United States Department of Agriculture

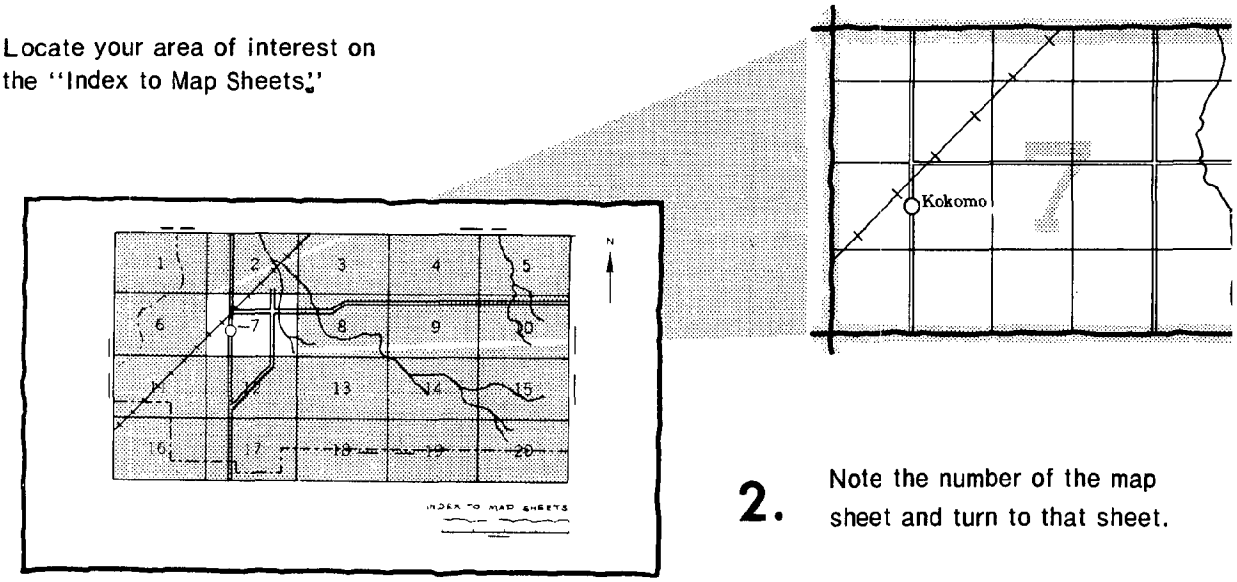
Soil Conservation Service

In cooperation with South Carolina Agricultural Experiment Station and South Carolina Land Resources Conservation Commission

