poor: slope.
88. Udorthents					
89B----- Unison	Moderate: percs slowly.	Severe: seepage.	Severe: too clayey, seepage.	Slight-----	Poor: too clayey, hard to pack.
89C----- Unison	Moderate: percs slowly, slope.	Severe: seepage, slope.	Severe: too clayey, seepage.	Moderate: slope.	Poor: too clayey, hard to pack.
90B----- Unison	Moderate: percs slowly.	Severe: seepage.	Severe: too clayey, seepage.	Slight-----	Poor: too clayey, hard to pack.
90C----- Unison	Moderate: percs slowly, slope.	Severe: slope, seepage.	Severe: too clayey, seepage.	Moderate: slope.	Poor: too clayey, hard to pack.
90D----- Unison	Severe: slope.	Severe: slope, seepage.	Severe: slope, too clayey, seepage.	Severe: slope.	Poor: slope, too clayey, hard to pack.
91*. Urban land					
92----- Wahee	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
93C----- Watt	Severe: depth to rock.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage.	Severe: depth to rock, seepage.	Poor: area reclaim, small stones.
93D, 93E----- Watt	Severe: depth to rock, slope.	Severe: seepage, depth to rock, slope.	Severe: depth to rock, seepage, slope.	Severe: depth to rock, seepage, slope.	Poor: area reclaim, slope, small stones.
94B----- Wedowee	Moderate: percs slowly.	Moderate: slope.	Moderate: too clayey.	Slight-----	Fair: too clayey, thin layer.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Soil name and map symbol	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
94C----- Wedowee	Moderate: percs slowly, slope.	Severe: slope.	Moderate: slope, too clayey.	Moderate: slope.	Fair: too clayey, slope, thin layer.
95----- Wehadkee	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Poor: wetness.
96B----- Worsham	Severe: percs slowly, wetness.	Moderate: slope.	Severe: wetness, too clayey.	Severe: wetness.	Poor: wetness, too clayey, wetness.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 12.--CONSTRUCTION MATERIALS

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "good," "fair," "poor," "probable," and "improbable." Absence of an entry indicates that the soil was not rated]

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
1B----- Abell	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Good.
2B----- Albemarle	Fair: area reclaim, low strength, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
2C----- Albemarle	Fair: area reclaim, low strength, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
2D----- Albemarle	Fair: area reclaim, low strength, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
3C----- Albemarle	Fair: area reclaim, low strength, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
3D----- Albemarle	Fair: area reclaim, low strength, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
3E----- Albemarle	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
4B, 4C----- Ashe	Poor: area reclaim, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Fair: area reclaim, thin layer.
4D----- Ashe	Poor: area reclaim, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
4E----- Ashe	Poor: area reclaim, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
5B----- Belvoir	Fair: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
6----- Bermudian	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
7B, 7C----- Braddock	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.
7D----- Braddock	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
8C3----- Braddock	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
9B, 9C----- Braddock	Fair: low strength, large stones.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.
9D----- Braddock	Fair: low strength, large stones, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones, slope.
10----- Buncombe	Good-----	Probable-----	Improbable: too sandy.	Fair: too sandy.
11D*: Cataska-----	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Hartleton-----	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
11E*: Cataska-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
Hartleton-----	Poor: large stones, slope.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
12C----- Catoctin	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
12D----- Catoctin	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
12E----- Catoctin	Poor: slope, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
13C----- Catoctin	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
13D----- Catoctin	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
13E----- Catoctin	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
14B, 14C----- Chester	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
14D----- Chester	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
14E----- Chester	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
15C----- Chester	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
15D----- Chester	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
15E----- Chester	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
16----- Chewacla	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
17----- Craigsville	Fair: large stones.	Improbable: large stones.	Improbable: large stones.	Poor: large stones, area reclaim.
18B----- Creedmoor	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
19B, 19C----- Cullen	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
19D----- Cullen	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
20B3, 20C3----- Cullen	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
20D3----- Cullen	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
21B, 21C----- Culpeper	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
21D----- Culpeper	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, slope.
22C3----- Culpeper	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
23B, 23C----- Davidson	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
24B----- Dogue	Fair: wetness.	Probable-----	Improbable: too sandy.	Poor: thin layer.
25B, 25C, 26B3, 26C3-- Dyke	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
26D3----- Dyke	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
27B, 27C----- Elioak	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
27D----- Elioak	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
28C3----- Elioak	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
28D3----- Elioak	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
29B, 29C----- Fauquier	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
29D----- Fauquier	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
29E----- Fauquier	Poor: slope, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
30C3----- Fauquier	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
30D3----- Fauquier	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
31C----- Fauquier	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
31D----- Fauquier	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, small stones.
32B, 32C, 33C----- Fluvanna	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
34B, 34C----- Glennelg	Fair: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
34D----- Glennelg	Fair: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
34E----- Glennelg	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
35C*: Hartleton-----	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim.
Cataska-----	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
36B, 36C----- Hayesville	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
36D----- Hayesville	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
36E----- Hayesville	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
37B3, 37C3----- Hayesville	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
37D3----- Hayesville	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
37E3----- Hayesville	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
38C----- Hayesville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
38D----- Hayesville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
38E----- Hayesville	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
39C----- Hazel	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
39D----- Hazel	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
39E----- Hazel	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
40D----- Hazel	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
40E----- Hazel	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
41B, 41C, 42B3, 42C3-- Hiwassee	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
42D3----- Hiwassee	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
43B, 43C----- Klinesville	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: area reclaim, small stones.
43D----- Klinesville	Poor: area reclaim.	Improbable: thin layer.	Improbable: thin layer.	Poor: area reclaim, small stones, slope.
43E----- Klinesville	Poor: area reclaim, slope.	Improbable: thin layer.	Improbable: thin layer.	Poor: area reclaim, small stones, slope.
44C----- Lew	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim.
44D----- Lew	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
45C----- Lew	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim.
45D----- Lew	Poor: large stones.	Improbable: excess fines, large stones.	Improbable: excess fines, large stones.	Poor: large stones, area reclaim, slope.
46B----- Lignum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
47C----- Louisburg	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: thin layer.
47D----- Louisburg	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
47E----- Louisburg	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
48D----- Louisburg	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones.
48E----- Louisburg	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: large stones.
49B----- Manassas	Fair: area reclaim, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
50D----- Manor	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
50E----- Manor	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
51B, 51C----- Manteo	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim, small stones.
51D----- Manteo	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, area reclaim, small stones.
51E----- Manteo	Poor: slope, thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, area reclaim, small stones.
52D----- Manteo	Poor: thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, area reclaim, small stones.
52E----- Manteo	Poor: slope, thin layer, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, area reclaim, small stones.
53B, 53C----- Masada	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
54B----- Mayodan	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
54C----- Mayodan	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
55B----- McQueen	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
56B----- Meadowville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
56C----- Meadowville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
57B----- Mount Lucas	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, wetness.
58B----- Myersville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones.
58C----- Myersville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Fair: small stones, slope.
58D----- Myersville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
58E----- Myersville	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
59C----- Myersville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
59D----- Myersville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
59E----- Myersville	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
60C*: Myersville-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
Catoctin-----	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
60D*: Myersville-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Catoctin-----	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
60E*: Myersville-----	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Catoctin-----	Poor: area reclaim, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
61D*: Myersville-----	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rock outcrop.				
61E*: Myersville-----	Poor: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
Rock outcrop.				
62B, 62C----- Nason	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, area reclaim.
62D----- Nason	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope, area reclaim.
63B----- Orange	Poor: low strength, shrink-swell, area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
64B----- Orange	Poor: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, thin layer.
65B, 65C----- Pacolet	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
66C----- Parker	Fair: area reclaim.	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim.
66D----- Parker	Fair: area reclaim, slope.	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim, slope.
66E----- Parker	Poor: slope.	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim, slope.
67D----- Parker	Fair: area reclaim, slope.	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim, slope.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
67E----- Parker	Poor: slope.	Improbable: small stones.	Probable-----	Poor: small stones, area reclaim, slope.
68B, 68C----- Penn	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
68D----- Penn	Poor: area reclaim.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, slope.
69*. Pits				
70C----- Porters	Fair: area reclaim, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Fair: large stones, small stones, slope.
70D----- Porters	Fair: area reclaim, thin layer, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
70E----- Porters	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
71B, 71C----- Rabun	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
71D----- Rabun	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
71E----- Rabun	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
72B3, 72C3----- Rabun	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.
72D3----- Rabun	Fair: low strength, slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
72E3----- Rabun	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
73C----- Rabun	Fair: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
73D----- Rabun	Fair: slope, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
73E----- Rabun	Poor: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, slope.
74B, 74C----- Rapidan	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
74D----- Rapidan	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
75C3----- Rapidan	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
75D3----- Rapidan	Poor: thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, slope.
76----- Riverview	Good-----	Improbable: excess fines.	Improbable: excess fines.	Good.
77*: Riverview-----	Good-----	Improbable: excess fines.	Improbable: excess fines.	Good.
Chewacla-----	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
78----- Rowland	Fair: wetness, thin layer.	Improbable: excess fines.	Improbable: excess fines.	Poor: area reclaim.
79B----- Starr	Fair: low strength, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey.
80B, 80C----- Tatum	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones.
81B----- Thurmont	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones.
81C----- Thurmont	Good-----	Improbable: excess fines.	Improbable: excess fines.	Fair: too clayey, small stones, slope.
81D----- Thurmont	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope.
82C----- Thurmont	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
82D----- Thurmont	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
83----- Toccoa	Good-----	Improbable: excess fines.	Improbable: excess fines.	Good.
84B, 84C, 85C3----- Totier	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.
86B, 86C----- Turbeville	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey, small stones.
87B, 87C----- Tusquitee	Good-----	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Soil name and map symbol	Roadfill	Sand	Gravel	Topsoil
87D----- Tusquitee	Fair: slope.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, area reclaim, slope.
88. Udorthents				
89B, 89C, 90B, 90C---- Unison	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
90D----- Unison	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: slope, thin layer.
91*. Urban land				
92----- Wahee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
93C----- Watt	Poor: area reclaim.	Improbable-----	Improbable-----	Poor: small stones, thin layer.
93D----- Watt	Poor: area reclaim.	Improbable-----	Improbable-----	Poor: small stones, thin layer, slope.
93E----- Watt	Poor: area reclaim, slope.	Improbable-----	Improbable-----	Poor: small stones, thin layer, slope.
94B, 94C----- Wedowee	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
95----- Wehadkee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
96B----- Worsham	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, thin layer.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 13.--WATER MANAGEMENT

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "moderate," and "severe." Absence of an entry indicates that the soil was not evaluated]