Soil Survey of Horry County, South Carolina

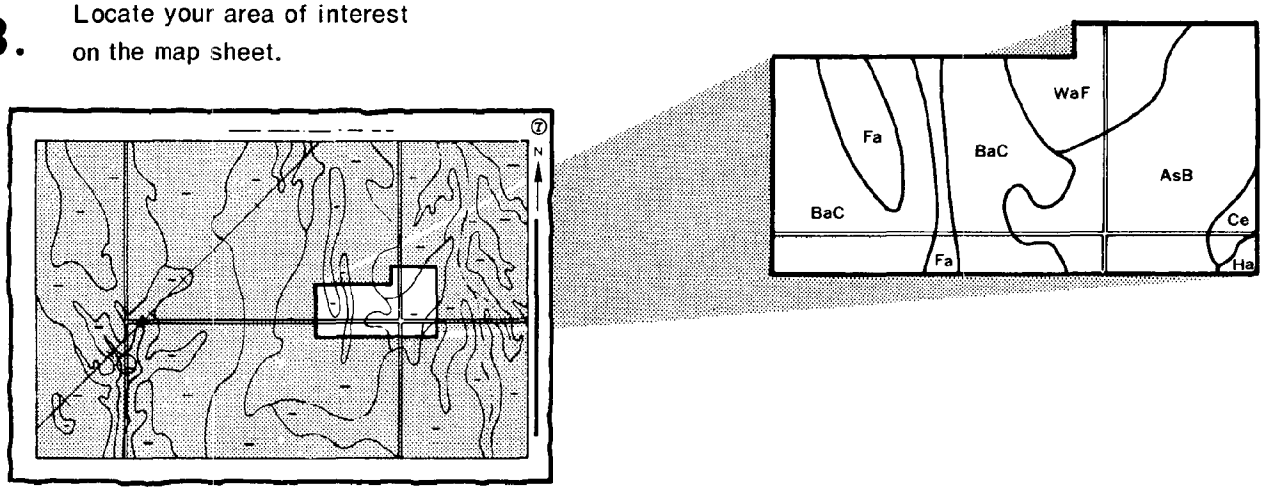
HOW TO U

1. Locate your area of interest on the "Index to Map Sheets."

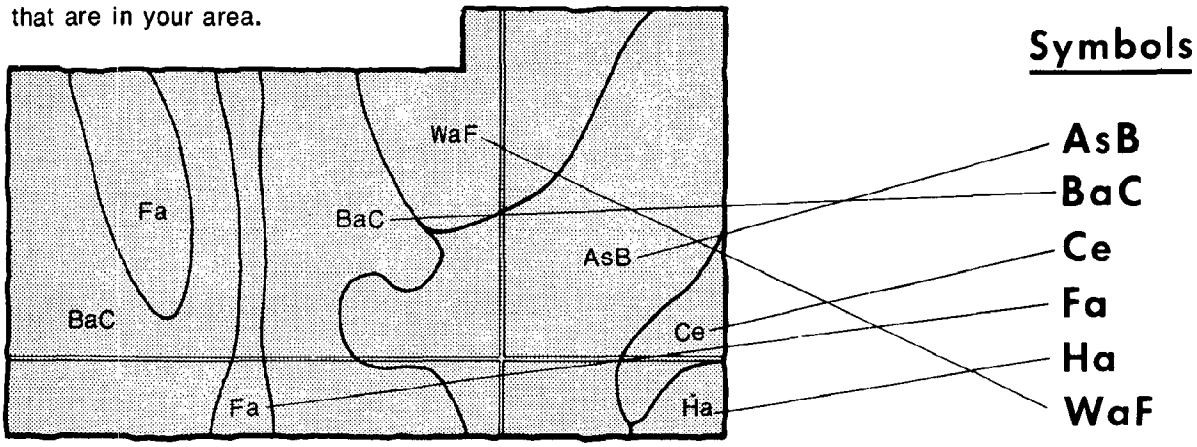


2. Note the number of the map sheet and turn to that sheet.

3. Locate your area of interest on the map sheet.

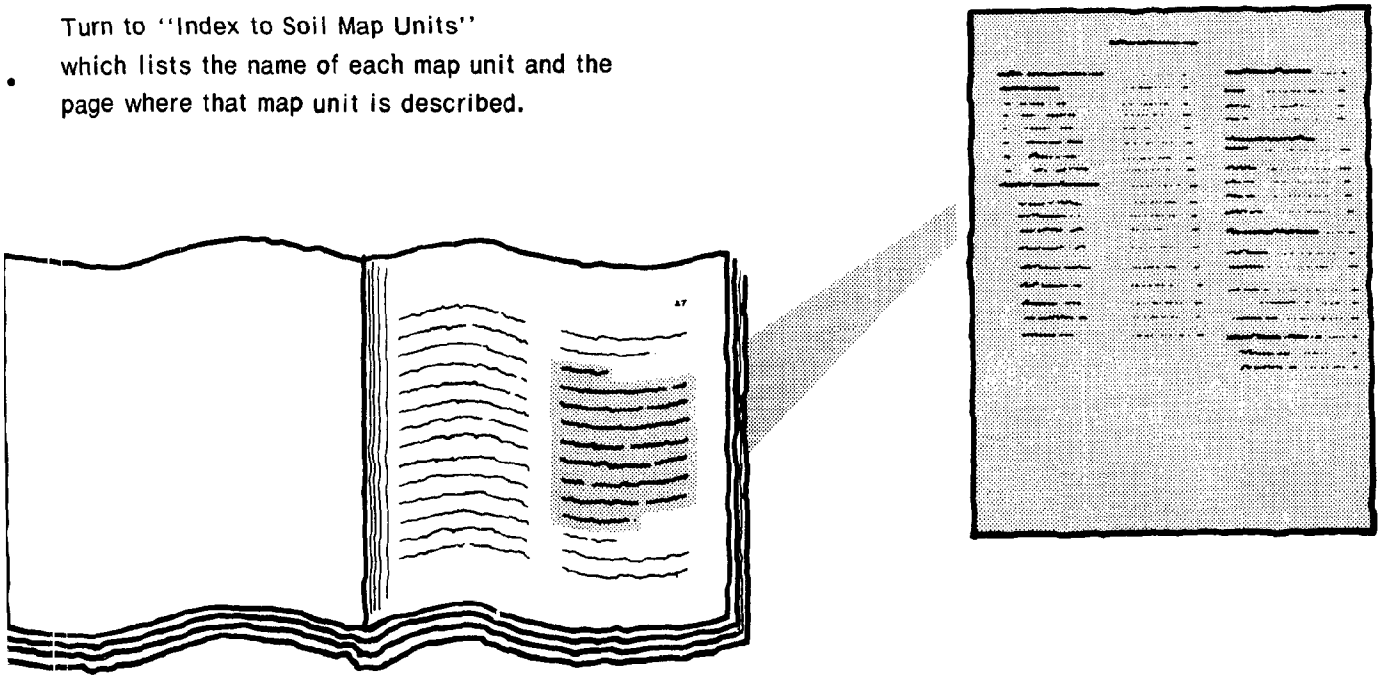


4. List the map unit symbols that are in your area.

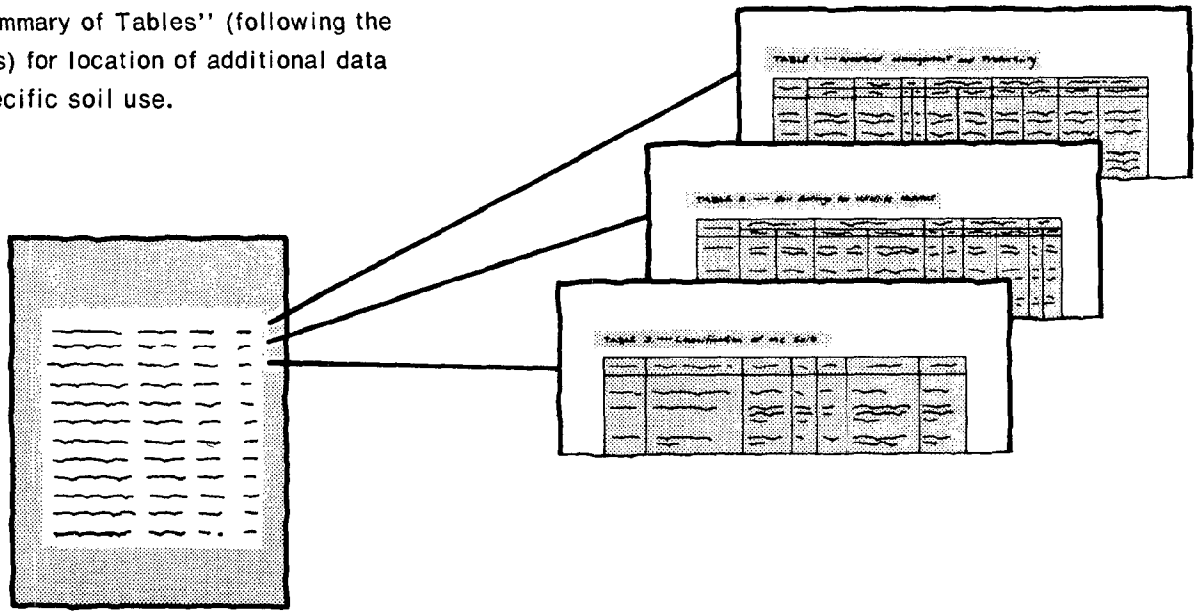


IIS SOIL SURVEY

- Turn to "Index to Soil Map Units" which lists the name of each map unit and the page where that map unit is described.



- See "Summary of Tables" (following the Contents) for location of additional data on a specific soil use.



Consult "Contents" for parts of the publication that will meet your specific needs. This survey contains useful information for farmers or ranchers, foresters or agronomists; for planners, community decision makers, engineers, developers, builders, or homebuyers; for conservationists, recreationists, teachers, or students; to specialists in wildlife management, waste disposal, or pollution control.

This soil survey is a publication of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other federal agencies, state agencies including the Agricultural Experiment Stations, and local agencies. The Soil Conservation Service has leadership for the federal part of the National Cooperative Soil Survey. In line with Department of Agriculture policies, benefits of this program are available to all, regardless of race, color, national origin, sex, religion, marital status, or age.

Major fieldwork for this soil survey was completed in 1982. Soil names and descriptions were approved in 1983. Unless otherwise indicated, statements in this publication refer to conditions in the survey area in 1983. This soil survey was made cooperatively by the Soil Conservation Service, the South Carolina Agricultural Experiment Station, and the South Carolina Land Resources Conservation Commission. It is part of the technical assistance furnished to the Horry County Soil and Water Conservation District.

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

The first soil survey of Horry County was published in 1918. This survey updates the previous publication and provides additional information.

Cover: Tobacco growing on Centenary fine sand. This soil is suited to most row crops.

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Foreword

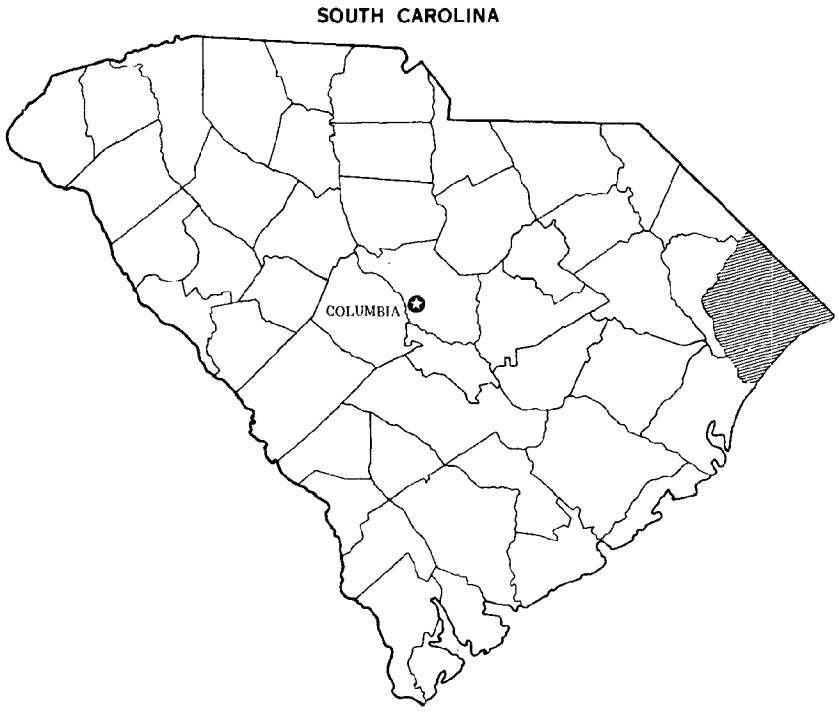
This soil survey contains information that can be used in land-planning programs in Horry County. It contains predictions of soil behavior for selected land uses. The survey also highlights limitations and hazards inherent in the soil, improvements needed to overcome the limitations, and the impact of selected land uses on the environment.

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

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

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

Billy R. Abercrombie
State Conservationist
Soil Conservation Service



Location of Horry County in South Carolina.

Soil Survey of Horry County, South Carolina

By Travis A. Dudley, Soil Conservation Service

Fieldwork by Travis A. Dudley, party leader,
C.J. Mitchell, Jr., Frank Stiff, and Robert T. Eppinette,
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United States Department of Agriculture
Soil Conservation Service, in cooperation with
South Carolina Agricultural Experiment Station and
South Carolina Land Resources Conservation Commission

Horry County is in the eastern part of South Carolina. Its land area is 1,150 square miles, or 736,000 acres. The population of the county is approximately 100,000. Conway, the county seat, has a population of approximately 10,000. Most of Horry County is rural, but urban centers are concentrated along the Atlantic Coast. Much of the land is in woodland, but some is used for the production of row crops, such as corn, soybeans, and tobacco. The main industries are textiles, electronics equipment, wood products, and tourism.

Most of Horry County is in the Atlantic Coast Flatwoods Land Resource Area. A narrow area adjacent to the coast making up an estimated 1 percent of the county is in the Tidewater Area. Relief generally is slight except in the areas adjacent to major rivers and large swamps. Elevation ranges from sea level in the southeastern part of the county to about 113 feet in the north-central and northern part of the county.

The county is somewhat rectangular. Its boundaries are North Carolina on the north and east, Georgetown County and the Atlantic Ocean on the south, and Dillon, Marion, and Georgetown Counties on the west. The Waccamaw River meanders along the southwestern part of the county. Its headwaters are in North Carolina, and it empties into Winyah Bay in Georgetown County. The Lumber River, the Little Pee Dee River, and the Great Pee Dee River form the western boundary of Horry County.