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
1B----- Abell	Severe: seepage.	Severe: piping.	Moderate: deep to water, slow refill.	Slope-----	Wetness, slope.	Wetness-----	Favorable.
2B----- Albemarle	Severe: seepage.	Severe: piping.	Deep to water	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
2C, 2D, 3C, 3D, 3E----- Albemarle	Severe: seepage, slope.	Severe: piping.	Deep to water	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
4B----- Ashe	Severe: seepage.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Depth to rock, slope.	Depth to rock	Depth to rock.
4C----- Ashe	Severe: seepage.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Depth to rock, slope.	Depth to rock, slope.	Depth to rock, slope.
4D, 4E----- Ashe	Severe: seepage, slope.	Moderate: piping, thin layer.	Severe: no water.	Deep to water	Depth to rock, slope.	Depth to rock, slope.	Depth to rock, slope.
5B----- Belvoir	Moderate: seepage, slope.	Moderate: seepage, piping, wetness.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly, rooting depth.	Erodes easily, wetness, rooting depth.	Wetness, erodes easily, rooting depth.
6----- Bermudian	Severe: seepage.	Severe: piping.	Moderate: deep to water, cutbanks cave.	Deep to water	Flooding, erodes easily.	Favorable-----	Favorable.
7B----- Braddock	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
7C, 7D, 8C3----- Braddock	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
9B----- Braddock	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Large stones, slope.	Large stones---	Large stones.
9C, 9D----- Braddock	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Large stones, slope.	Slope, large stones.	Large stones, slope.
10----- Buncombe	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake.	Too sandy-----	Droughty, rooting depth.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
11D*, 11E*: Cataska-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water	Large stones, depth to rock, slope.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
Hartleton-----	Severe: seepage, slope.	Severe: piping, large stones.	Severe: no water.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
12C, 12D, 12E---- Catoctin	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Droughty, depth to rock, slope.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
13C, 13D, 13E---- Catoctin	Severe: seepage, slope.	Moderate: seepage, piping, large stones.	Severe: no water.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
14B----- Chester	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope-----	Erodes easily	Erodes easily.
14C, 14D, 14E, 15C, 15D, 15E---- Chester	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope-----	Slope, erodes easily.	Slope, erodes easily.
16----- Chewacla	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding-----	Wetness, flooding.	Wetness-----	Wetness.
17----- Craigsville	Severe: seepage.	Severe: seepage, large stones.	Severe: no water.	Deep to water	Large stones, droughty.	Large stones, too sandy.	Large stones, droughty.
18B----- Creedmoor	Slight-----	Severe: hard to pack.	Severe: no water.	Percs slowly, slope.	Wetness, percs slowly.	Wetness, percs slowly.	Percs slowly.
19B----- Cullen	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
19C, 19D----- Cullen	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
20B3----- Cullen	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
20C3, 20D3----- Cullen	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
21B----- Culpeper	Moderate: seepage, depth to rock, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
21C, 21D, 22C3---- Culpeper	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
23B----- Davidson	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
23C----- Davidson	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
24B----- Dogue	Moderate: seepage, slope.	Severe: wetness.	Severe: slow refill, cutbanks cave.	Slope-----	Wetness, slope, erodes easily.	Erodes easily, wetness.	Erodes easily.
25B----- Dyke	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
25C----- Dyke	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
26B3----- Dyke	Moderate: seepage, slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
26C3, 26D3----- Dyke	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
27B----- Elioak	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Droughty, slope.	Favorable-----	Droughty.
27C, 27D, 28C3, 28D3----- Elioak	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Droughty, slope.	Slope-----	Slope, droughty.
29B----- Fauquier	Moderate: seepage, depth to rock, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
29C, 29D, 29E, 30C3, 30D3, 31C, 31D----- Fauquier	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
32B----- Fluvanna	Moderate: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
32C----- Fluvanna	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope, erodes easily.	Slope, erodes easily, percs slowly.	Slope, erodes easily, percs slowly.
33C----- Fluvanna	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Percs slowly, slope.	Slope, large stones, percs slowly.	Large stones, slope, percs slowly.
34B----- Glenelg	Moderate: seepage, depth to rock, slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
34C, 34D, 34E----- Glenelg	Severe: slope.	Severe: seepage, piping.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
35C*: Hartleton-----	Severe: seepage, slope.	Severe: piping, large stones.	Severe: no water.	Deep to water	Large stones, droughty, slope.	Slope, large stones.	Large stones, slope, droughty.
Cataska-----	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water	Large stones, depth to rock, slope.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
36B----- Hayesville	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
36C----- Hayesville	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
36D, 36E----- Hayesville	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
37B3----- Hayesville	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
37C3----- Hayesville	Moderate: seepage.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
37D3, 37E3, 38C, 38D, 38E----- Hayesville	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
39C, 39D----- Hazel	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Depth to rock, slope.	Slope, large stones, depth to rock.	Slope, erodes easily.
39E----- Hazel	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Depth to rock, slope.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
40D, 40E----- Hazel	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Large stones, depth to rock, slope.	Slope, large stones, depth to rock.	Large stones, slope, depth to rock.
41B----- Hiwassee	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
41C----- Hiwassee	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
42B3----- Hiwassee	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
42C3----- Hiwassee	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
42D3----- Hiwassee	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
43B----- Klinesville	Severe: depth to rock.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, depth to rock, slope.	Depth to rock	Droughty, depth to rock.
43C, 43D, 43E----- Klinesville	Severe: depth to rock, slope.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, depth to rock, slope.	Slope, depth to rock.	Slope, droughty, depth to rock.
44C, 44D, 45C, 45D----- Lew	Severe: slope.	Severe: piping, hard to pack, large stones.	Severe: no water.	Deep to water	Large stones, slope.	Slope, large stones.	Large stones, slope.
46B----- Lignum	Moderate: depth to rock, slope.	Severe: hard to pack, wetness.	Severe: no water.	Slope, percs slowly.	Slope, percs slowly.	Erodes easily, wetness.	Wetness, erodes easily.
47C, 47D, 47E----- Louisburg	Severe: seepage.	Moderate: piping, erodes easily.	Severe: no water.	Deep to water--	Slope, seepage.	Slope-----	Slope.
48D, 48E----- Louisburg	Severe: seepage.	Moderate: large stones, piping, erodes easily.	Severe: no water.	Deep to water--	Slope-----	Large stones, slope.	Large stones, slope.
49B----- Manassas	Severe: seepage.	Moderate: piping, wetness.	Moderate: deep to water, slow refill, depth to rock.	Slope-----	Wetness, erodes easily, slope.	Erodes easily, wetness.	Erodes easily.
50D, 50E----- Manor	Severe: slope, seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
51B----- Manteo	Severe: depth to rock.	Severe: piping.	Severe: no water.	Deep to water	Large stones, depth to rock, slope.	Large stones, depth to rock.	Large stones, depth to rock.
51C, 51D, 51E----- Manteo	Severe: depth to rock, slope.	Severe: piping.	Severe: no water.	Deep to water	Large stones, depth to rock, slope.	Large stones, depth to rock, slope.	Large stones, depth to rock, slope.
52D, 52E----- Manteo	Severe: depth to rock, slope.	Severe: piping, large stones.	Severe: no water.	Deep to water	Large stones, depth to rock, slope.	Large stones, depth to rock, slope.	Large stones, depth to rock, slope.
53B----- Masada	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
53C----- Masada	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
54B----- Mayodan	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
54C----- Mayodan	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
55B----- McQueen	Moderate: slope.	Moderate: piping.	Severe: no water.	Deep to water	Percs slowly, slope, erodes easily.	Erodes easily, percs slowly.	Erodes easily, percs slowly.
56B----- Meadowville	Severe: seepage.	Severe: piping.	Moderate: deep to water, slow refill, depth to rock.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
56C----- Meadowville	Severe: seepage, slope.	Severe: piping.	Moderate: deep to water, slow refill, depth to rock.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
57B----- Mount Lucas	Severe: seepage.	Severe: piping, wetness.	Severe: no water.	Percs slowly, frost action, slope.	Wetness, percs slowly, slope.	Wetness, percs slowly.	Wetness, percs slowly.
58B----- Myersville	Moderate: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
58C, 58D, 58E----- Myersville	Severe: slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
59C, 59D, 59E----- Myersville	Severe: slope.	Moderate: thin layer, piping, large stones.	Severe: no water.	Deep to water	Slope-----	Slope, large stones.	Large stones, slope.
60C*, 60D*, 60E*: Myersville-----	Severe: slope.	Moderate: thin layer, piping, large stones.	Severe: no water.	Deep to water	Slope-----	Slope, large stones.	Large stones, slope.
Catoctin-----	Severe: seepage, slope.	Moderate: seepage, piping, large stones.	Severe: no water.	Deep to water	Large stones, droughty, depth to rock.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
61D*, 61E*: Myersville-----	Severe: slope.	Moderate: thin layer, piping, large stones.	Severe: no water.	Deep to water	Slope-----	Slope, large stones.	Large stones, slope.
Rock outcrop.							
62B----- Nason	Moderate: seepage, depth to rock, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Erodes easily, slope.	Erodes easily	Erodes easily.
62C, 62D----- Nason	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Erodes easily, slope.	Slope, erodes easily.	Slope, erodes easily.
63B----- Orange	Moderate: depth to rock, slope.	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, slope.	Wetness, percs slowly, slope.	Erodes easily, wetness.	Wetness, erodes easily.
64B----- Orange	Moderate: depth to rock, slope.	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, slope.	Wetness, percs slowly, slope.	Wetness, percs slowly.	Wetness, percs slowly.
65B----- Pacolet	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
65C----- Pacolet	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
66C, 66D, 66E, 67D, 67E----- Parker	Severe: seepage, slope.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, slope.	Slope-----	Slope, droughty.
68B----- Penn	Severe: seepage.	Severe: piping.	Severe: no water.	Deep to water	Depth to rock, slope.	Depth to rock	Depth to rock.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
68C, 68D----- Penn	Severe: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Depth to rock, slope.	Slope, depth to rock.	Slope, depth to rock.
69*. Pits							
70C----- Porters	Severe: seepage.	Moderate: piping, large stones.	Severe: no water.	Deep to water--	Slope-----	Slope, large stones.	Large stones, slope.
70D, 70E----- Porters	Severe: seepage, slope.	Moderate: piping, large stones.	Severe: no water.	Deep to water--	Slope-----	Slope, large stones.	Large stones, slope.
71B----- Rabun	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
71C----- Rabun	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
71D, 71E----- Rabun	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
72B3----- Rabun	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slow intake, slope.	Favorable-----	Favorable.
72C3----- Rabun	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slow intake, slope.	Slope-----	Slope.
72D3, 72E3----- Rabun	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slow intake, slope.	Slope-----	Slope.
73C----- Rabun	Moderate: seepage.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
73D, 73E----- Rabun	Severe: slope.	Moderate: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
74B----- Rapidan	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
74C, 74D, 75C3, 75D3----- Rapidan	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
76----- Riverview	Severe: seepage.	Severe: piping.	Severe: cutbanks cave.	Deep to water	Flooding-----	Favorable-----	Favorable.
77*: Riverview-----	Severe: seepage.	Severe: piping.	Severe: cutbanks cave.	Deep to water	Flooding-----	Favorable-----	Favorable.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
77*: Chewacla-----	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Flooding-----	Wetness, flooding.	Wetness-----	Wetness.
78----- Rowland	Severe: seepage.	Severe: piping, wetness.	Severe: slow refill, cutbanks cave.	Flooding, frost action.	Wetness, erodes easily, flooding.	Erodes easily, wetness.	Wetness, erodes easily.
79B----- Starr	Moderate: seepage, slope.	Severe: piping.	Severe: no water.	Deep to water	Slope, flooding.	Favorable-----	Favorable.
80B----- Tatum	Moderate: seepage, depth to rock, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
80C----- Tatum	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
81B----- Thurmont	Moderate: seepage, slope.	Moderate: thin layer, piping.	Moderate: deep to water, slow refill.	Deep to water	Slope-----	Favorable-----	Favorable.
81C, 81D----- Thurmont	Severe: slope.	Moderate: thin layer, piping.	Moderate: deep to water, slow refill.	Deep to water	Slope-----	Slope-----	Slope.
82C, 82D----- Thurmont	Severe: slope.	Moderate: thin layer, large stones.	Moderate: deep to water, slow refill.	Deep to water	Slope-----	Slope, large stones.	Large stones, slope.
83----- Toccoa	Severe: seepage.	Severe: piping.	Moderate: deep to water.	Flooding-----	Flooding-----	Favorable-----	Favorable.
84B----- Totier	Moderate: seepage, depth to rock, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Erodes easily	Erodes easily.
84C, 85C3----- Totier	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope, erodes easily.	Slope, erodes easily.	Slope, erodes easily.
86B----- Turbeville	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
86C----- Turbeville	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
87B----- Tusquitee	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Soil name and map symbol	Limitations for--			Features affecting--			
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Terraces and diversions	Grassed waterways
87C----- Tusquitee	Moderate: seepage.	Severe: piping.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
87D----- Tusquitee	Severe: slope.	Severe: piping.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
88. Udorthents							
89B----- Unison	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
89C----- Unison	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
90B----- Unison	Moderate: seepage, slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Large stones---	Large stones.
90C, 90D----- Unison	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Slope-----	Slope, large stones.	Slope, large stones.
91*. Urban land							
92----- Wahee	Slight-----	Severe: wetness.	Severe: slow refill.	Percs slowly, slope.	Wetness, percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.
93C, 93D, 93E----- Watt	Severe: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Droughty, depth to rock, slope.	Slope, large stones, depth to rock.	Large stones, slope, droughty.
94B----- Wedowee	Slight-----	Moderate: piping.	Severe: no water.	Deep to water	Slope-----	Favorable-----	Favorable.
94C----- Wedowee	Slight-----	Moderate: piping.	Severe: no water.	Deep to water	Slope-----	Slope-----	Slope.
95----- Wehadkee	Moderate: seepage.	Severe: wetness.	Slight-----	Flooding-----	Wetness, flooding.	Wetness-----	Wetness.
96B----- Worsham	Moderate: slope.	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, slope.	Wetness, percs slowly, slope.	Wetness, percs slowly.	Wetness, percs slowly.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 14.--ENGINEERING INDEX PROPERTIES

[The symbol < means less than; > means more than. Absence of an entry indicates that data were not estimated]

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
1B----- Abell	0-12	Silt loam-----	SM, ML	A-2, A-4	0	90-100	75-100	50-95	25-85	<30	NP-7
	12-36	Clay, clay loam, silty clay loam.	CL, CH	A-6, A-7	0-5	90-100	75-95	70-95	65-90	30-60	15-30
	36-60	Loam, sandy loam, silt loam.	SM, ML	A-2, A-4	0-5	75-100	75-100	60-95	30-85	<30	NP-7
2B, 2C, 2D----- Albemarle	0-5	Fine sandy loam	SM, SC, ML, CL	A-4	0	95-100	90-100	65-95	40-75	14-30	NP-10
	5-30	Sandy clay loam, clay loam.	SC, CL	A-2, A-4, A-6	0	95-100	90-100	75-100	30-80	25-45	8-20
	30-38	Fine sandy loam, sandy loam, gravelly sandy loam.	SM, ML, CL-ML, CL	A-2, A-4	0	90-100	90-100	60-85	30-55	12-30	NP-10
	38	Weathered bedrock	---	---	---	---	---	---	---	---	---
3C, 3D, 3E----- Albemarle	0-5	Very stony fine sandy loam.	SM, SC, ML, CL	A-4	3-15	90-100	85-100	60-90	36-70	14-30	NP-10
	5-30	Sandy clay loam, clay loam.	SC, CL	A-2, A-4, A-6	0	95-100	90-100	75-100	30-80	25-45	8-20
	30-38	Fine sandy loam, sandy loam, gravelly sandy loam.	SM, ML, CL-ML, CL	A-2, A-4	0	90-100	90-100	60-85	30-55	12-30	NP-10
	38	Weathered bedrock	---	---	---	---	---	---	---	---	---
4B, 4C, 4D, 4E--- Ashe	0-10	Loam-----	SM, SM-SC, ML, CL-ML	A-4	0-15	90-100	85-100	65-95	40-55	<25	NP-7
	10-19	Loam, sandy loam, fine sandy loam.	SM, SM-SC	A-4	5-30	85-100	80-95	60-95	35-49	<25	NP-7
	19-24 24	Sandy loam----- Unweathered bedrock.	SM ---	A-2, A-4 ---	15-30 ---	75-95 ---	70-95 ---	55-95 ---	30-49 ---	--- ---	NP ---
5B----- Belvoir	0-12	Loam-----	ML, SM, CL-ML, SM-SC	A-4	0	90-100	80-100	60-90	25-80	10-30	NP-10
	12-19	Sandy clay loam, clay loam, loam.	SC, CL, SM, ML	A-4, A-6	0	90-100	80-100	75-90	40-80	25-45	7-25
	19-28	Sandy loam, clay loam, loam.	ML, CL, SM, SC	A-2, A-4	0-5	90-100	80-100	60-90	30-70	20-40	NP-20
	28-45	Sandy clay loam, clay loam, loam.	SM, SC, CL, ML	A-2, A-4	0-10	90-100	80-100	55-80	30-70	15-35	NP-15
	45-72	Loam, sandy clay loam, clay.	SM, SC, CL, ML	A-2, A-4, A-6	0-10	90-100	80-100	50-90	40-80	15-50	NP-30
6----- Bermudian	0-4	Silt loam-----	ML	A-4	0	90-100	90-100	70-90	60-80	---	---
	4-45	Silt loam, gravelly silty clay loam, shaly sandy clay loam.	ML, SM, SC	A-4, A-6, A-7	0-10	65-90	60-80	55-75	40-60	30-45	8-15
	45-60	Stratified sand to gravelly sand.	ML, GM, SM, CL-ML	A-2, A-4, A-1	0-15	40-95	25-90	20-80	20-65	<20	NP-5
7B, 7C, 7D----- Braddock	0-8	Loam-----	CL, SM, ML, SC	A-2, A-4	0-5	85-100	75-95	50-85	25-65	<30	NP-10
	8-60	Clay loam, gravelly sandy clay, clay.	MH, CH, CL, SC	A-7, A-2	0-15	70-95	70-90	45-90	20-80	42-60	15-33
8C3----- Braddock	0-4	Clay loam-----	ML, CL	A-6, A-7	0-10	70-95	70-90	65-90	50-85	35-50	15-25
	4-60	Clay loam, gravelly sandy clay, clay.	MH, CH, CL, SC	A-7, A-2	0-15	70-95	70-90	45-90	20-80	42-60	15-33

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
9B, 9C, 9D----- Braddock	0-8	Very stony loam	CL, SM, SC, ML	A-2, A-4	5-20	85-100	75-95	50-85	25-65	<30	NP-10
	8-60	Clay loam, gravelly sandy clay, cobbly clay.	MH, CH, CL, SC	A-7, A-2	0-30	60-95	50-90	40-90	30-80	42-60	15-30
10----- Buncombe	0-10	Loamy sand-----	SM, SP-SM	A-2, A-3	0	98-100	98-100	90-97	7-32	---	NP
	10-60	Loamy sand, sand	SM, SP-SM	A-2, A-3	0	98-100	98-100	98-100	7-32	---	NP
11D*, 11E*: Cataska-----	0-5	Very stony loam	CL-ML, ML, GM, GM-GC	A-4	10-30	45-80	45-75	40-70	40-60	<28	NP-6
	5-20	Slaty silt loam, channery silt loam, very channery silt loam.	GM-GC, GM, GP-GM	A-2, A-1	10-25	15-50	10-45	10-40	10-35	<28	NP-7
	20-38 38	Weathered bedrock Unweathered bedrock.	---	---	---	---	---	---	---	---	---
Hartleton-----	0-7	Very stony loam	SM, ML	A-4	20-40	80-95	70-90	60-90	45-80	---	---
	7-32	Channery silt loam, very channery loam, channery silty clay loam.	GM, ML, SM	A-2, A-4	25-65	60-90	45-80	40-80	30-75	20-30	NP-7
	32-44	Very channery loam, very shaly silt loam.	SM, GM, ML	A-1, A-2, A-4	55-85	40-80	25-70	20-70	15-60	20-30	NP-7
	44	Weathered bedrock	---	---	---	---	---	---	---	---	---
12C, 12D, 12E---- Catoclin	0-5	Silt loam-----	ML, CL, CL-ML	A-4	0-5	80-95	80-90	60-85	50-80	<30	NP-8
	5-18	Channery silt loam, channery silty clay loam.	SM, SC, CL, GM	A-2, A-4, A-6	0-25	50-80	35-75	30-60	25-60	20-34	2-12
	18-28	Very channery silt loam, channery silt loam.	SM, GM, GC, SC	A-2, A-4, A-1, A-3	10-40	30-75	10-60	9-55	7-50	<28	NP-8
	28	Weathered bedrock	---	---	---	---	---	---	---	---	---
13C, 13D, 13E---- Catoclin	0-5	Very stony silt loam.	ML, CL, CL-ML	A-4	5-20	80-90	75-85	70-80	60-70	<30	NP-8
	5-18	Channery silt loam, channery silty clay loam, cobbly silt loam.	SM, SC, CL, GM	A-2, A-4, A-6	0-25	50-80	35-75	30-60	25-60	20-34	2-12
	18-28	Very channery silt loam, channery silt loam.	SM, SC, GC, GM	A-2, A-4, A-1, A-3	10-40	30-75	10-60	9-55	7-50	<28	NP-8
	28	Weathered bedrock	---	---	---	---	---	---	---	---	---
14B, 14C, 14D, 14E----- Chester	0-7	Loam-----	ML, CL	A-4, A-6, A-7	0-10	90-100	90-100	75-90	55-75	33-47	8-12
	7-41	Silty clay loam, silt loam, channery loam.	ML, CL, SM, SC	A-4, A-6, A-7	0-10	85-100	55-100	50-95	40-70	30-50	8-17
	41-60	Loam-----	SM, SC, ML	A-2, A-4, A-7	0-10	80-100	70-100	70-95	30-65	<47	<16