Conway, the county seat, is in the south-central part of the county. A long, narrow area of smooth, sandy beaches bordering the Atlantic Ocean extends along the eastern edge of Horry County from the North Carolina State line to the north into Georgetown County to the south. This strip of beaches is called the Grand Strand Area.

General Nature of the County

The first inhabitants of Horry County were Indians of the Pee Dee culture. The first Europeans made up a Spanish expedition that passed through the area in the early 1500's.

In the 1730's, King George II of England had many townships established to defend the countryside from Indian attack. One of these townships, Kingston, was surveyed in 1731 on the west bank of the Waccamaw River. About three years later, a town, also called Kingston, was planned near the center of the township. The town was opened for settlement in 1735. This area was included in the Georgetown District, one of seven districts into which the state was divided in 1768. In 1785, Georgetown District was further divided into four

counties. One of them was Kingston, which had the same boundaries as the present Horry County. The name was changed in 1801, when the citizens of Kingston County, Georgetown District, petitioned the General Assembly to make the county into Horry District. The name honored Peter Horry, Brigadier General of the militia that encompassed Kingston. The name of the town of Kingston was changed to Conwayborough, and later it was changed to Conway. In 1868 Horry District was changed to Horry County.

The growth and development of this part of South Carolina have been held back by poor drainage. The settlers were able to use the higher areas for homesteads and as small fields to produce food crops. Low, wet areas were left in their natural state.

Climate

Prepared by the National Climatic Center, Asheville, North Carolina.

Table 1 gives data on temperature and precipitation for the survey area as recorded at Conway, South Carolina, in the period 1951 to 1978. Table 2 shows probable dates of the first freeze in fall and the last freeze in spring. Table 3 provides data on length of the growing season.

In winter the average temperature is 47 degrees F, and the average daily minimum temperature is 35 degrees. The lowest temperature on record, which occurred at Conway on December 14, 1962, is 10 degrees. In summer the average temperature is 79 degrees, and the average daily maximum temperature is 89 degrees. The highest recorded temperature, which occurred at Conway on June 28, 1954, is 106 degrees.

Growing degree days are shown in table 1. They are equivalent to "heat units." During the month, growing degree days accumulate by the amount that the average temperature each day exceeds a base temperature (50 degrees F). The normal monthly accumulation is used to schedule single or successive plantings of a crop between the last freeze in spring and the first freeze in fall.

The total annual precipitation is 51 inches. Of this, 31 inches, or 60 percent, usually falls in April through September. The growing season for most crops falls within this period. In 2 years out of 10, the rainfall in April through September is less than 25 inches. The heaviest 1-day rainfall during the period of record was 8.25 inches at Conway on September 13, 1964.

Snowfall is rare. In 60 percent of the winters, there is no measurable snowfall. In 15 percent, the snowfall, usually of short duration, is more than 2 inches. The heaviest 1-day snowfall on record was more than 12 inches.

The average relative humidity in midafternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 80 percent. The sun shines 65 percent of the time possible in summer and 60 percent in winter. The prevailing wind is from the south-southwest. Average windspeed is highest, 10 miles per hour, in summer.

How This Survey Was Made

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

The soils in the survey area occur in an orderly pattern that is related to the geology, the landforms, relief, climate, and the natural vegetation of the area. Each kind of soil is associated with a particular kind of landscape or with a segment of the landscape. By observing the soils in the survey area and relating their position to specific segments of the landscape, a soil scientist develops a concept, or model, of how the soils were formed. Thus, during mapping, this model enables the soil scientist to predict with considerable accuracy the kind of soil at a specific location on the landscape.

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

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, acidity, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. The system of taxonomic classification used in the United States is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they

compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

While a soil survey is in progress, samples of some of the soils in the area are generally collected for laboratory analyses and for engineering tests. Soil scientists interpreted the data from these analyses and tests as well as the field-observed characteristics and the soil properties in terms of expected behavior of the soils under different uses. Interpretations for all of the soils were field tested through observation of the soils in different uses under different levels of management. Some interpretations are modified to fit local conditions, and new interpretations sometimes are developed to meet local needs. Data were assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management were assembled from farm records and from field or plot experiments on the same kinds of soil.

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

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Map Unit Composition

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

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

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

General Soil Map Units

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

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

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

Nearly Level and Gently Sloping Soils That Have a Loamy Subsoil

Three general soil map units, all of them in the western half of the county, make up this group. The soils range from very poorly drained to well drained. The acreage of these soils is about evenly divided between openland and woodland.

1. Woodington-Goldsboro-Pocomoke

Poorly drained, moderately well drained, and very poorly drained soils that have a loamy or sandy surface layer and a loamy subsoil; on broad, nearly level and slightly concave areas

This map unit is in nearly level areas on uplands and in drainageways that are generally poorly defined. Soils in the broad, nearly level areas have a lower water table than do the soils in the slightly concave areas. This map unit is about ten miles wide and crosses the upper northern part of the county in an easterly direction. About half of the acreage of this map unit, mostly on higher lying areas, is in openland. The rest of the acreage, which is in lower lying areas that have not been drained, is in woodland of mostly mixed pine and hardwood trees. About half of the buildings in this map unit are farmsteads that have many adjacent buildings. The other buildings are homes on small acreages. This map unit has many roads that provide easy access to all parts of the map unit. Farm ponds are numerous.

This map unit makes up about 15.5 percent of the county. It is about 21 percent Woodington soils, 17 percent Goldsboro soils, and 8 percent Pocomoke soils. The remaining 54 percent is soils of minor extent.

The Woodington soils are in broad, nearly level areas or in slightly concave areas on intermediate elevations. These soils have a grayish loamy surface layer and a grayish loamy subsoil.

The Goldsboro soils are in broad, nearly level areas on slightly higher elevations. These soils have a brownish sandy surface layer and a mottled, brownish loamy subsoil.