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
15C, 15D, 15E---- Chester	0-7	Very stony loam	ML, CL	A-4, A-6, A-7	3-10	80-100	75-90	65-90	55-75	33-47	8-12
	7-41	Silty clay loam, silt loam, loam.	ML, CL	A-4, A-6, A-7	0-5	85-100	80-100	70-100	50-90	30-50	8-17
	41-60	Loam, sandy loam	SM, SC, ML	A-2, A-4, A-7	0-5	85-100	80-100	50-95	25-65	<45	<16
16----- Chewacla	0-8	Silt loam-----	ML, CL, CL-ML	A-4, A-6, A-7	0	98-100	95-100	70-100	55-90	25-49	4-20
	8-60	Silt loam, silty clay loam, clay loam.	ML, CL	A-4, A-6, A-7	0	96-100	95-100	80-100	51-98	30-49	4-22
17----- Craigsville	0-8	Loam-----	ML, SM, CL-ML, SC	A-2, A-4	0-25	80-95	75-95	45-90	30-85	<25	NP-10
	8-23	Gravelly sandy loam, cobbly loam, very gravelly sandy loam.	SM, GM, GC, SC	A-1, A-2, A-4	25-60	50-80	30-65	25-60	15-40	<25	NP-10
	23-60	Very gravelly loamy sand, very gravelly sandy loam, very cobbly sandy loam.	GC, GM, GP-GM, GM-GC	A-1, A-2	35-75	35-55	30-50	20-45	10-25	<25	NP-8
18B----- Creedmoor	0-8	Loam-----	SM, SM-SC	A-4, A-2	0-3	98-100	95-100	70-90	30-49	<25	NP-7
	8-22	Sandy clay loam, clay loam.	CL	A-7	0-3	98-100	95-100	85-95	60-80	40-50	20-30
	22-70	Clay, silty clay, sandy clay.	CH	A-7	0-3	98-100	95-100	85-97	70-95	51-79	25-49
19B, 19C, 19D---- Cullen	0-8	Loam-----	CL	A-6, A-7, A-4	0	90-100	85-100	75-95	50-75	25-40	7-20
	8-60	Clay, clay loam	MH	A-7	0	90-100	85-100	75-100	65-95	50-70	15-35
	60-67	Clay loam, clay, loam.	CH, MH, CL, ML	A-7, A-6	0	90-100	85-100	75-100	50-85	35-60	11-30
20B3, 20C3, 20D3- Cullen	0-8	Clay loam-----	CL, ML	A-7	0	90-100	85-100	75-100	60-80	35-50	11-25
	8-60	Clay, clay loam	MH	A-7	0	90-100	85-100	75-100	65-95	50-70	15-35
	60-67	Clay loam, clay, loam.	CH, MH, CL, ML	A-7, A-6	0	90-100	85-100	75-100	50-85	35-60	11-30
21B, 21C, 21D---- Culpeper	0-8	Fine sandy loam	SM, ML, CL-ML, SM-SC	A-4	0-5	90-100	85-100	60-95	36-70	<30	NP-8
	8-30	Clay loam, clay	ML, CL, MH, CH	A-7	0-5	95-100	80-100	75-95	55-90	40-65	15-35
	30-37	Sandy clay loam, clay loam.	ML, SM	A-2, A-4, A-6, A-7	0-5	90-100	80-100	70-95	30-75	30-50	5-20
	37-45	Fine sandy loam, gravelly fine sandy loam.	SM, SM-SC, SC	A-4, A-2, A-1	0-15	75-100	50-100	30-75	20-50	10-30	NP-10
22C3----- Culpeper	0-8	Clay loam-----	ML, SM	A-2, A-4, A-6, A-7	0-5	90-100	80-100	70-95	30-75	30-50	5-20
	8-30	Clay loam, clay	ML, CL, MH, CH	A-7	0-5	95-100	80-100	75-95	55-90	40-65	15-35
	30-37	Sandy clay loam, clay loam.	ML, SM	A-2, A-4, A-6, A-7	0-5	90-100	80-100	70-95	30-75	30-50	5-20
	37-45	Fine sandy loam, gravelly fine sandy loam.	SM, SM-SC, SC	A-4, A-2, A-1	0-15	75-100	50-100	30-75	20-50	10-30	NP-10

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
23B, 23C----- Davidson	0-4	Clay loam-----	CL, SC, CL-ML, SM-SC	A-6, A-4	0	94-100	84-100	75-95	40-70	25-40	5-18
	4-10	Clay loam-----	CL	A-6	0	96-100	90-100	75-95	50-75	25-40	11-25
	10-63	Clay-----	CL, CH, ML, MH	A-7, A-6	0	96-100	95-100	85-100	65-85	35-65	15-35
	63-88	Clay, clay loam, sandy clay loam.	CL, ML	A-4, A-6, A-7	0	95-100	90-100	75-100	50-80	20-50	7-25
24B----- Dogue	0-10	Silt loam-----	ML, CL, SM, SC	A-4	0	95-100	75-100	60-100	40-85	<30	NP-10
	10-70	Clay loam, clay, sandy clay loam.	CL, CH, SC	A-6, A-7	0	95-100	75-100	65-100	40-90	35-60	16-40
25B, 25C----- Dyke	0-8	Silt loam-----	ML, CL	A-6, A-7	0-5	90-100	75-100	70-100	60-90	20-35	10-20
	8-64	Clay, silty clay, silty clay loam.	MH, CH, ML, CL	A-7, A-6	0-15	85-100	75-100	65-90	55-80	35-60	10-30
26B3, 26C3, 26D3- Dyke	0-8	Clay loam-----	ML, CL	A-6, A-7	0-5	90-100	75-100	70-100	70-90	30-50	15-30
	8-64	Clay, silty clay, silty clay loam.	MH, CH, ML, CL	A-7, A-6	0-15	85-100	75-100	65-90	55-80	35-60	10-30
27B, 27C, 27D---- Elioak	0-8	Silt loam-----	ML, CL, SM	A-4, A-6, A-7	0-10	90-100	80-100	55-100	35-85	30-45	5-20
	8-39	Silty clay loam, clay loam, silty clay.	CL, CH, MH, ML	A-6, A-7	0-5	90-100	90-100	70-100	50-90	35-58	11-26
	39-72	Silt loam, loam, gravelly fine sandy loam.	ML, SM, GM	A-4, A-5, A-2	0-5	65-100	65-100	60-100	30-85	35-50	NP-10
28C3, 28D3----- Elioak	0-8	Clay loam-----	ML, CL, SM	A-4, A-6, A-7	0-10	90-100	80-100	55-100	35-85	30-45	5-20
	8-39	Silty clay loam, clay loam, silty clay.	CL, CH, MH, ML	A-6, A-7	0-5	90-100	90-100	70-100	50-90	35-58	11-26
	39-72	Silt loam, loam, gravelly fine sandy loam.	ML, SM, GM	A-4, A-5, A-2	0-5	65-100	65-100	60-100	30-85	35-50	NP-10
29B, 29C, 29D, 29E----- Fauquier	0-6	Silt loam-----	CL, CL-ML	A-4, A-6	0	80-100	75-100	65-95	50-95	22-34	4-14
	6-34	Silty clay loam, clay, silty clay.	CL, CH, MH, SC	A-6, A-7	0-5	80-100	75-100	50-95	45-95	36-70	16-36
	34-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
30C3, 30D3----- Fauquier	0-6	Silty clay loam	CL, CL-ML	A-4, A-6	0	80-100	75-100	65-95	50-95	22-34	4-14
	6-34	Silty clay loam, clay, silty clay.	CL, CH, MH, SC	A-6, A-7	0-5	80-100	75-100	50-95	45-95	36-70	16-36
	34-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
31C, 31D----- Fauquier	0-6	Very stony silt loam.	SM-SC, CL, CL-ML, GC	A-4, A-6	5-25	60-80	55-70	50-60	45-60	22-34	4-14
	6-34	Silty clay loam, clay, gravelly silty clay.	CL, CH, MH, SC	A-6, A-7	0-5	80-100	70-100	50-95	45-95	36-70	16-36
	34-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
32B, 32C----- Fluvanna	0-8	Silt loam-----	SM, SC, ML, CL	A-2, A-4, A-6	0	85-100	80-100	55-100	30-90	16-35	NP-16
	8-48	Clay, silty clay, silty clay loam.	MH, CH	A-7	0	95-100	95-100	85-100	70-95	50-80	25-50
	48-60	Clay loam, silty clay loam, gravelly clay loam.	CL, GC, SC	A-6, A-7, A-2	0-5	50-100	45-100	40-100	30-95	30-50	11-25

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
33C----- Fluvanna	0-8	Very stony silt loam.	SM, SC, ML, CL	A-2, A-4, A-6	5-25	85-100	80-100	55-100	30-90	<30	NP-16
	8-48	Clay, silty clay, silty clay loam.	MH, CH	A-7	0-5	95-100	95-100	85-100	70-95	50-80	25-50
	48-60	Clay loam, silty clay loam, gravelly clay loam.	CL, GC, SC	A-6, A-7, A-2	0-5	50-100	45-100	40-100	30-95	35-50	11-25
34B, 34C, 34D, 34E----- Glennelg	0-8	Loam-----	ML	A-4, A-6	0	90-100	85-100	75-95	50-80	32-40	7-12
	8-28	Channery silt loam, silty clay loam, loam.	GM, ML, SM	A-4, A-6, A-7	0-10	60-100	55-90	50-90	35-85	34-46	9-15
	28-80	Loam, sandy loam, channery loam.	GM, SM, ML	A-1, A-2, A-4	0-50	60-100	15-95	15-90	10-70	<40	NP-6
35C*: Hartleton-----	0-7	Very stony loam	SM, ML	A-4	20-40	80-95	70-90	60-90	45-80	---	---
	7-32	Channery silt loam, very channery loam, channery silty clay loam.	GM, ML, SM	A-2, A-4	25-65	60-90	45-80	40-80	30-75	20-30	NP-7
	32-44	Very channery loam, very shaly silt loam.	SM, GM, ML	A-1, A-2, A-4	55-85	40-80	25-70	20-70	15-60	20-30	NP-7
	44	Weathered bedrock	---	---	---	---	---	---	---	---	---
Cataska-----	0-5	Very stony loam	CL-ML, ML, GM, GM-GC	A-4	10-30	45-80	45-75	40-70	40-60	<28	NP-6
	5-20	Slaty silt loam, channery silt loam, very channery silt loam.	GM-GC, GM, GP-GM	A-2, A-1	10-25	15-50	10-45	10-40	10-35	<28	NP-7
	20-38 38	Weathered bedrock Unweathered bedrock.	---	---	---	---	---	---	---	---	---
36B, 36C, 36D, 36E----- Hayesville	0-7	Loam-----	SM, SC, ML, CL	A-4	0	90-100	85-95	70-95	35-60	<25	NP-10
	7-58	Clay loam, clay	ML, MH, CL, CH	A-6, A-7	0	90-100	85-100	70-100	55-75	36-55	11-25
	58-83	Sandy clay loam, clay loam.	SM, ML, MH, CL	A-6, A-7	0-5	90-100	90-100	85-95	45-65	36-55	11-25
37B3, 37C3, 37D3, 37E3----- Hayesville	0-7	Clay loam-----	SM, SC, ML, CL	A-4	0	90-100	85-95	70-95	35-60	<25	NP-10
	7-58	Clay loam, clay	ML, MH, CL, CH	A-6, A-7	0	90-100	85-100	70-100	55-75	36-55	11-25
	58-83	Sandy clay loam, clay loam.	SM, ML, MH, CL	A-6, A-7	0-5	90-100	90-100	85-95	45-65	36-55	11-25
38C, 38D, 38E---- Hayesville	0-7	Very stony loam	SM, SC, ML, CL	A-4, A-6	5-25	90-100	85-100	60-95	36-75	<35	NP-15
	7-58	Clay loam, clay	ML, MH, CL, CH	A-6, A-7	0-5	90-100	85-100	75-100	60-95	35-70	11-30
	58-83	Sandy clay loam, clay loam.	SM, ML, MH, CL	A-2, A-6, A-7	0-5	90-100	85-100	70-100	30-80	30-55	11-25

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Fragments > 3 inches	Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
39C, 39D, 39E--- Hazel	0-10	Loam-----	ML, CL-ML	A-4	0-10	80-100	75-100	65-95	50-80	20-32	2-8
	10-20	Channery fine sandy loam, channery sandy loam, silt loam.	SM, SC, ML, GM	A-2, A-4, A-1	0-30	60-95	50-95	30-95	15-85	20-32	NP-8
	20-30	Channery fine sandy loam, channery loam, channery silt loam.	SM, SM-SC, GM, ML	A-2, A-4, A-1	0-30	60-80	45-70	30-70	20-60	20-32	NP-8
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
40D, 40E----- Hazel	0-10	Very stony loam	SM, SM-SC, SC	A-2, A-4	5-15	65-80	45-70	40-55	30-50	15-30	2-8
	10-20	Channery fine sandy loam, channery sandy loam, silt loam.	SM, SC, ML, GM	A-2, A-4, A-1	5-30	60-95	50-95	30-95	15-85	20-32	NP-8
	20-30	Channery fine sandy loam, channery loam, channery silt loam.	SM, SM-SC, GM, ML	A-2, A-4, A-1	0-30	60-80	45-70	30-70	20-60	20-32	NP-8
	30	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
41B, 41C----- Hiwassee	0-8	Loam-----	CL, ML, CL-ML	A-7, A-6, A-4	0-2	95-100	95-100	90-100	50-85	25-49	5-23
	8-64	Clay, silty clay, clay loam.	CL, ML, MH	A-7, A-7, A-6	0-2	95-100	95-100	80-100	51-95	40-80	12-36
42B3, 42C3, 42D3- Hiwassee	0-8	Clay loam-----	CL, ML, CL-ML	A-7, A-6, A-4	0-2	95-100	95-100	90-100	50-85	25-49	5-23
	8-64	Clay, silty clay, clay loam.	CL, ML, MH	A-7, A-7, A-6	0-2	95-100	95-100	80-100	51-95	40-80	12-36
43B, 43C, 43D, 43E----- Klinesville	0-4	Channery silt loam	GM, SM	A-2, A-4	0-10	55-85	45-60	35-50	25-40	---	---
	4-10	Channery silt loam, very shaly silt loam.	GM, GP, SM, SP	A-2, A-1, A-4	0-10	25-75	15-55	10-50	4-40	20-35	NP-9
	10-14	Channery silt loam, very shaly silt loam.	GM, GP, SM, SP	A-2, A-1	0-20	15-60	10-50	10-40	4-30	20-35	NP-7
	14	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
44C, 44D----- Lew	0-7	Very stony silt loam.	ML, GM, CL, GC	A-2, A-4	5-70	35-85	30-75	28-70	25-60	<28	NP-8
	7-60	Channery clay loam, very channery silty clay loam.	ML, MH, GM, SM	A-2, A-4, A-6, A-7	15-70	40-90	30-75	28-75	25-70	32-56	8-20
45C, 45D----- Lew	0-7	Extremely stony silt loam.	ML, GM, CL, GC	A-2, A-4	5-70	35-85	30-75	28-70	25-60	<28	NP-8
	7-60	Channery clay loam, very channery silty clay loam.	ML, MH, GM, SM	A-2, A-4, A-6, A-7	15-70	40-90	30-75	28-75	25-70	32-56	8-20

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth <u>In</u>	USDA texture	Classification		Frag- ments > 3 inches <u>Pct</u>	Percentage passing sieve number--				Liquid limit <u>Pct</u>	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
46B----- Lignum	0-9	Silt loam-----	CL	A-4, A-6	0	95-100	95-100	80-100	55-90	20-35	9-19
	9-38	Silty clay loam, silty clay,	CH, CL	A-7	0-5	80-100	75-95	70-85	55-85	45-65	22-36
	38-58	Sandy clay loam, gravelly sandy clay loam, gravelly silty clay loam.	SC, CL, ML, SM	A-4, A-6, A-7, A-2	0-15	70-85	35-80	30-80	20-75	30-50	8-18
	58	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
47C, 47D, 47E---- Louisburg	0-5	Sandy loam-----	SM, SM-SC	A-2	0-15	80-100	75-95	50-80	25-35	<30	NP-6
	5-60	Sandy loam-----	SM, SM-SC	A-2, A-4	0-15	85-100	75-98	53-78	25-40	<40	NP-7
	60	Weathered bedrock	---	---	---	---	---	---	---	---	---
48D, 48E----- Louisburg	0-5	Very stony sandy loam	SM	A-2, A-1	25-38	83-95	70-83	43-65	14-23	---	NP
	5-60	Stony sandy loam	SM, SM-SC	A-2, A-4	25-38	83-95	75-83	50-70	25-39	<40	NP-7
	60	Weathered bedrock	---	---	---	---	---	---	---	---	---
49B----- Manassas	0-18	Silt loam-----	ML, CL, CL-ML	A-4	0	90-100	85-100	75-100	55-90	20-34	2-15
	18-64	Silt loam, silty clay loam, clay loam.	CL, ML	A-6, A-4	0	90-100	85-100	80-100	60-95	30-45	7-20
50D, 50E----- Manor	0-8	Loam-----	ML	A-4, A-6	0	95-100	80-100	70-100	50-90	32-40	6-12
	8-18	Loam, silt loam, channery loam.	SM, ML, GM	A-4, A-6	0-10	70-95	60-95	50-95	35-85	26-40	4-12
	18-62	Loam, sandy loam, channery sandy loam.	SM, ML, CL-ML, SM-SC	A-1, A-2, A-4, A-6	0-5	70-100	60-100	35-95	20-75	20-40	2-12
51B, 51C, 51D, 51E----- Manteo	0-6	Channery silt loam.	GM, ML, CL, GC	A-4	10-25	60-100	55-95	50-90	36-85	18-32	2-15
	6-18	Very channery silt loam, channery silt loam, channery clay loam.	GM, GC, ML, CL	A-1, A-2, A-4, A-6	15-40	40-90	30-90	30-85	20-80	18-38	2-20
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
52D, 52E----- Manteo	0-6	Very channery silt loam.	GM, ML, CL, GC	A-1, A-2, A-4, A-6	25-40	45-90	35-90	30-85	20-80	18-32	2-15
	6-18	Very channery silt loam, channery silt loam, channery clay loam.	GM, GC, ML, CL	A-1, A-2, A-4, A-6	15-40	40-90	30-90	30-85	20-80	18-38	2-20
	18	Unweathered bedrock.	---	---	---	---	---	---	---	---	---
53B, 53C----- Masada	0-7	Loam-----	ML, SM, SC, CL	A-4	0-5	90-100	75-100	60-85	35-70	<30	NP-8
	7-33	Clay loam, clay, gravelly clay.	MH, ML, CH, CL	A-7	0-10	80-100	70-100	65-90	50-80	45-65	20-35
	33-62	Clay loam, gravelly clay loam.	CL	A-6, A-7	0-10	80-100	70-100	65-90	50-80	30-45	15-25
54B, 54C----- Mayodan	0-10	Loam-----	SM, ML, SM-SC	A-2, A-4	0-5	92-100	90-100	49-75	30-65	<36	NP-5
	10-53	Clay, clay loam, sandy clay.	MH, CH	A-7	0-2	95-100	95-100	95-100	50-90	60-80	28-40
	53-60	Weathered bedrock	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
55B----- McQueen	0-7	Loam-----	ML, CL-ML	A-4	0	95-100	95-100	85-100	70-95	<40	NP-10
	7-42	Silty clay, clay loam, clay.	ML, CL	A-7, A-6	0	95-100	95-100	90-100	85-98	30-50	10-25
	42-52	Clay loam, silty clay loam, sandy clay loam.	ML, CL	A-6, A-4, A-7	0	95-100	95-100	90-100	60-90	28-43	8-20
	52-64	Sandy clay loam, clay loam, sandy loam.	CL, SM-SC, SC, ML	A-2, A-4, A-6	0	95-100	95-100	50-100	15-65	<35	NP-20
56B, 56C----- Meadowville	0-14	Loam-----	ML, CL, CL-ML	A-4	0	90-100	75-100	65-95	50-85	18-32	2-10
	14-46	Loam, silty clay loam, clay loam.	CL, ML	A-4, A-6, A-7	0	90-100	75-100	65-95	50-85	28-50	8-20
	46-73	Sandy clay loam, sandy clay.	SC, CL, MH, CH	A-2, A-6, A-7	0-5	75-95	75-95	60-85	25-55	30-55	10-24
57B----- Mount Lucas	0-10	Silt loam-----	ML	A-4	0-5	95-100	80-100	75-95	60-90	---	---
	10-48	Silt loam, gravelly silty clay loam, sandy clay loam.	ML, GM, SM	A-4, A-2, A-7, A-5	0-10	70-95	55-95	45-95	30-90	30-49	3-15
	48-64	Gravelly clay loam, gravelly loam, gravelly loamy sand.	SP-SM, SM, ML, GM	A-2, A-4, A-6, A-1	0-10	45-80	30-70	15-70	10-55	25-40	NP-11
58B, 58C, 58D, 58E----- Myersville	0-7	Silt loam-----	ML, CL, CL-ML	A-4	0-3	95-100	95-100	80-95	55-85	18-28	2-10
	7-28	Silty clay loam, clay loam, channery clay loam.	CL	A-6	0-3	70-95	60-95	55-90	50-85	28-38	12-20
	28-44	Silt loam, channery silt loam, very channery clay loam.	CL, CL-ML, GM, GC	A-1, A-2, A-3, A-4	0-3	25-90	20-85	12-75	8-60	<28	NP-10
	44-65	Weathered bedrock	---	---	---	---	---	---	---	---	---
59C, 59D, 59E---- Myersville	0-7	Very stony silt loam.	ML, CL, CL-ML	A-4	5-25	95-100	90-100	80-95	55-85	18-28	2-10
	7-28	Silty clay loam, clay loam, channery clay loam.	CL	A-6	3-20	75-95	70-95	55-90	50-85	28-38	12-20
	28-44	Silty clay loam, channery silt loam, very channery clay loam.	CL, CL-ML, GM, GC	A-1, A-2, A-3, A-4	3-20	30-85	20-75	12-70	8-65	<28	NP-10
	44-65	Weathered bedrock	---	---	---	---	---	---	---	---	---
60C*, 60D*, 60E*: Myersville-----	0-7	Very stony silt loam.	ML, CL, CL-ML	A-4	5-25	95-100	90-100	80-95	55-85	18-28	2-10
	7-28	Silty clay loam, clay loam, channery clay loam.	CL	A-6	3-20	75-95	70-95	55-90	50-85	28-38	12-20
	28-44	Silty clay loam, channery silt loam, very channery clay loam.	CL, CL-ML, GM, GC	A-1, A-2, A-3, A-4	3-20	30-85	20-75	12-70	8-65	<28	NP-10
	44-65	Weathered bedrock	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
60C*, 60D*, 60E*: Catoctin-----	<u>In</u>										
	0-5	Very stony silt loam.	ML, CL, CL-ML	A-4	5-20	80-90	75-85	70-80	60-70	<30	NP-8
	5-18	Channery silt loam, channery silty clay loam, cobbly silt loam.	SM, SC, CL, GM	A-2, A-4, A-6	0-25	50-80	35-75	30-60	25-60	20-34	2-12
	18-28	Very channery silt loam, channery silt loam.	SM, SC, GC, GM	A-2, A-4, A-1, A-3	10-40	30-75	10-60	9-55	7-50	<28	NP-8
	28	Weathered bedrock	---	---	---	---	---	---	---	---	---
61D*, 61E*: Myersville-----											
	0-7	Very stony silt loam.	ML, CL, CL-ML	A-4	5-25	95-100	90-100	80-95	55-85	18-28	2-10
	7-28	Silty clay loam, clay loam, channery clay loam.	CL	A-6	3-20	75-95	70-95	55-90	50-85	28-38	12-20
	28-44	Silty clay loam, channery silt loam, very channery clay loam.	CL, CL-ML, GM, GC	A-1, A-2, A-3, A-4	3-20	30-85	20-75	12-70	8-65	<28	NP-10
	44-65	Weathered bedrock	---	---	---	---	---	---	---	---	---
Rock outcrop.											
62B, 62C, 62D----- Nason											
	0-8	Silt loam-----	ML, CL-ML, SM	A-4	0-5	80-100	75-100	55-95	35-85	<38	NP-10
	8-39	Silty clay loam, silty clay, clay.	CL, CH	A-7	0-5	80-100	75-100	70-95	65-90	40-60	15-30
	39-50	Channery silt loam, silt loam.	CL-ML, SC, GM-GC	A-2, A-4, A-6	0-5	50-80	45-75	40-75	30-70	20-35	4-12
63B----- Orange											
	0-9	Silt loam-----	SM, ML, CL-ML, SM-SC	A-4	0	90-95	85-95	75-95	45-85	<24	NP-6
	9-33	Clay, silty clay, silty clay loam.	CH	A-7	0	90-95	85-95	75-95	65-90	70-99	45-70
	33-60	Silt loam, very channery silt loam, sandy clay loam.	SC, CL	A-6, A-7	0-40	70-100	50-100	45-100	40-90	25-45	10-25
64B----- Orange											
	0-9	Very stony silt loam.	SM, ML, CL-ML, SM-SC	A-4	5-25	90-95	85-95	75-95	45-85	<24	NP-6
	9-33	Clay, silty clay, silty clay loam.	CH	A-7	0-15	90-95	85-95	75-95	65-90	70-99	45-70
	33-60	Silt loam, very channery silt loam, sandy clay loam.	CL, SC	A-6, A-7	0-15	70-100	50-100	45-100	40-90	25-45	10-25
65B, 65C----- Pacolet											
	0-6	Sandy loam-----	SM, SM-SC	A-2, A-1	0-2	85-100	80-100	42-80	16-35	<28	NP-7
	6-32	Sandy clay, clay loam, clay.	ML, MH, CL	A-6, A-7	0-1	80-100	80-100	60-95	51-75	38-65	11-30
	32-60	Clay loam, sandy clay loam, sandy loam.	CL, CL-ML, SM-SC, SC	A-2, A-4, A-6	0-2	80-100	70-100	60-80	30-60	20-35	5-15

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index	
			Unified	AASHTO		4	10	40	200			
	<u>In</u>				<u>Pct</u>					<u>Pct</u>		
66C, 66D, 66E---- Parker	0-14	Very stony sandy loam.	GM, GP-GM	A-1, A-2	5-10	40-60	25-50	15-45	10-30	10-20	2-7	
	14-38	Very gravelly loam, cobbly sandy loam, very gravelly sandy loam.	GM, GP-GM, GC	A-1, A-2	5-10	40-60	30-55	20-50	10-35	15-25	2-10	
	38-67	Very gravelly sandy loam, very gravelly loam.	GM, GP, GC	A-1, A-2	5-15	20-40	5-30	3-25	2-20	15-25	2-10	
67D, 67E----- Parker	0-14	Extremely stony sandy loam.	GM, GP-GM	A-1, A-2	10-15	40-60	25-50	15-45	10-30	10-20	2-7	
	14-38	Very gravelly loam, cobbly sandy loam, very gravelly sandy loam.	GM, GP-GM, GC	A-1, A-2	5-10	40-60	30-55	20-50	10-35	15-25	2-10	
	38-67	Very gravelly sandy loam, very gravelly loam.	GM, GP, GC	A-1, A-2	5-15	20-40	5-30	3-25	2-20	15-25	2-10	
68B, 68C, 68D---- Penn	0-7	Silt loam-----	ML	A-4	0-5	95-100	90-100	85-95	60-85	---	---	
	7-21	Shaly silt loam, shaly loam, shaly silty clay loam.	ML, SM, GM	A-4, A-2	0-10	55-100	50-100	45-95	30-75	20-37	1-10	
	21-29	Very shaly silt loam, very shaly loam.	ML, CL, SM, GM	A-4, A-2, A-1	0-15	35-100	20-100	15-95	15-70	20-35	3-10	
	29	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	
69*. Pits	70C, 70D, 70E---- Porters	0-8	Very stony loam	ML, SM, SM-SC, CL-ML	A-2, A-4	5-35	75-95	70-85	50-70	30-55	<30	NP-7
	8-26	Loam, clay loam	ML, SM	A-4, A-7, A-5	5-15	80-95	70-85	60-70	36-55	35-50	4-15	
	26-32	Loam, sandy loam	SM, SM-SC	A-2, A-4	5-25	75-99	60-99	50-90	30-50	<25	NP-7	
	32-59	Unweathered bedrock.	---	---	---	---	---	---	---	---	---	
71B, 71C, 71D, 71E----- Rabun	0-6	Clay loam-----	ML, CL, SM, SC	A-6, A-7, A-4	0-2	90-100	75-100	70-100	45-70	25-45	6-20	
	6-48	Clay loam, clay, silty clay.	ML, CL, MH, CH	A-7	0-5	90-100	80-100	65-96	55-90	41-61	12-30	
	48-63	Clay, clay loam, silty clay loam.	ML, CL	A-7, A-6	0-13	90-100	70-100	65-95	51-85	36-50	11-23	
72B3, 72C3, 72D3, 72E3----- Rabun	0-4	Clay-----	ML, CL, MH, CH	A-7	0-5	90-100	70-100	65-96	51-90	41-61	12-30	
	4-48	Clay, silty clay, clay loam.	MH, CH, ML, CL	A-7	0-5	90-100	80-100	65-96	55-90	41-61	12-30	
	48-63	Clay, clay loam, silty clay loam.	ML, CL	A-7, A-6	0-13	90-100	70-100	65-95	51-85	36-50	12-23	
73C, 73D, 73E---- Rabun	0-6	Very stony clay loam	SM-SC, SM, SC	A-4, A-6	15-25	75-95	55-85	50-80	35-50	20-35	4-12	
	6-48	Clay loam, clay	ML, CL, MH, CH	A-7	0-5	90-100	80-100	65-96	55-86	41-61	12-30	
	48-63	Clay, cobbly loam, gravelly clay loam.	ML, CL, MH, CH	A-6, A-7	5-20	80-95	70-90	55-85	51-80	35-60	11-28	