The Pocomoke soils are in broad, nearly level areas or in drainageways on the lower elevations. These soils have a black loamy surface layer and a grayish brown loamy subsoil.

The soils of minor extent in this map unit include the Blanton, Kenansville, Suffolk, Norfolk, Emporia, Nankin, and Summerton soils on the higher ridges; the Lynchburg soils at intermediate elevations; and the Johnston and Rutlege soils in depressions and along drainageways.

About half of the acreage of this map unit has been cleared. Most of the cleared areas are used for row crops; some are used for pasture and hay. In most areas, the soils are suited to corn, soybeans, and tobacco. Drainage is needed to produce consistently high yields. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

These soils are mostly suited to pasture and hay. Improved bermudagrass and bahiagrass grow well. A proper stocking rate, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Lowering the water table by the use of shallow surface drains improves yields and lengthens the grazing season.

These soils are suited to slash pine, loblolly pine, and longleaf pine. Where competing vegetation is controlled or removed by site preparation, burning, cutting, or girdling, seedlings survive and grow well. In some areas of this map unit, the use of planting and harvesting equipment is severely limited by wetness and ponding.

Most areas of this map unit are poorly suited to most engineering uses because of wetness. Except for the

soils on the higher elevations, the soils in this map unit have severe limitations for use as septic tank absorption fields. Wetness and ponding severely limit most areas of this map unit for use as sites for dwellings, for local roads and streets, and for most recreation uses. This limitation can commonly be reduced by special design and increased maintenance.

2. Nansemond-Pocomoke-Kenansville

Moderately well drained, very poorly drained, and well drained soils that have a sandy or loamy surface layer and a loamy subsoil; on broad, nearly level and gently sloping areas

This map unit is on upland ridges and in moderately well-defined drainageways. Soils in the gently sloping areas have a lower water table than the soils in the nearly level areas. Areas of this map unit are about six miles wide and stretch across the northern part of the county in an easterly direction. These soils are generally undulating. About half of the acreage, mostly on the higher lying areas, is in openland. The rest, in lower lying areas that have not been drained, is in woodland. The woodland supports mostly a mixture of pine and hardwood trees. About half of the buildings in this map unit are farmsteads that have many adjacent buildings. The other buildings are homes on small acreages. There are many roads that provide easy access to all parts of the map unit. Small farm ponds are numerous.

This map unit makes up about 13.5 percent of the county. It is about 20 percent Nansemond soils, 13 percent Pocomoke soils, and 10 percent Kenansville soils. The remaining 57 percent is soils of minor extent.

The Nansemond soils are in broad, nearly level areas on intermediate elevations in this map unit. These soils have a brownish sandy surface layer and a mottled, brownish loamy subsoil.

The Pocomoke soils are in broad, nearly level areas or in drainageways on the lower elevations in this map unit. They have a black loamy surface layer and a grayish brown loamy subsoil.

The Kenansville soils are in broad, nearly level and gently sloping areas on the higher elevations in this map unit. They have a thick, brownish sandy surface layer and a yellowish loamy subsoil.

The soils of minor extent in this map unit include the Blanton, Suffolk, and Emporia soils on the side slopes and higher ridges, the Goldsboro and Lynchburg soils at intermediate elevations, and the Woodington and Rutlege soils in the depressions and drainageways.

About half of the acreage of this map unit has been cleared. Most of the cleared areas are used for row crops; some are used for pasture and hay. In most areas, the soils are suited to corn, soybeans, and tobacco. Drainage is needed to produce consistently high yields. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

These soils are suited to pasture and hay. Improved bermudagrass and bahiagrass grow well. A proper stocking rate, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Shallow surface drains can be used to lower the water table.

These soils are suited to slash pine, loblolly pine, and longleaf pine. Where competing vegetation is controlled or removed, by site preparation, burning, cutting, or girdling, seedlings survive and grow well. In some areas of this map unit, the use of planting and harvesting equipment is severely limited by wetness and ponding.

Most areas of this map unit are poorly suited to most engineering uses because of wetness. Except for the soils on the higher elevations, the soils in this map unit have severe limitations for use as septic tank absorption fields. Wetness and ponding severely limit most areas of this map unit for use as sites for dwellings and local roads and streets and for most recreation uses. These limitations can generally be reduced by special design and increased maintenance.

3. Goldsboro-Kenansville-Woodington

Moderately well drained, well drained, and poorly drained soils that have a sandy or loamy surface layer and a loamy subsoil; on broad, nearly level and gently sloping areas

This map unit generally is on low ridges and in moderately well-defined drainageways. Soils in the gently sloping areas have a lower water table than the soils in the nearly level areas, which have a shallow water table. Areas of this map unit are triangular, about six miles wide, and in the western part of the county. These areas are generally undulating. About half of the acreage, mostly on higher lying areas, is in openland. The rest, in lower in areas that have not been drained, is in woodland of mostly a mixture of pine and hardwood trees. About half of the buildings in this map unit are farmsteads that have many adjacent buildings. The other buildings are homes on small acreages. There are many roads that provide easy access to all parts of the map unit. Small farm ponds are numerous.

This map unit makes up about 5.5 percent of the county. It is about 14.5 percent Goldsboro soils, 10.5 percent Kenansville soils, and 10 percent Woodington soils. The remaining 65 percent is soils of minor extent.

The Goldsboro soils are in broad, nearly level areas on intermediate elevations in this map unit. They have a brownish sandy surface layer and a mottled, brownish loamy subsoil.

The Kenansville soils are in broad, nearly level and gently sloping areas on the higher elevations in this map unit. These soils have a thick, brownish sandy surface layer and a yellowish loamy subsoil.

The Woodington soils are in broad, nearly level areas or in slightly concave areas on the lower elevations in

this map unit. These soils have a grayish loamy surface layer and a grayish loamy subsoil.

The soils of minor extent in this map unit include the Blanton, Suffolk, and Emporia soils on the side slopes and higher ridges, the Lynchburg soils at intermediate elevations, and the Coxville and Pocomoke soils in the depressions and drainageways.