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
74B, 74C, 74D--- Rapidan	0-6	Silt loam-----	ML, CL-ML, CL	A-4	0-5	85-100	80-100	70-95	55-90	20-35	NP-10
	6-54	Silty clay loam, clay, shaly silty clay loam.	CL, CH, MH, SC	A-6, A-7	0-5	75-100	50-100	50-95	45-90	40-70	20-40
	54-70	Very shaly silty clay loam, very shaly clay loam, loam.	GM, GC	A-2, A-4, A-6	35-50	40-60	35-50	35-50	30-45	25-45	7-20
75C3, 75D3----- Rapidan	0-6	Silty clay loam	CL, ML	A-4, A-6	0-5	85-100	80-100	75-95	65-95	30-45	10-20
	6-54	Silty clay loam, clay, shaly silty clay loam.	CL, CH, MH, SC	A-6, A-7	0-5	75-100	50-100	50-95	45-90	40-70	20-40
	54-70	Very shaly silty clay loam, very shaly clay loam, loam.	GM, GC	A-2, A-4, A-6	35-50	40-60	35-50	35-50	30-45	25-45	7-20
76----- Riverview	0-12	Loam-----	CL, CL-ML, ML	A-4	0	100	100	90-100	60-80	15-30	5-10
	12-35	Sandy clay loam, silty clay loam, loam.	CL, ML, CL-ML	A-4, A-6	0	100	100	90-100	60-95	20-40	4-20
	35-60	Loamy fine sand, sandy loam, sand.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	100	50-95	15-45	<30	NP-7
77*: Riverview-----	0-12	Loam-----	CL, CL-ML, ML	A-4	0	100	100	90-100	60-80	15-30	5-10
	12-35	Sandy clay loam, silty clay loam, loam.	CL, ML, CL-ML	A-4, A-6	0	100	100	90-100	60-95	20-40	4-20
	35-60	Loamy fine sand, sandy loam, sand.	SM, SC, SM-SC	A-2, A-4, A-6	0	100	100	50-95	15-45	<30	NP-7
Chewacla-----	0-8	Silt loam-----	ML, CL, CL-ML	A-4, A-6, A-7	0	98-100	95-100	70-100	55-90	25-49	4-20
	8-60	Silt loam, silty clay loam, clay loam.	ML, CL	A-4, A-6, A-7	0	96-100	95-100	80-100	51-98	30-49	4-22
78----- Rowland	0-11	Silt loam-----	ML, SM	A-4	0-5	95-100	95-100	75-100	35-95	---	---
	11-38	Silt loam, loam, sandy clay loam.	ML, SM	A-4, A-7, A-6	0-5	95-100	95-100	75-100	35-95	24-45	NP-15
	38-60	Sandy clay, silt loam, gravelly silty clay loam.	ML, SM	A-4, A-6, A-7	0-10	90-100	70-100	65-100	35-95	25-50	3-17
79B----- Starr	0-18	Silt loam-----	ML, CL-ML, CL	A-4, A-6, A-7	0	90-100	90-100	70-95	51-85	20-50	3-23
	18-68	Clay loam, sandy clay loam, silty clay loam.	ML, CL-ML, CL	A-4, A-6, A-7	0	95-100	95-100	70-95	51-80	20-50	3-23
80B, 80C----- Tatum	0-6	Silt loam-----	ML, CL, SM	A-4	0	85-100	80-100	65-100	40-90	20-34	NP-10
	6-42	Silty clay loam, silty clay, clay.	MH	A-7	0	75-100	70-100	60-100	55-95	50-80	10-36
	42-51	Silt loam, loam, silty clay loam.	CL	A-6, A-7	0	75-100	70-100	60-90	60-85	30-45	12-20
	51	Weathered bedrock	---	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth	USDA texture	Classification		Frag-ments > 3 inches	Percentage passing sieve number--				Liquid limit	Plas-ticity index
			Unified	AASHTO		4	10	40	200		
	In				Pct					Pct	
81B, 81C, 81D----- Thurmont	0-10	Loam-----	SM, ML, CL, SM-SC	A-2, A-4	0-3	80-100	75-100	55-70	25-65	<30	NP-10
	10-46	Clay loam, loam, gravelly sandy clay loam.	SC, CL	A-2, A-6, A-7	0-5	80-100	70-90	65-80	30-60	30-45	12-20
	46-56	Sandy loam, sandy clay loam, gravelly sandy clay loam.	SC	A-2, A-6, A-7	0-5	75-90	70-90	45-75	30-45	30-45	12-25
	56-68	Cobbly sandy loam, gravelly sandy clay loam.	SM, SM-SC	A-1, A-2	0-30	70-85	50-75	30-50	15-35	<20	NP-7
82C, 82D----- Thurmont	0-10	Very stony loam	SM, ML, CL, SM-SC	A-1, A-2, A-4	5-25	75-95	60-80	40-70	20-55	<30	NP-10
	10-46	Clay loam, loam, gravelly sandy clay loam.	SC, CL	A-2, A-6, A-7	2-20	75-90	55-75	45-70	20-55	25-45	7-25
	46-56	Sandy loam, sandy clay loam, gravelly sandy clay loam.	SC, CL	A-2, A-6, A-7	2-20	75-90	55-75	35-60	20-40	25-40	7-20
	56-68	Cobbly sandy loam, gravelly sandy clay loam.	SM, SM-SC	A-1, A-2	15-40	70-85	45-75	30-50	15-35	<20	NP-7
83----- Toccoa	0-9	Fine sandy loam	SM, ML	A-2, A-4	0	98-100	95-100	85-100	20-60	<30	NP-4
	9-66	Sandy loam, loam	SM, ML	A-2, A-4	0	95-100	90-100	60-100	30-55	<30	NP-4
84B, 84C----- Totier	0-8	Silt loam-----	ML, CL	A-4	0	90-100	75-100	70-95	60-90	20-35	NP-15
	8-40	Silty clay, clay, shaly silty clay loam.	ML, MH, CL, CH	A-6, A-7	0	95-100	60-100	60-100	55-95	45-70	25-45
	40-49	Shaly silty clay loam, very shaly silt loam, shaly silty clay.	SC, SM	A-2, A-4, A-6	0-5	60-95	25-70	25-65	20-60	30-45	10-25
	49-63	Weathered bedrock	---	---	---	---	---	---	---	---	---
85C3----- Totier	0-8	Silty clay loam	ML, CL	A-6, A-7	0	90-100	75-100	70-100	65-95	30-45	10-25
	8-40	Silty clay, clay, shaly silty clay loam.	ML, MH, CL, CH	A-6, A-7	0	95-100	60-100	60-100	55-95	45-70	25-45
	40-49	Shaly silty clay loam, very shaly silt loam, shaly silty clay.	SC, SM	A-2, A-4, A-6	0-5	60-95	25-70	25-65	20-60	30-45	10-25
	49-63	Weathered bedrock	---	---	---	---	---	---	---	---	---
86B, 86C----- Turbeville	0-12	Loam-----	ML, SM, CL-ML	A-2, A-4	0-20	80-100	75-100	50-90	30-75	<28	NP-7
	12-75	Clay, clay loam, sandy clay.	CL, MH, CH	A-7	0-20	70-100	65-100	60-100	55-95	45-65	16-35
87B, 87C, 87D----- Tusquitee	0-9	Stony loam-----	ML, MH, SM	A-5, A-7	2-10	90-100	80-100	65-95	40-75	40-55	5-15
	9-45	Clay loam, sandy clay loam, loam.	ML, CL-ML, SM-SC, SM	A-4, A-6	2-15	90-100	75-100	65-95	36-75	25-40	4-12
	45-63	Gravelly sandy loam, gravelly fine sandy loam.	GM, SM-SC, SM, GM-GC	A-4, A-1, A-2	15-50	45-90	40-85	30-75	13-50	<25	NP-7
88. Udorthents											

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Soil name and map symbol	Depth In	USDA texture	Classification		Frag- ments > 3 inches Pct	Percentage passing sieve number--				Liquid limit Pct	Plas- ticity index
			Unified	AASHTO		4	10	40	200		
89B, 89C----- Unison	0-6	Silt loam-----	CL, ML CL-ML, SM	A-4, A-6	0-25	75-100	75-100	60-95	50-90	20-38	2-15
	6-58	Clay loam, clay gravelly silty clay.	CL, CH	A-6, A-7	0-25	75-100	65-100	60-100	55-95	35-65	15-35
	58-60	Cobbly clay loam, silty clay loam, very gravelly loam.	CL-ML, CL ML, GM-GC	A-1, A-2, A-6, A-7	10-45	30-90	25-85	20-85	15-80	20-50	5-20
90B, 90C, 90D---- Unison	0-6	Very stony silt loam.	CL, ML, CL-ML, SM	A-4, A-6	5-40	75-100	75-100	60-95	50-90	20-38	2-15
	6-58	Clay loam, clay, gravelly silty clay.	CL, CH	A-6, A-7	0-25	75-100	65-100	60-100	55-95	35-65	
	58-60	Cobbly clay loam, silty clay loam, very gravelly loam.	CL-ML, CL ML, GM-GC	A-1, A-2, A-6, A-7	10-45	30-90	25-85	20-85	15-80	20-50	5-20
91*. Urban land											
92----- Wahee	0-9	Silt loam-----	ML, CL-ML	A-4	0	100	100	90-98	51-75	20-35	2-10
	9-60	Clay, clay loam, silty clay.	CL, CH	A-6, A-7	0	100	100	85-100	51-90	38-70	18-42
93C, 93D, 93E---- Watt	0-10	Channery silt loam.	CL-ML, ML, SM	A-4, A-6	10-20	80-90	50-80	45-75	40-60	15-35	NP-15
	10-18	Channery silt loam, channery silty clay loam.	SM-SC, CL, CL-ML	A-4, A-6	10-20	80-90	50-80	45-80	40-70	20-40	5-20
	18-28	Very channery silt loam, channery silt loam, channery loam.	GM, GM-GC, GC	A-2, A-4, A-6	15-40	60-80	30-55	25-50	20-45	15-35	NP-15
	28-60	Weathered bedrock	---	---	---	---	---	---	---	---	---
94B, 94C----- Wedowee	0-7	Sandy loam-----	SM, SM-SC	A-4, A-2	0	95-100	90-100	60-99	23-50	<30	NP-6
	7-11	Loam, sandy clay loam.	SM, SC, CL, ML	A-4, A-6	0	90-100	90-100	80-97	40-75	<32	NP-15
	11-30	Sandy clay, clay loam, clay.	SC, ML, CL, SM	A-6, A-7	0	95-100	95-100	65-97	45-71	30-58	10-25
	30-60	Variable-----	---	---	---	---	---	---	---	---	---
95----- Wehadkee	0-10	Silt loam-----	CL, MH, ML	A-6, A-7	0	100	98-100	85-100	51-98	30-58	10-24
	10-52	Loam, sandy clay loam, clay loam.	ML, CL, CL-ML	A-6, A-7, A-4	0	100	99-100	85-100	51-85	25-45	7-20
	52-62	Variable-----	---	---	---	---	---	---	---	---	---
96B----- Worsham	0-9	Loam-----	CL, CL-ML	A-4, A-6	0-5	90-100	85-100	70-100	50-90	20-35	4-12
	9-54	Sandy clay loam, sandy clay, clay.	SC, CH, CL	A-2, A-7	0-5	90-100	85-100	70-100	30-95	42-66	22-40
	54-60	Sandy loam, sandy clay loam, clay loam.	SC, CL	A-2, A-4, A-6, A-7	0-10	90-95	80-95	50-90	30-70	20-50	8-30

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS

[The symbol < means less than; > means more than. Entries under "Erosion factors--T" apply to the entire profile. Entries under "Wind erodibility group" and "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm ³	In/hr	In/in	pH					Pct
1B----- Abell	0-12	10-27	1.25-1.55	0.6-6.0	0.12-0.20	4.5-5.5	Low-----	0.28	4	---	.5-2
	12-36	30-45	1.35-1.65	0.6-2.0	0.11-0.17	4.5-5.5	Moderate----	0.28			
	36-60	10-27	1.45-1.65	0.6-6.0	0.08-0.18	4.5-5.5	Low-----	0.28			
2B, 2C, 2D----- Albemarle	0-5	10-27	1.35-1.55	2.0-6.0	0.15-0.20	4.5-5.5	Low-----	0.37	3	---	1-2
	5-30	20-35	1.30-1.50	0.6-2.0	0.13-0.18	4.5-5.5	Low-----	0.37			
	30-38	5-25	1.20-1.40	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.28			
	38	---	---	---	---	---	---	---			
3C, 3D, 3E----- Albemarle	0-5	10-25	1.35-1.55	2.0-6.0	0.12-0.17	4.5-5.5	---	---	---	---	1-2
	5-30	20-35	1.30-1.50	0.6-2.0	0.13-0.18	4.5-5.5	Low-----	0.37			
	30-38	5-25	1.20-1.40	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.28			
	38	---	---	---	---	---	---	---			
4B, 4C, 4D, 4E--- Ashe	0-10	10-25	1.35-1.60	2.0-6.0	0.13-0.18	4.5-6.0	Low-----	0.24	2	---	1-3
	10-19	10-25	1.35-1.60	2.0-6.0	0.10-0.14	4.5-6.0	Low-----	0.17			
	19-24	5-15	1.45-1.65	2.0-6.0	0.08-0.12	4.5-6.0	Low-----	0.17			
	24	---	---	---	---	---	---	---			
5B----- Belvoir	0-12	7-25	1.30-1.60	0.6-6.0	0.10-0.18	4.5-5.5	Low-----	0.37	4	---	.5-2
	12-19	20-35	1.35-1.65	0.6-2.0	0.13-0.18	4.5-5.5	Moderate----	0.37			
	19-28	15-30	1.70-1.90	0.06-0.2	0.07-0.11	4.5-5.5	Low-----	0.28			
	28-45	10-30	1.35-1.65	0.6-2.0	0.10-0.15	4.5-5.5	Low-----	0.28			
	45-72	10-45	1.25-1.55	0.06-2.0	0.10-0.15	4.5-5.5	Moderate----	0.28			
6----- Bermudian	0-4	10-25	1.25-1.40	0.6-6.0	0.12-0.16	4.5-6.0	Low-----	0.37	4	---	2-3
	4-45	17-35	1.30-1.50	0.6-6.0	0.12-0.16	4.5-6.0	Low-----	0.28			
	45-60	5-20	1.35-1.55	6.0-20	0.04-0.08	4.5-6.0	Low-----	0.17			
7B, 7C, 7D----- Braddock	0-8	10-25	1.20-1.50	0.6-6.0	0.14-0.19	3.6-5.5	Low-----	0.32	4	---	1-2
	8-60	35-55	1.20-1.50	0.6-2.0	0.12-0.17	4.5-5.5	Moderate----	0.24			
8C3----- Braddock	0-4	27-40	1.20-1.50	0.6-2.0	0.14-0.19	4.5-5.5	Low-----	0.32	3	---	.5-1
	4-60	35-55	1.20-1.50	0.6-2.0	0.12-0.17	4.5-5.5	Moderate----	0.24			
9B, 9C, 9D----- Braddock	0-8	10-25	1.00-1.20	0.6-6.0	0.14-0.19	3.6-5.5	Low-----	0.20	4	---	1-2
	8-60	35-55	1.20-1.50	0.6-2.0	0.14-0.19	3.6-5.5	Moderate----	0.24			
10----- Buncombe	0-10	3-12	1.60-1.75	>6.0	0.06-0.10	6.1-6.5	Low-----	0.10	5	---	.5-1
	10-60	3-12	1.60-1.75	>6.0	0.03-0.07	4.5-6.0	Low-----	0.10			
11D*, 11E*: Cataska	0-5	12-22	1.30-1.40	2.0-20	0.10-0.14	4.5-5.5	Low-----	0.15	1	---	.5-2
	5-20	12-22	1.30-1.45	2.0-20	0.04-0.09	4.5-5.5	Low-----	0.15			
	20-38	---	---	---	---	---	---	---			
	38	---	---	---	---	---	---	---			
Hartleton-----	0-7	10-25	1.20-1.40	0.6-6.0	0.10-0.14	4.5-5.5	Low-----	0.15	3	---	.5-2
	7-32	15-27	1.40-1.60	0.6-6.0	0.06-0.10	4.5-5.5	Low-----	0.20			
	32-44	15-27	1.40-1.60	0.6-6.0	0.04-0.08	4.5-5.5	Low-----	0.20			
	44	---	---	---	---	---	---	---			
12C, 12D, 12E, 13C, 13D, 13E--- Catoclin	0-5	5-20	1.20-1.50	2.0-6.0	0.14-0.20	5.1-6.5	Low-----	0.32	2	---	1-3
	5-18	10-35	1.20-1.50	2.0-6.0	0.08-0.16	5.1-6.5	Low-----	0.24			
	18-28	10-25	1.20-1.50	2.0-6.0	0.04-0.15	5.6-7.3	Low-----	0.24			
	28	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm ³	In/hr	In/in	pH					Pct
14B, 14C, 14D, 14E----- Chester	0-7	5-20	1.20-1.50	0.6-2.0	0.12-0.16	4.5-5.5	Low-----	0.32	4	---	1-2
	7-41	18-35	1.20-1.50	0.6-2.0	0.10-0.14	4.5-5.5	Low-----	0.43			
	41-60	10-27	1.25-1.55	0.6-2.0	0.08-0.12	4.5-5.5	Low-----	0.49			
15C, 15D, 15E---- Chester	0-7	5-20	1.20-1.50	0.6-2.0	0.12-0.16	4.5-5.5	Low-----	0.32	4	---	1-2
	7-41	18-35	1.20-1.50	0.6-2.0	0.10-0.14	4.5-5.5	Low-----	0.43			
	41-60	10-27	1.25-1.55	0.6-2.0	0.08-0.12	4.5-5.5	Low-----	0.49			
16----- Chewacla	0-8	10-27	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low-----	0.28	5	---	1-4
	8-60	18-35	1.30-1.50	0.6-2.0	0.15-0.24	4.5-6.5	Low-----	0.32			
17----- Craigsville	0-8	5-15	1.20-1.50	2.0-20	0.10-0.20	4.5-5.5	Low-----	0.24	3	---	1-5
	8-23	5-15	1.30-1.60	2.0-20	0.06-0.15	4.5-5.5	Low-----	0.17			
	23-60	5-10	1.35-1.55	>6.0	0.04-0.09	4.5-5.5	Low-----	0.17			
18B----- Creedmoor	0-8	7-20	1.55-1.70	2.0-6.0	0.10-0.14	3.6-5.5	Low-----	0.28	3	---	.5-2
	8-22	20-35	1.45-1.65	0.2-0.6	0.13-0.15	3.6-5.5	Moderate----	0.32			
	22-70	35-60	1.30-1.50	<0.06	0.13-0.15	3.6-5.5	Moderate----	0.32			
19B, 19C, 19D---- Cullen	0-8	15-27	1.20-1.50	2.0-6.0	0.14-0.19	5.1-6.0	Low-----	0.37	4	---	1-3
	8-60	35-70	1.30-1.60	0.6-2.0	0.10-0.14	5.1-6.0	Moderate----	0.24			
	60-67	20-50	1.30-1.50	0.6-2.0	0.14-0.19	5.1-6.0	Moderate----	0.24			
20B3, 20C3, 20D3- Cullen	0-8	27-40	1.20-1.50	0.6-2.0	0.12-0.17	5.1-6.0	Moderate----	0.37	3	---	1-3
	8-60	35-70	1.30-1.60	0.6-2.0	0.10-0.14	5.1-6.0	Moderate----	0.24			
	60-67	20-50	1.30-1.50	0.6-2.0	0.14-0.19	5.1-6.0	Moderate----	0.24			
21B, 21C, 21D---- Culpeper	0-8	10-25	1.10-1.30	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.37	4	---	1-2
	8-30	35-55	1.20-1.40	0.6-2.0	0.13-0.18	4.5-5.5	Moderate----	0.28			
	30-37	30-40	1.35-1.50	0.6-2.0	0.13-0.19	4.5-5.5	Moderate----	0.17			
	37-45	10-20	1.10-1.30	0.6-2.0	0.08-0.15	4.5-5.5	Low-----	0.17			
22C3----- Culpeper	0-8	20-35	1.35-1.50	0.6-2.0	0.13-0.19	4.5-5.5	Moderate----	0.37	3	---	.3-.5
	8-30	35-55	1.20-1.40	0.6-2.0	0.13-0.18	4.5-5.5	Moderate----	0.28			
	30-37	30-40	1.35-1.50	0.6-2.0	0.13-0.19	4.5-5.5	Moderate----	0.17			
	37-45	10-20	1.10-1.30	0.6-2.0	0.08-0.15	4.5-5.5	Low-----	0.17			
23B, 23C----- Davidson	0-4	10-25	1.20-1.50	0.6-2.0	0.14-0.18	4.5-6.5	Low-----	0.28	5	---	2-3
	4-10	27-40	1.20-1.50	0.6-2.0	0.15-0.18	4.5-6.0	Low-----	0.32			
	10-63	40-60	1.20-1.45	0.6-2.0	0.12-0.16	4.5-6.0	Low-----	0.24			
	63-88	30-60	1.25-1.55	0.6-2.0	0.12-0.18	4.5-6.0	Low-----	0.28			
24B----- Dogue	0-10	5-15	1.30-1.45	0.6-2.0	0.14-0.20	3.6-5.5	Low-----	0.37	4	---	.5-1
	10-70	35-50	1.45-1.60	0.2-0.6	0.12-0.19	3.6-5.5	Moderate----	0.28			
25B, 25C----- Dyke	0-8	10-27	1.20-1.40	0.6-6.0	0.17-0.22	4.5-5.5	Low-----	0.37	4	---	.1-2
	8-64	35-70	1.25-1.55	0.6-2.0	0.14-0.19	4.5-5.5	Moderate----	0.28			
26B3, 26C3, 26D3- Dyke	0-8	27-40	1.25-1.50	0.6-2.0	0.15-0.20	4.5-5.5	Low-----	0.37	3	---	.1-1
	8-64	35-70	1.25-1.55	0.6-2.0	0.14-0.19	4.5-5.5	Moderate----	0.28			
27B, 27C, 27D, 28C3, 28D3----- Elloak	0-8	10-25	1.20-1.50	0.6-2.0	0.12-0.24	4.5-6.0	Low-----	0.32	4	---	1-2
	8-39	35-55	1.20-1.50	0.6-2.0	0.08-0.12	4.5-5.5	Moderate----	0.28			
	39-72	30-50	1.25-1.55	0.6-2.0	0.08-0.12	4.5-5.5	Low-----	0.49			
29B, 29C, 29D, 29E, 30C3, 30D3- Fauquier	0-6	10-30	1.25-1.55	0.6-6.0	0.15-0.21	5.1-6.0	Low-----	0.32	3	---	1-3
	6-34	35-60	1.35-1.65	0.6-2.0	0.12-0.18	4.5-6.0	Moderate----	0.28			
	34-60	---	---	---	---	---	---	---			
31C, 31D----- Fauquier	0-6	10-25	1.25-1.55	0.6-6.0	0.15-0.21	5.1-6.0	Low-----	0.28	3	---	1-3
	6-34	35-60	1.35-1.65	0.6-2.0	0.12-0.18	4.5-6.0	Moderate----	0.28			
	34-60	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm ³	In/hr	In/in	pH					Pct
32B, 32C----- Fluvanna	0-8	5-27	1.25-1.55	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.37	4	---	1-3
	8-48	35-65	1.30-1.60	0.06-0.6	0.10-0.17	4.5-5.5	Moderate-----	0.28			
	48-60	20-40	1.30-1.60	0.06-0.6	0.05-0.09	4.5-5.5	Moderate-----	0.28			
33C----- Fluvanna	0-8	5-27	1.25-1.55	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.24	4	---	1-3
	8-48	35-65	1.30-1.60	0.06-0.6	0.10-0.17	4.5-5.5	Moderate-----	0.28			
	48-60	30-40	1.30-1.60	0.06-0.6	0.05-0.09	4.5-5.5	Moderate-----	0.28			
34B, 34C, 34D, 34E----- Glenglg	0-8	15-25	1.20-1.40	0.6-2.0	0.14-0.24	4.5-5.5	Low-----	0.32	3	---	1-3
	8-28	20-32	1.40-1.60	0.6-2.0	0.10-0.20	4.5-5.5	Low-----	0.43			
	28-80	5-20	1.40-1.60	0.6-2.0	0.10-0.19	4.5-5.5	Low-----	0.49			
35C*: Hartleton-----	0-7	10-25	1.20-1.40	0.6-6.0	0.10-0.14	4.5-5.5	Low-----	0.15	3	---	.5-2
	7-32	15-27	1.40-1.60	0.6-6.0	0.06-0.10	4.5-5.5	Low-----	0.20			
	32-44	15-27	1.40-1.60	0.6-6.0	0.04-0.08	4.5-5.5	Low-----	0.20			
	44	---	---	---	---	---	---	---			
Cataska-----	0-5	12-22	1.30-1.40	2.0-20	0.10-0.14	4.5-5.5	Low-----	0.15	1	---	.5-2
	5-20	12-22	1.30-1.45	2.0-20	0.04-0.09	4.5-5.5	Low-----	0.15			
	20-38	---	---	---	---	---	---	---			
	38	---	---	---	---	---	---	---			
36B, 36C, 36D, 36E, 37B3, 37C3, 37D3, 37E3----- Hayesville	0-7	10-25	1.35-1.60	2.0-6.0	0.12-0.20	4.5-5.5	Low-----	0.20	5	---	1-2
	7-58	30-50	1.20-1.35	0.6-2.0	0.15-0.20	4.5-5.5	Low-----	0.24			
	58-83	20-40	1.30-1.40	0.6-2.0	0.12-0.20	4.5-5.5	Low-----	0.20			
38C, 38D, 38E---- Hayesville	0-7	12-26	1.20-1.50	2.0-6.0	0.12-0.20	4.5-5.5	Low-----	0.24	4	---	1-2
	7-58	35-65	1.30-1.60	0.6-2.0	0.15-0.20	4.5-5.5	Low-----	0.28			
	58-83	25-40	1.25-1.55	0.6-2.0	0.12-0.20	4.5-5.5	Low-----	0.28			
39C, 39D, 39E---- Hazel	0-10	5-20	1.20-1.50	2.0-6.0	0.14-0.19	4.5-5.5	Low-----	0.32	2	---	.5-2
	10-20	10-18	1.20-1.50	2.0-6.0	0.12-0.17	4.5-5.5	Low-----	0.24			
	20-30	10-18	1.30-1.55	2.0-6.0	0.12-0.15	4.5-5.5	Low-----	0.24			
	30	---	---	---	---	---	---	---			
40D, 40E----- Hazel	0-10	5-18	1.20-1.50	2.0-6.0	0.11-0.16	4.5-5.5	Low-----	0.24	2	---	.5-2
	10-20	10-18	1.20-1.50	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.24			
	20-30	10-18	1.20-1.50	2.0-6.0	0.10-0.14	4.5-5.5	Low-----	0.24			
	30	---	---	---	---	---	---	---			
41B, 41C, 42B3, 42C3, 42D3----- Hiwassee	0-8	10-35	1.35-1.55	0.6-2.0	0.12-0.15	4.5-6.5	Low-----	0.28	5	---	.5-2
	8-64	35-60	1.30-1.45	0.6-2.0	0.12-0.15	4.5-6.5	Low-----	0.28			
43B, 43C, 43D, 43E----- Klinesville	0-4	10-25	1.20-1.40	2.0-6.0	0.08-0.12	4.5-6.0	Low-----	0.20	2	---	.5-2
	4-10	10-20	1.40-1.60	2.0-6.0	0.06-0.10	4.5-6.0	Low-----	0.20			
	10-14	10-20	1.40-1.60	2.0-6.0	0.04-0.08	4.5-6.0	Low-----	0.20			
	14	---	---	---	---	---	---	---			
44C, 44D, 45C, 45D----- Lew	0-7	10-25	1.00-1.20	0.6-6.0	0.13-0.15	4.5-6.0	Low-----	0.17	4	---	1-3
	7-60	28-40	1.20-1.50	0.6-2.0	0.11-0.16	4.5-6.0	Moderate-----	0.17			
46B----- Lignum	0-9	10-25	1.20-1.50	0.6-2.0	0.14-0.20	4.5-5.5	Low-----	0.43	3	---	.5-2
	9-38	35-55	1.25-1.55	0.06-0.6	0.10-0.18	4.5-5.5	Moderate-----	0.28			
	38-58	20-40	1.25-1.55	0.2-0.6	0.10-0.18	4.5-5.5	Low-----	0.28			
	58	---	---	---	---	---	---	---			
47C, 47D, 47E---- Louisburg	0-5	5-15	1.25-1.55	6.0-20	0.09-0.12	4.5-6.0	Low-----	0.24	2	---	.5-1
	5-60	10-25	1.25-1.55	6.0-20	0.10-0.12	4.5-6.0	Low-----	0.24			
	60	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm ³	In/hr	In/in	pH					Pct
48D, 48E----- Louisburg	0-5	5-15	1.25-1.55	6.0-20	0.03-0.07	4.5-6.0	Low-----	0.10	2	---	.5-1
	5-60	10-25	1.25-1.55	6.0-20	0.06-0.10	4.5-6.0	Low-----	0.24			
	60	---	---	---	---	---	---	---			
49B----- Manassas	0-18	10-27	1.25-1.55	0.6-6.0	0.14-0.20	4.5-5.5	Low-----	0.37	4	---	2-4
	18-64	20-35	1.30-1.60	0.6-6.0	0.16-0.20	4.5-5.5	Low-----	0.24			
50D, 50E----- Manor	0-8	10-25	1.20-1.40	0.6-2.0	0.17-0.21	4.5-6.0	Low-----	0.43	3	---	1-3
	8-18	10-25	1.30-1.50	0.6-2.0	0.14-0.20	4.5-6.0	Low-----	0.32			
	18-62	5-20	1.25-1.50	0.6-6.0	0.10-0.17	4.5-6.0	Low-----	0.49			
51B, 51C, 51D, 51E----- Manteo	0-6	7-27	1.25-1.55	2.0-6.0	0.10-0.16	3.6-5.5	Low-----	0.28	1	---	.5-2
	6-18	10-35	1.35-1.65	2.0-6.0	0.07-0.14	3.6-5.5	Low-----	0.28			
	18	---	---	---	---	---	---	---			
52D, 52E----- Manteo	0-6	7-27	1.25-1.55	2.0-6.0	0.07-0.13	3.6-5.5	Low-----	0.28	1	---	.5-2
	6-18	10-35	1.35-1.65	2.0-6.0	0.07-0.14	3.6-5.5	Low-----	0.28			
	18	---	---	---	---	---	---	---			
53B, 53C----- Masada	0-7	5-20	1.20-1.50	2.0-6.0	0.10-0.17	4.5-5.5	Low-----	0.32	4	---	1-3
	7-33	35-55	1.30-1.60	0.6-2.0	0.10-0.17	4.5-5.5	Moderate-----	0.24			
	33-62	30-40	1.30-1.60	0.6-2.0	0.10-0.17	4.5-5.5	Moderate-----	0.24			
54B, 54C----- Mayodan	0-10	5-20	1.30-1.55	>6.0	0.11-0.17	4.5-6.0	Low-----	0.24	4	---	1-2
	10-53	35-60	1.30-1.60	0.6-2.0	0.12-0.18	4.5-5.5	Low-----	0.24			
	53-60	---	---	---	0.02-0.06	4.5-5.5	Low-----	---			
55B----- McQueen	0-7	12-25	1.30-1.55	0.6-2.0	0.14-0.20	6.1-6.5	Low-----	0.37	4	---	.5-2
	7-42	35-55	1.20-1.45	0.06-0.2	0.14-0.18	4.5-5.5	Moderate-----	0.37			
	42-52	27-40	1.25-1.50	0.2-0.6	0.14-0.18	4.5-5.5	Low-----	0.37			
	52-64	12-32	1.30-1.50	0.2-0.6	0.14-0.18	4.5-5.5	Low-----	0.32			
56B, 56C----- Meadowville	0-14	10-27	1.00-1.25	2.0-6.0	0.17-0.20	4.5-6.0	Low-----	0.37	3	---	2-4
	14-46	20-35	1.20-1.50	0.6-6.0	0.14-0.19	4.5-6.0	Moderate-----	0.28			
	46-73	20-50	1.20-1.50	0.6-6.0	0.11-0.17	4.5-6.0	Moderate-----	0.28			
57B----- Mount Lucas	0-10	10-20	1.20-1.30	0.6-2.0	0.18-0.22	5.1-6.5	Low-----	0.37	4	---	1-2
	10-48	17-32	1.30-1.60	0.06-0.6	0.12-0.16	5.1-7.3	Moderate-----	0.28			
	48-64	5-20	1.30-1.70	0.06-0.2	0.04-0.12	5.6-7.3	Low-----	0.28			
58B, 58C, 58D, 58E----- Myersville	0-7	5-20	1.20-1.50	2.0-6.0	0.14-0.20	4.5-6.0	Low-----	0.37	4	---	1-3
	7-28	18-35	1.20-1.50	0.6-2.0	0.14-0.18	4.5-6.0	Low-----	0.32			
	28-44	10-32	1.20-1.50	0.6-2.0	0.08-0.16	4.5-6.0	Low-----	0.32			
	44-65	---	---	---	---	---	---	---			
59C, 59D, 59E----- Myersville	0-7	5-20	1.20-1.50	2.0-6.0	0.14-0.20	4.5-6.0	Low-----	0.32	4	---	1-3
	7-28	18-35	1.20-1.50	0.6-2.0	0.14-0.18	4.5-6.0	Low-----	0.32			
	28-44	10-32	1.20-1.50	0.6-2.0	0.08-0.16	4.5-6.0	Low-----	0.32			
	44-65	---	---	---	---	---	---	---			
60C*, 60D*, 60E*: Myersville-----	0-7	5-20	1.20-1.50	2.0-6.0	0.14-0.20	4.5-6.0	Low-----	0.32	4	---	1-3
	7-28	18-35	1.20-1.50	0.6-2.0	0.14-0.18	4.5-6.0	Low-----	0.32			
	28-44	10-32	1.20-1.50	0.6-2.0	0.08-0.16	4.5-6.0	Low-----	0.32			
	44-65	---	---	---	---	---	---	---			
Catoctin-----	0-5	5-20	1.20-1.50	2.0-6.0	0.14-0.20	5.1-6.5	Low-----	0.32	2	---	1-3
	5-18	10-35	1.20-1.50	2.0-6.0	0.08-0.16	5.1-6.5	Low-----	0.24			
	18-28	10-25	1.20-1.50	2.0-6.0	0.04-0.15	5.6-7.3	Low-----	0.24			
	28	---	---	---	---	---	---	---			