About 50 percent of this map unit has been cleared. Most of the cleared areas are used for row crops; some are used for pasture and hay. In most areas, the soils are suited to corn, soybeans, and tobacco. Drainage is required to produce consistently high yields. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

These soils are suited to pasture and hay. Improved bermudagrass and bahiagrass grow well. A proper stocking rate, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Shallow surface drains can be used to lower the water table.

These soils are suited to slash pine, loblolly pine, and longleaf pine. Where competing vegetation is controlled or removed by site preparation, burning, cutting, or girdling, seedlings survive and grow well. In some areas of this map unit, the use of planting and harvesting equipment is severely limited by wetness and ponding.

Most areas of this map unit are poorly suited to most engineering uses because of wetness. Except for the soils on the higher elevations, the soils in this map unit are severely limited for use as sites for septic tank absorption fields. Wetness and ponding severely limit most areas of this map unit for use as sites for dwellings, local roads and streets, and for most recreation uses. These limitations can generally be reduced by special design and increased maintenance.

Nearly Level and Gently Sloping Soils That Have a Clayey or Loamy Subsoil

Four general soil map units are in this group. Areas of these soils are throughout the county, but most of them are in the eastern part of the county. These soils range from very poorly drained to moderately well drained. Less than one-third of the acreage of these soils is in openland, and the rest is in woodland.

4. Eulonia-Bladen-Wahee

Moderately well drained, poorly drained, and somewhat poorly drained soils that have a loamy or sandy surface layer and a clayey or loamy subsoil; on nearly level and gently sloping areas

This map unit is in nearly level areas, on some slide slopes on uplands, and in poorly defined drainageways. Soils in the areas adjacent to drainageways commonly have gentle slopes and a lower water table than do most of the soils in the nearly level areas, which have a shallow water table. Areas of this map unit are scattered from east to west across the middle part of the county and on the northern side of the Waccamaw River. The areas generally are nearly level. About one-third of the acreage, mostly on the higher lying areas, is openland. The rest, on lower lying areas that have not been drained, is in woodland of mostly a mixture of pine and hardwood trees. About one-third of the buildings on this map unit are farmsteads that have a few adjacent buildings. The other buildings are homes on small acreages. This map unit has a moderate number of roads. Farm ponds are common.

This map unit makes up about 7.5 percent of the county. It is about 22 percent Eulonia soils, 15 percent Bladen soils, and 11 percent Wahee soils. The remaining 52 percent is soils of minor extent.

The Eulonia soils are in nearly level to gently sloping areas on the higher elevations in this map unit. These soils have a brownish sandy surface layer and a mottled, brownish clayey subsoil.

The Bladen soils are in nearly level areas on the lower elevations in this map unit. They have a grayish loamy surface layer and a mottled, grayish clayey subsoil.

The Wahee soils are in nearly level areas on intermediate elevations in this map unit. They have a grayish loamy surface layer and a mottled, grayish and brownish clayey subsoil.

The soils of minor extent in this map unit include the Yemassee soils at intermediate elevations and the Meggett, Ogeechee, and Hobcaw soils in depressions and along drainageways.

About one-third of the acreage of this map unit has been cleared. Most of the cleared areas are used for row crops; some are used for pasture and hay. In most areas, the soils are suited to corn and soybeans. In some areas, they are suited to tobacco and specialty crops, such as strawberries (fig. 1). Drainage is required to produce consistently high yields. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

These soils are suited to pasture and hay. Improved bermudagrass, bahiagrass, and tall fescue grow well. A proper stocking rate, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Shallow surface drains can be used to lower the water table.

These soils are suited to slash pine, loblolly pine, and longleaf pine. Where competing vegetation is controlled or removed by site preparation, burning, cutting, or girdling, seedlings survive and grow well. In some areas of this map unit, the use of planting and harvesting equipment is severely limited by wetness and ponding.

Most areas of this map unit are poorly suited to engineering uses because of wetness. The soils in this map unit have severe limitations for use as septic tank absorption fields. Wetness and ponding severely limit most areas of this map unit for use as sites for dwellings

Figure 1.—Specialty crops, such as strawberries, grow well on Eulonia loamy fine sand, 0 to 2 percent slopes.

and local roads and streets and for most recreation uses. These limitations can generally be reduced by special design and increased maintenance.

5. Yauhannah-Ogeechee-Bladen

Moderately well drained and poorly drained soils that have a loamy or sandy surface layer and a loamy or clayey subsoil; on broad, nearly level areas

This map unit generally is on nearly level areas of the Atlantic Coast flatwoods and in poorly defined drainageways. Almost all areas of these soils have a shallow water table. Soils in the higher lying areas have the lowest water table. Some areas of this map unit are scattered from east to west across the lower middle part of the county. Other areas are on the north and south side of the Waccamaw River from the North Carolina State line to the Georgetown County line. About one-third of the acreage of this map unit, mostly in the higher lying areas, is openland. The rest, in lower lying areas that have not been drained, is in woodland, supporting mostly a mixture of pine and hardwood trees. About one-third of the buildings in this map unit are farmsteads that have few adjacent buildings. The other buildings are mostly homes on small acreages. This map unit has a moderate number of roads. Farm ponds are common.

This map unit makes up about 19 percent of the county. It is about 26 percent Yauhannah soils, 22 percent Ogeechee soils, and 13 percent Bladen soils. The remaining 39 percent is soils of minor extent.

The Yauhannah soils are in broad, nearly level areas on the higher elevations in this map unit. These soils have a brownish loamy surface layer and a mottled, brownish loamy subsoil.

The Ogeechee soils are in nearly level areas on the lower elevations in this map unit. These soils have a black sandy surface layer and a mottled, grayish loamy subsoil.