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm ³	In/hr	In/in	pH					Pct
61D*, 61E*: Myersville-----	0-7	5-20	1.20-1.50	2.0-6.0	0.14-0.20	4.5-6.0	Low-----	0.32	4	---	1-3
	7-28	18-35	1.20-1.50	0.6-2.0	0.14-0.18	4.5-6.0	Low-----	0.32			
	28-44	10-32	1.20-1.50	0.6-2.0	0.08-0.16	4.5-6.0	Low-----	0.32			
	44-65	---	---	---	---	---	---	---			
Rock outcrop.											
62B, 62C, 62D---- Nason	0-8	10-25	1.25-1.55	0.6-2.0	0.14-0.20	4.5-6.5	Low-----	0.37	4	---	1-3
	8-39	35-50	1.30-1.60	0.6-2.0	0.12-0.19	4.5-5.5	Moderate-----	0.28			
	39-50	10-25	1.25-1.55	0.6-2.0	0.15-0.20	4.5-5.5	Low-----	0.28			
63B----- Orange	0-9	10-25	1.25-1.55	0.6-2.0	0.14-0.20	5.1-6.5	Low-----	0.49	3	---	1-3
	9-33	35-60	1.35-1.65	0.06-0.2	0.10-0.19	5.1-6.5	High-----	0.28			
	33-60	10-35	1.35-1.65	0.2-0.6	0.13-0.20	5.6-7.8	Low-----	0.28			
64B----- Orange	0-9	10-25	1.25-1.55	0.6-2.0	0.14-0.20	5.1-6.5	Low-----	0.24	2	---	1-3
	9-33	35-60	1.10-1.40	0.06-0.2	0.10-0.19	5.1-6.5	High-----	0.24			
	33-60	10-35	1.30-1.60	0.2-0.6	0.13-0.20	5.6-7.8	Low-----	0.24			
65B, 65C----- Pacolet	0-6	8-20	1.00-1.50	2.0-6.0	0.08-0.12	4.5-6.5	Low-----	0.20	3	3	.5-2
	6-32	35-65	1.30-1.50	0.6-2.0	0.12-0.15	4.5-6.0	Low-----	0.28			
	32-60	15-30	1.20-1.50	0.6-2.0	0.08-0.15	4.5-6.0	Low-----	0.28			
66C, 66D, 66E, 67D, 67E----- Parker	0-14	10-20	1.30-1.50	2.0-6.0	0.06-0.14	4.5-5.5	Low-----	0.17	5	---	1-2
	14-38	10-25	1.30-1.55	2.0-6.0	0.10-0.14	4.5-5.5	Low-----	0.20			
	38-67	5-20	1.35-1.60	6.0-20	0.04-0.08	4.5-5.5	Low-----	0.20			
68B, 68C, 68D---- Penn	0-7	10-20	1.20-1.40	0.6-6.0	0.16-0.20	3.6-5.5	Low-----	0.32	3	---	1-3
	7-21	18-32	1.40-1.60	0.6-6.0	0.14-0.18	3.6-6.0	Low-----	0.24			
	21-29	18-25	1.40-1.60	0.6-6.0	0.04-0.08	5.1-6.5	Low-----	0.24			
	29	---	---	---	---	---	---	---			
69*. Pits											
70C, 70D, 70E---- Porters	0-8	10-20	1.15-1.45	0.6-2.0	0.12-0.16	4.5-6.0	Low-----	0.17	4	---	3-5
	8-26	15-35	1.25-1.55	0.6-2.0	0.14-0.20	4.5-6.0	Low-----	0.24			
	26-32	5-20	1.20-1.50	2.0-6.0	0.10-0.17	4.5-6.0	Low-----	---			
	32-59	---	---	---	---	---	---	---			
71B, 71C, 71D, 71E----- Rabun	0-6	18-35	1.20-1.50	0.6-2.0	0.12-0.18	5.1-6.5	Low-----	0.32	4	---	1-2
	6-48	35-80	1.30-1.60	0.6-2.0	0.12-0.18	5.1-6.5	Low-----	0.28			
	48-63	27-50	1.30-1.60	0.6-2.0	0.10-0.15	5.1-6.5	Low-----	0.28			
72B3, 72C3, 72D3, 72E3----- Rabun	0-4	30-50	1.20-1.50	0.6-2.0	0.10-0.15	5.1-6.5	Low-----	0.32	3	---	<.5
	4-48	35-80	1.30-1.60	0.6-2.0	0.12-0.18	5.1-6.5	Low-----	0.28			
	48-63	27-50	1.30-1.60	0.6-2.0	0.10-0.15	5.1-6.5	Low-----	0.28			
73C, 73D, 73E---- Rabun	0-6	18-35	1.20-1.50	0.6-2.0	0.10-0.15	5.1-6.5	Low-----	0.20	4	---	1-2
	6-48	35-80	1.20-1.50	0.6-2.0	0.12-0.18	5.1-6.5	Low-----	0.28			
	48-63	27-50	1.20-1.50	0.6-2.0	0.06-0.12	5.1-6.5	Low-----	0.28			
74B, 74C, 74D---- Rapidan	0-6	15-27	1.20-1.50	0.6-6.0	0.14-0.20	5.1-7.3	Low-----	0.37	4	---	1-4
	6-54	35-65	1.35-1.55	0.6-2.0	0.10-0.19	5.1-6.0	Moderate-----	0.32			
	54-70	20-40	1.30-1.50	0.6-2.0	0.05-0.10	5.1-6.0	Low-----	0.17			
75C3, 75D3----- Rapidan	0-6	27-35	1.25-1.55	0.6-2.0	0.16-0.19	5.1-7.3	Low-----	0.37	3	---	.1-2
	6-54	35-65	1.35-1.55	0.6-2.0	0.10-0.19	5.1-6.0	Moderate-----	0.32			
	54-70	20-40	1.30-1.50	0.6-2.0	0.05-0.10	5.1-6.0	Low-----	0.17			
76----- Riverview	0-12	10-27	1.25-1.50	0.6-2.0	0.16-0.24	4.5-5.5	Low-----	0.32	5	---	.5-2
	12-35	18-35	1.25-1.55	0.6-2.0	0.15-0.22	4.5-5.5	Low-----	0.24			
	35-60	4-35	1.30-1.55	2.0-6.0	0.07-0.11	4.5-5.5	Low-----	0.17			

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm ³	In/hr	In/in	pH					Pct
77*: Riverview-----	0-12	10-27	1.25-1.50	0.6-2.0	0.16-0.24	4.5-5.5	Low-----	0.32	5	---	.5-2
	12-35	18-35	1.25-1.55	0.6-2.0	0.15-0.22	4.5-5.5	Low-----	0.24			
	35-60	4-35	1.30-1.55	2.0-6.0	0.07-0.11	4.5-5.5	Low-----	0.17			
Chewacla-----	0-8	10-27	1.30-1.60	0.6-2.0	0.15-0.24	4.5-6.5	Low-----	0.28	5	---	1-4
	8-60	18-35	1.30-1.50	0.6-2.0	0.15-0.24	4.5-6.5	Low-----	0.32			
78-----	0-11	10-20	1.10-1.30	0.2-2.0	0.14-0.18	4.5-6.0	Low-----	0.43	4	---	2-4
Rowland	11-38	15-32	1.20-1.50	0.2-2.0	0.14-0.18	4.5-6.0	Low-----	0.28			
	38-60	15-32	1.20-1.50	0.2-2.0	0.12-0.16	4.5-6.0	Low-----	0.28			
79B-----	0-18	15-35	1.20-1.50	0.6-2.0	0.14-0.18	5.1-6.5	Moderate----	0.28	5	---	.5-2
Starr	18-68	18-35	1.20-1.50	0.6-2.0	0.14-0.18	5.1-6.5	Moderate----	0.28			
80B, 80C-----	0-6	12-27	1.10-1.40	0.6-2.0	0.14-0.20	4.5-5.5	Low-----	0.37	4	---	0-2
Tatum	6-42	45-60	1.40-1.60	0.6-2.0	0.10-0.19	4.5-5.5	Moderate----	0.28			
	42-51	20-40	1.40-1.60	0.6-2.0	0.12-0.18	4.5-5.5	Low-----	0.28			
	51	---	---	---	---	---	---	---			
81B, 81C, 81D----	0-10	10-25	1.20-1.40	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.32	4	---	.5-2
Thurmont	10-46	18-35	1.30-1.50	0.6-2.0	0.13-0.19	4.5-5.5	Low-----	0.20			
	46-56	18-30	1.30-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low-----	0.20			
	56-68	10-20	1.20-1.40	0.6-2.0	0.04-0.08	4.5-5.5	Low-----	0.20			
82C, 82D-----	0-10	10-25	1.20-1.40	2.0-6.0	0.10-0.15	4.5-5.5	Low-----	0.24	4	---	.5-2
Thurmont	10-46	18-35	1.30-1.50	0.6-2.0	0.13-0.18	4.5-5.5	Low-----	0.20			
	46-56	18-30	1.30-1.50	0.6-2.0	0.07-0.12	4.5-5.5	Low-----	0.20			
	56-68	10-20	1.20-1.40	0.6-2.0	0.04-0.08	4.5-5.5	Low-----	0.20			
83-----	0-9	3-17	1.35-1.45	2.0-6.0	0.09-0.12	5.1-6.5	Low-----	0.24	5	---	1-2
Toccoa	9-66	2-19	1.40-1.50	2.0-6.0	0.09-0.12	5.1-6.5	Low-----	0.10			
84B, 84C-----	0-8	12-27	1.20-1.50	0.6-2.0	0.20-0.24	4.5-6.0	Low-----	0.37	4	---	2-4
Totier	8-40	35-60	1.30-1.60	0.6-2.0	0.12-0.19	4.5-6.0	Moderate----	0.28			
	40-49	20-35	1.30-1.60	0.6-2.0	0.06-0.12	4.5-6.0	Low-----	0.28			
	49-63	---	---	---	---	---	---	---			
85C3-----	0-8	27-35	1.20-1.50	0.6-2.0	0.18-0.22	4.5-6.0	Moderate----	0.37	3	---	1-2
Totier	8-40	35-60	1.30-1.60	0.6-2.0	0.12-0.19	4.5-6.0	Moderate----	0.28			
	40-49	20-35	1.30-1.60	0.6-2.0	0.06-0.12	4.5-6.0	Low-----	0.28			
	49-63	---	---	---	---	---	---	---			
86B, 86C-----	0-12	10-25	1.20-1.55	2.0-6.0	0.10-0.17	4.5-5.5	Low-----	0.32	5	---	.5-2
Turbeville	12-75	30-60	1.30-1.50	0.6-2.0	0.13-0.16	4.5-5.5	Moderate----	0.24			
87B, 87C, 87D----	0-9	10-20	1.20-1.40	2.0-6.0	0.11-0.22	5.1-6.0	Low-----	0.24	4	---	4-5
Tusquitee	9-45	20-35	1.25-1.50	0.6-2.0	0.15-0.21	5.1-6.0	Low-----	0.20			
	45-63	10-20	1.30-1.55	2.0-6.0	0.08-0.14	5.1-6.0	Low-----	0.20			
88. Udorthents											
89B, 89C-----	0-6	10-25	1.35-1.65	0.6-6.0	0.14-0.20	4.5-6.0	Low-----	0.32	4	---	1-3
Unison	6-58	30-70	1.30-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Moderate----	0.24			
	58-60	30-50	1.30-1.60	0.6-6.0	0.08-0.16	4.5-6.0	Moderate----	0.28			
90B, 90C, 90D----	0-6	10-25	1.35-1.65	0.6-6.0	0.11-0.17	4.5-6.0	Low-----	0.24	4	---	1-3
Unison	6-58	30-70	1.30-1.60	0.6-2.0	0.12-0.18	4.5-6.0	Moderate----	0.24			
	58-60	30-50	1.30-1.60	0.6-6.0	0.08-0.16	4.5-6.0	Moderate----	0.24			
91*. Urban land											
92-----	0-9	10-27	1.20-1.50	0.2-2.0	0.15-0.20	4.5-6.0	Low-----	0.28	5	---	.5-5
Wahee	9-60	35-55	1.40-1.60	0.06-0.2	0.12-0.20	3.6-5.5	Moderate----	0.28			