The Bladen soils are in nearly level areas on the lower elevations in this map unit. These soils have a grayish loamy surface layer and a mottled, grayish clayey subsoil.

The soils of minor extent in this map unit include the Chisolm and Eulonia soils on the higher ridges and in gently sloping areas, the Yemassee and Wahee soils on intermediate elevations, and the Meggett soils on the lower elevations and on flats.

About one-third of the acreage of this map unit has been cleared. Most of the cleared areas are used for row crops; some are used for pasture and hay. In most areas, the soils are suited to corn and soybeans. In some areas, they are suited to tobacco. Drainage is required to produce consistently high yields. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

These soils are suited to pasture and hay. Improved bermudagrass, bahiagrass, and tall fescue grow well on most areas of these soils. A proper stocking rate, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Shallow surface drains can be used to lower the water table.

These soils are suited to slash pine, loblolly pine, and longleaf pine. Where competing vegetation is controlled or removed by site preparation, burning, cutting, or girdling, seedlings survive and grow well. In some areas of these soils, the use of planting and harvesting equipment is severely limited by wetness and ponding.

Most areas of this map unit are poorly suited to engineering uses because of wetness. The soils in this map unit have severe limitations for use as septic tank absorption fields. Wetness and ponding severely limit most areas of this map unit for use as sites for dwellings and local roads and streets and for most recreation uses. These limitations can generally be reduced by special design and increased maintenance.

6. Yonges-Meggett

Poorly drained soils that have a loamy surface layer and a loamy or clayey subsoil; in drainageways, on flood plains, and on nearly level areas

This map unit is in nearly level, swampy, moderately well defined drainageways. Except for soils on a few high knolls, all of the soils in this map unit have a very shallow water table and are subject to some flooding and ponding. Some areas of this map unit are in the western part of the county in Lake Swamp and Chinners Swamp. Other areas, in the middle part of the county, extend from east to west parallel to and adjacent to the Waccamaw River. Almost all areas of this map unit are in woodland of mostly hardwood trees but also a few scattered pine on the knolls. These areas have not been drained. A few small, open areas are used for pasture and wildlife habitat. There are very few buildings in this map unit. Roads have been built only at major crossings to higher lands. Farm ponds are few.

This map unit makes up about 8 percent of the county. It is about 25 percent Yonges soils and 24 percent Meggett soils. The remaining 51 percent is soils of minor extent.

The Yonges soils are in drainageways and in nearly level areas on the lowest elevations in this map unit. These soils have a grayish brown loamy surface layer and a mottled, grayish loamy subsoil.

The Meggett soils are in drainageways and on flood plains throughout the map unit. These soils have a dark grayish brown loamy surface layer and a mottled, grayish loamy and clayey subsoil.

The soils of minor extent in this map unit include the Wahee soils on the higher elevations, the Ogeechee soils at lower elevations, and the Johnston, Rutlege, Pocomoke, and Hobcaw soils in the depressions and drainageways.

These soils are mostly in woodland. Some small, open areas are used for pasture and wildlife habitat. Flooding, wetness, and ponding are severe limitations to use of these soils for cultivated crops and pasture.

These soils are suited to bottom land hardwood tree species and if drained, to loblolly and slash pine. Wetness and flooding are severe limitations to seedling survival. These limitations can be partly reduced by the use of dikes, diversion ditches, and embankments. Planting seedlings on beds also helps to reduce these limitations. Restricting the use of equipment to the drier months and using specially designed equipment help reduce the limitations caused by wetness.

These soils are poorly suited to engineering uses. The soils in this map unit have severe limitations for use as septic tank absorption fields because of flooding, wetness, and ponding. These limitations are so severe and difficult to reduce that alternate sites should be selected. Wetness, flooding, and ponding severely limit the use of these soils as sites for local roads and streets and for most recreational uses.

7. Brookman-Bladen

Very poorly drained and poorly drained soils that have a loamy surface layer and a clayey subsoil; in broad, nearly level depressions and on flats

This map unit is in nearly level areas and in adjacent poorly defined drainageways. All of the soils in this map unit have a very shallow water table and are subject to some flooding and ponding. Areas of this map unit are about four miles wide and are in the southeastern part of the county near Myrtle Beach. About one-fourth of the acreage of this map unit, mostly drained areas, is in openland. The rest of the acreage has not been drained and is in woodland of mostly a mixture of pine and hardwood trees. Most buildings are in urban areas, but there are a few homes on small lots. This map unit has many roads and streets. Farm ponds are very few.

This map unit makes up about 2 percent of the county. It is about 28 percent Brookman soils, and 22 percent

Bladen soils. The remaining 50 percent is soils of minor extent.

The Brookman soils are in broad, nearly level depressions and on flats at slightly lower elevations in this map unit. These soils have a black loamy surface layer and a grayish clayey subsoil.

The Bladen soils are in nearly level areas on the lower elevations in this map unit. These soils have a loamy surface layer and a mottled, grayish clayey subsoil.

The soils of minor extent in this map unit include the Yauhannah and Eulonia soils on the higher elevations and the Meggett and Yonges soils in depressions and drainageways.

About one-fourth of the acreage of this map unit has been cleared and drained. Most of the cleared areas are used for row crops; some are used for pasture and hay. In most areas, these soils, if adequately drained, are suited to corn and soybeans. Drainage is required to produce consistently high yields. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

These soils are suited to pasture and hay. Bahiagrass and tall fescue grow well. A proper stocking rate, pasture rotation, and restricting grazing during wet periods help to keep the pasture and soil in good condition. Deep subsurface drains and shallow surface drains can be used to lower the water table.

These soils are well suited to slash pine and loblolly pine. Drainage improves woodland production on these soils. In areas where competing vegetation is controlled and the water table lowered, seedlings survive and grow well. Plant competition can be controlled by several methods, such as bedding, site preparation, burning, cutting, or girdling. In most areas of this map unit, the use of planting and harvesting equipment is severely limited by wetness and ponding.