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Soil name and map symbol	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Shrink-swell potential	Erosion factors		Wind erodibility group	Organic matter
								K	T		
	In	Pct	G/cm ³	In/hr	In/in	pH					Pct
93C, 93D, 93E---- Watt	0-10	10-27	1.30-1.60	2.0-6.0	0.08-0.12	4.0-5.5	Low-----	0.32	2	---	.5-1
	10-18	18-32	1.35-1.65	2.0-6.0	0.08-0.12	4.0-5.5	Low-----	0.24			
	18-28	5-27	1.35-1.65	2.0-6.0	0.04-0.08	4.0-5.5	Low-----	0.20			
94B, 94C----- Wedowee	0-7	6-20	1.25-1.50	2.0-6.0	0.10-0.18	4.5-5.5	Low-----	0.24	3	---	.5-1
	7-11	14-30	1.30-1.50	0.6-2.0	0.12-0.18	4.5-5.5	Low-----	0.28			
	11-30	35-45	1.25-1.55	0.6-2.0	0.12-0.18	4.5-5.5	Moderate-----	0.28			
	30-60	---	---	---	---	---	---	---			
95----- Wehadkee	0-10	15-40	1.35-1.50	0.6-2.0	0.15-0.24	5.1-6.5	Low-----	0.32	5	---	2-5
	10-52	18-35	1.30-1.50	0.6-2.0	0.16-0.20	5.1-6.5	Low-----	0.32			
	52-62	---	---	---	---	---	---	---			
96B----- Worsham	0-9	10-25	1.25-1.55	0.6-2.0	0.14-0.20	4.5-5.5	Low-----	0.37	4	---	1-3
	9-54	30-55	1.35-1.65	0.06-0.6	0.10-0.16	4.5-5.5	Moderate-----	0.28			
	54-60	10-40	1.20-1.50	0.2-0.6	0.08-0.19	4.5-5.5	Moderate-----	0.28			

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 16.--SOIL AND WATER FEATURES

["Flooding" and "water table" and terms such as "rare," "brief," "apparent," and "perched" are explained in the text. The symbol < means less than; > means more than. Absence of an entry indicates that the feature is not a concern]

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hardness		Uncoated steel	Concrete
1B----- Abell	B	None-----	---	---	2.0-3.5	Apparent	Dec-Mar	>60	---	Low-----	Moderate	High.
2B, 2C, 2D, 3C, 3D, 3E----- Albermarle	B	None-----	---	---	>6.0	---	---	40-60	Hard	Moderate	Moderate	Moderate.
4B, 4C, 4D, 4E----- Ashe	B	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	Low-----	High.
5B----- Belvoir	C	None-----	---	---	1.0-2.0	Perched	Jan-Apr	>60	---	High-----	High-----	High.
6----- Bermudian	B	Occasional	Brief-----	Nov-May	3.0-6.0	Apparent	Nov-Mar	>60	---	Moderate	Low-----	Moderate.
7B, 7C, 7D, 8C3, 9B, 9C, 9D----- Braddock	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Moderate.
10----- Buncombe	A	Frequent-----	Very brief	Feb-Jun	>6.0	---	---	>60	---	Low-----	Low-----	Moderate.
11D*, 11E*: Cataska-----	D	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Low-----	Moderate.
Hartleton-----	B	None-----	---	---	>6.0	---	---	40-60	Soft	Moderate	Low-----	High.
12C, 12D, 12E, 13C, 13D, 13E----- Catoctin	C	None-----	---	---	>6.0	---	---	20-40	Hard	Low-----	High-----	Moderate.
14B, 14C, 14D, 14E----- Chester	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	High.
15C, 15D, 15E----- Chester	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	High.
16----- Chewacla	C	Occasional	Brief-----	Nov-Apr	0.5-1.5	Apparent	Nov-Apr	>60	---	Low-----	High-----	Moderate.
17----- Craigsville	B	Frequent-----	Very brief	Nov-May	>6.0	---	---	>60	---	Moderate	Low-----	Moderate.
18B----- Creedmoor	C	None-----	---	---	1.5-2.0	Perched	Jan-Mar	>60	---	Moderate	High-----	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
								In				
19B, 19C, 19D, 20B3, 20C3, 20D3- Cullen	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Moderate.
21B, 21C, 21D, 22C3----- Culpeper	C	None-----	---	---	>6.0	---	---	>48	Hard	Moderate	Moderate	Moderate.
23B, 23C----- Davidson	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Moderate.
24B----- Dogue	C	None-----	---	---	1.5-3.0	Apparent	Jan-Mar	>60	---	Moderate	High-----	High.
25B, 25C, 26B3, 26C3, 26D3----- Dyke	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Moderate.
27B, 27C, 27D, 28C3, 28D3----- Elioak	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Moderate.
29B, 29C, 29D, 29E, 30C3, 30D3, 31C, 31D----- Fauquier	C	None-----	---	---	>6.0	---	---	>40	Soft	Moderate	High-----	High.
32B, 32C, 33C----- Fluvanna	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
34B, 34C, 34D, 34E----- Glenelg	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	High.
35C*: Hartleton-----	B	None-----	---	---	>6.0	---	---	40-60	Soft	Moderate	Low-----	High.
Cataska-----	D	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Low-----	Moderate.
36B, 36C, 36D, 36E, 37B3, 37C3, 37D3, 37E3----- Hayesville	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
38C, 38D, 38E----- Hayesville	C	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
39C, 39D, 39E, 40D, 40E----- Hazel	C	None-----	---	---	>6.0	---	---	20-40	Hard	Moderate	Low-----	High.
41B, 41C, 42B3, 42C3, 42D3----- Hiwassee	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Moderate.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth Ft	Kind	Months	Depth In	Hardness		Uncoated steel	Concrete
43B, 43C, 43D, 43E Klinesville	C/D	None-----	---	---	>6.0	---	---	10-20	Soft	Moderate	Moderate	High.
44C, 44D, 45C, 45D Lew	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	High.
46B Lignum	C	None-----	---	---	1.0-2.5	Perched	Dec-May	>40	Hard	Moderate	High-----	High.
47C, 47D, 47E, 48D, 48E Louisburg	B	None-----	---	---	>6.0	---	---	>48	Hard	Low-----	Low-----	Moderate.
49B Manassas	B	Occasional	Brief-----	Dec-May	2.0-3.0	Apparent	Dec-May	>60	---	Moderate	High-----	High.
50D, 50E Manor	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Low-----	Moderate.
51B, 51C, 51D, 51E, 52D, 52E Manteo	C/D	None-----	---	---	>6.0	---	---	10-20	Hard	Low-----	Low-----	High.
53B, 53C Masada	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
54B, 54C Mayodan	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	Moderate.
55B McQueen	C	Rare-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	Moderate.
56B, 56C Meadowville	B	None-----	---	---	3.0-5.0	Apparent	Dec-May	>60	---	Moderate	High-----	High.
57B Mount Lucas	C	None-----	---	---	0.5-3.0	Perched	Nov-Mar	>48	Hard	Moderate	High-----	Moderate.
58B, 58C, 58D, 58E, 59C, 59D, 59E Myersville	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
60C*, 60D*, 60E*: Myersville	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Catoctin	C	None-----	---	---	>6.0	---	---	20-40	Hard	Low-----	High-----	Moderate.
61D*, 61E*: Myersville	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
Rock outcrop.												

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					<u>Ft</u>			<u>In</u>				
62B, 62C, 62D----- Nason	C	None-----	---	---	>6.0	---	---	40-60	Soft	Low-----	Moderate	High.
63B, 64B----- Orange	D	None-----	---	---	1.0-3.0	Apparent	Dec-May	40-60	Hard	Moderate	High-----	Moderate.
65B, 65C----- Pacolet	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
66C, 66D, 66E, 67D, 67E----- Parker	B	None-----	---	---	>6.0	---	---	>48	Hard	Moderate	Low-----	High.
68B, 68C, 68D----- Penn	C	None-----	---	---	>6.0	---	---	20-40	Soft	Moderate	Low-----	Moderate.
69*. Pits												
70C, 70D, 70E----- Porters	B	None-----	---	---	>6.0	---	---	40-60	Hard	Moderate	Low-----	High.
71B, 71C, 71D, 71E, 72B3, 72C3, 72D3, 72E3, 73C, 73D, 73E----- Rabun	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Moderate.
74B, 74C, 74D, 75C3, 75D3----- Rapidan	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
76----- Riverview	B	Occasional	Brief-----	Dec-Mar	3.0-5.0	Apparent	Dec-Mar	>60	---	Low-----	Low-----	Moderate.
77*: Riverview----- Chewacla-----	B	Occasional	Brief-----	Dec-Mar	3.0-5.0	Apparent	Dec-Mar	>60	---	Low-----	Low-----	Moderate.
	C	Occasional	Brief-----	Nov-Apr	0.5-1.5	Apparent	Nov-Apr	>60	---	Low-----	High-----	Moderate.
78----- Rowland	C	Occasional	Brief-----	Nov-Mar	1.0-3.0	Apparent	Nov-May	>60	---	Moderate	High-----	Moderate.
79B----- Starr	C	Occasional	Brief-----	Nov-Apr	>6.0	---	---	>60	---	Low-----	Moderate	Moderate.
80B, 80C----- Tatum	C	None-----	---	---	>6.0	---	---	>40	Soft	Low-----	High-----	High.
81B, 81C, 81D----- Thurmont	B	None-----	---	---	4.0-6.0	Apparent	Dec-Mar	>60	---	Moderate	Moderate	High.
82C, 82D----- Thurmont	B	None-----	---	---	4.0-6.0	Apparent	Dec-Mar	>60	---	Moderate	Moderate	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Soil name and map symbol	Hydro-logic group	Flooding			High water table			Bedrock		Potential frost action	Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Depth	Hardness		Uncoated steel	Concrete
					Ft			In				
83----- Toccoa	B	Occasional	Brief-----	Jan-Dec	2.5-5.0	Apparent	Dec-Apr	>60	---	Low-----	Low-----	Moderate.
84B, 84C, 85C3---- Totier	C	None-----	---	---	>6.0	---	---	40-60	Soft	Low-----	High-----	Moderate.
86B, 86C----- Turbeville	C	None-----	---	---	>6.0	---	---	>60	---	Low-----	High-----	High.
87B, 87C, 87D---- Tusquitee	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	Moderate	Moderate.
88. Udorthents												
89B, 89C, 90B, 90C, 90D----- Unison	B	None-----	---	---	>6.0	---	---	>60	---	Moderate	High-----	Moderate.
91*. Urban land												
92----- Wahee	D	Occasional	Very brief to brief.	Dec-Apr	0.5-1.5	Apparent	Dec-Mar	>60	---	Moderate	High-----	High.
93C, 93D, 93E---- Watt	D	None-----	---	---	>6.0	---	---	20-40	Soft	Low-----	High-----	High.
94B, 94C----- Wedowee	B	None-----	---	---	>6.0	---	---	>60	---	Low-----	Moderate	High.
95----- Wehadkee	D	Occasional	Brief-----	Nov-Jun	0-2.5	Apparent	Dec-May	>60	---	Moderate	High-----	Moderate.
96B----- Worsham	D	None-----	---	---	0-1.0	Apparent	Nov-Apr	>60	---	Moderate	High-----	Moderate.

* See description of the map unit for composition and behavior characteristics of the map unit.

TABLE 17.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Abell-----	Fine-loamy, mixed, thermic Aquic Hapludults
Albemarle-----	Fine-loamy, mixed, mesic Typic Hapludults
Ashe-----	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Belvoir-----	Fine-loamy, mixed, mesic Aquic Fragludults
Bermudian-----	Fine-loamy, mixed, mesic Fluventic Dystrochrepts
Braddock-----	Clayey, mixed, mesic Typic Hapludults
Buncombe-----	Mixed, thermic Typic Udipsamments
Cataska-----	Loamy-skeletal, mixed, mesic, shallow Typic Dystrochrepts
Catoctin-----	Loamy-skeletal, mixed, mesic Ruptic-Alfic Eutrochrepts
Chester-----	Fine-loamy, mixed, mesic Typic Hapludults
Chewacla-----	Fine-loamy, mixed, thermic Fluvaquentic Dystrochrepts
Craigsville-----	Loamy-skeletal, mixed, mesic Fluventic Dystrochrepts
Creedmoor-----	Clayey, mixed, thermic Aquic Hapludults
Cullen-----	Clayey, mixed, thermic Typic Hapludults
Culpeper-----	Clayey, kaolinitic, mesic Typic Hapludults
Davidson-----	Clayey, kaolinitic, thermic Rhodic Paleudults
Dogue-----	Clayey, mixed, thermic Aquic Hapludults
Dyke-----	Clayey, mixed, mesic Typic Rhodudults
Elioak-----	Clayey, kaolinitic, mesic Typic Hapludults
Fauquier-----	Fine, mixed, mesic Ultic Hapludalfs
Fluvanna-----	Clayey, mixed, thermic Typic Hapludults
Glenelg-----	Fine-loamy, mixed, mesic Typic Hapludults
Hartleton-----	Loamy-skeletal, mixed, mesic Typic Hapludults
Hayesville-----	Clayey, oxidic, mesic Typic Hapludults
Hazel-----	Coarse-loamy, mixed, mesic Typic Dystrochrepts
Hiwassee-----	Clayey, kaolinitic, thermic Typic Rhodudults
Klinesville-----	Loamy-skeletal, mixed, mesic Lithic Dystrochrepts
Lew-----	Loamy-skeletal, mixed, mesic Typic Hapludults
Lignum-----	Clayey, mixed, thermic Aquic Hapludults
Louisburg-----	Coarse-loamy, mixed, thermic Ruptic-Ultic Dystrochrepts
Manassas-----	Fine-loamy, mixed, mesic Ultic Hapludalfs
Manor-----	Coarse-loamy, micaceous, mesic Typic Dystrochrepts
Manteo-----	Loamy-skeletal, mixed, thermic Lithic Dystrochrepts
Masada-----	Clayey, mixed, thermic Typic Hapludults
Mayodan-----	Clayey, kaolinitic, thermic Typic Hapludults
McQueen-----	Clayey, mixed, thermic Typic Hapludults
Meadowville-----	Fine-loamy, mixed, mesic Typic Hapludults
*Mount Lucas-----	Fine-loamy, mixed, mesic Aquic Hapludalfs
Myersville-----	Fine-loamy, mixed, mesic Ultic Hapludalfs
Nason-----	Clayey, mixed, thermic Typic Hapludults
Orange-----	Fine, montmorillonitic, thermic Albaquic Hapludalfs
Pacolet-----	Clayey, kaolinitic, thermic Typic Hapludults
Parker-----	Loamy-skeletal, mixed, mesic Typic Dystrochrepts
Penn-----	Fine-loamy, mixed, mesic Ultic Hapludalfs
Porters-----	Fine-loamy, mixed, mesic Humic Hapludults
Rabun-----	Clayey, kaolinitic, mesic Typic Rhodudults
Rapidan-----	Clayey, mixed, mesic Typic Rhodudults
Riverview-----	Fine-loamy, mixed, thermic Fluventic Dystrochrepts
Rowland-----	Fine-loamy, mixed, mesic Fluvaquentic Dystrochrepts
Starr-----	Fine-loamy, mixed, thermic Fluventic Dystrochrepts
Tatum-----	Clayey, mixed, thermic Typic Hapludults
Thurmont-----	Fine-loamy, mixed, mesic Typic Hapludults
Toccoa-----	Coarse-loamy, mixed, nonacid, thermic Typic Udifluvents
Totier-----	Clayey, mixed, thermic Typic Hapludults
Turbeville-----	Clayey, mixed, thermic Typic Paleudults
Tusquitee-----	Fine-loamy, mixed, mesic Humic Hapludults
Udorthents-----	Udorthents
Unison-----	Clayey, mixed, mesic Typic Hapludults
Wahee-----	Clayey, mixed, thermic Aeric Ochraqults
Watt-----	Loamy-skeletal, mixed, mesic Typic Dystrochrepts
Wedowee-----	Clayey, kaolinitic, thermic Typic Hapludults
Wehadkee-----	Fine-loamy, mixed, nonacid, thermic Typic Fluvaquents
Worsham-----	Clayey, mixed, thermic Typic Ochraqults

*The soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range for the series.

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