These soils are poorly suited to engineering uses. The soils in this map unit are severely limited for use as sites for septic tank absorption fields. The severe limitations are so difficult to reduce that alternate sites should be selected. Wetness, flooding, and ponding severely limit the use of soils in this map unit as sites for dwellings, local roads and streets, and for most recreation uses.

Nearly Level and Gently Sloping Soils That Have a Sandy or Loamy Subsoil

The three general soil map units in this group are throughout the county. The soils range from very poorly drained to excessively drained. Some areas are in urban land, but most areas are in woodland.

8. Pocomoke-Echaw-Centenary

Very poorly drained and moderately well drained soils that have a loamy or sandy surface layer and a loamy or sandy subsoil; in drainageways and on nearly level areas

This map unit is on low, nearly level, sandy ridges and in poorly defined drainageways. Soils in the drainageways have a higher water table and, generally, a more loamy subsoil than the soils in the nearly level areas. These soils have a lower water table and a stained organic layer below a depth of 30 inches. Areas of this map unit are scattered mostly around the west-central part of the county. About one-fifth of it, mostly on the higher lying areas, is open land. The rest is in woodland, which is dominantly pine and has an understory vegetation of wiregrass. There are very few farmsteads and adjacent buildings in this map unit. Most buildings are houses on small acreages. Roads and farm ponds are few.

This map unit makes up about 10 percent of the county. It is about 11 percent Pocomoke soils, 10 percent Echaw soils and 8 percent Centenary soils. The remaining 71 percent is soils of minor extent.

The Pocomoke soils are mostly in drainageways on the lower elevations. They have a black loamy surface layer and a grayish brown loamy subsoil.

The Echaw soils are in nearly level areas on intermediate elevations. They have a brownish sandy surface layer and a brownish or black stained subsoil.

The Centenary soils are in nearly level areas on the higher elevations. They have a grayish sandy surface layer and a mottled, brownish sandy subsurface layer. They have a brownish or black sandy subsoil.

The soils of minor extent in this map unit include the Lakeland soils on the higher ridges, the Witherbee soils on the intermediate elevations, and the Leon, Lynn Haven, and Rutlege soils on the lower elevations.

About one-fifth of the acreage of this map unit has been cleared. Most of the cleared areas are used for row crops or as pasture and hayland. In most areas, the soils are suited to corn and soybeans, and some areas are suited to tobacco. Drainage is required to produce consistently high yields. Leaving crop residue on or near the surface helps to conserve moisture, maintain tilth, control erosion, and increase production.

These soils are suited to pasture and hay. Improved bermudagrass grows well on most of the soils. A proper stocking rate, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Shallow surface drains can be used to lower the water table.

These soils are suited to slash pine, loblolly pine, and longleaf pine. Where competing vegetation is controlled or removed by site preparation, burning, cutting, or girdling, seedlings survive and grow well. In many areas of this map unit, the use of planting and harvesting equipment is severely limited by wetness and ponding.

Most areas of this map unit are poorly suited to engineering uses because of wetness. Except for the soils on the higher elevations, the soils in this map unit have severe limitations for use as septic tank absorption fields. Wetness and the sandy texture of these soils limit

their use as sites for dwellings, local roads and streets, and for most recreation uses. These limitations can generally be reduced by special design and increased maintenance.

9. Lynn Haven-Leon

Poorly drained soils that are sandy throughout; in drainageways and on nearly level areas

This map unit is on low, nearly level, sandy ridges and in poorly defined drainageways. Almost all of the soils in this map unit have a high water table and a stained organic layer within 30 inches of the surface. This map unit is in the southeastern part of the county. About four-fifths of it is in woodland, which is dominantly pine forest. The rest, mostly small areas used for pasture and as wildlife habitat, is in openland. There are a few houses on small acreages around the perimeter of this map unit. Roads and farm ponds are very few.

This map unit makes up about 6.5 percent of the county. It is about 31 percent Lynn Haven soils and 29 percent Leon soils. The remaining 40 percent is soils of minor extent.

The Lynn Haven soils are mostly in drainageways on the lowest elevations in this map unit. These soils have a black sandy surface layer underlain by a grayish sandy subsurface layer and a brownish or black subsoil.

The Leon soils are in nearly level areas on slightly higher elevations in this map unit. These soils have a black sandy surface layer, a grayish sandy subsurface layer, and a black or brownish subsoil.

The soils of minor extent in this map unit include the Echaw, Centenary, and Witherbee soils on the higher elevations and the Pocomoke, Rutlege, and Johnston soils on the lower elevations.

About one-fifth of the acreage of this map unit has been cleared. The cleared areas are used mostly as wildlife habitat, but some areas are used for pasture and hay. Drainage is required to produce consistent yields.

These soils are suited to pasture and hay. Improved bermudagrass grows well on most areas of the soils. A proper stocking rate, pasture rotation, and restricted grazing during wet periods help keep the pasture and soil in good condition. Deep subsurface drains and shallow surface drains can be used to help lower the water table.

These soils are poorly suited to woodland. Limitations for seedling survival are moderate to severe because of wetness and the sandy nature of the soils. These limitations can be partially controlled by drainage, planting seedlings on beds, scheduling planting and harvesting during dry seasons, and using specially designed equipment.

These soils are poorly suited to engineering uses because of wetness. The soils in this map unit have severe limitations for use as septic tank absorption fields. Wetness and ponding severely limit the soils for use as sites for dwellings and local roads and streets and for most recreation uses. These limitations can generally be reduced by special design and increased maintenance.

10. Lakeland-Leon-Newhan

Excessively drained and poorly drained soils that are sandy throughout; in drainageways, on broad ridges and slopes, and on dunes

This map unit is on gently sloping sand dunes and ridges adjacent to the Atlantic Ocean and in moderately defined drainageways. Soils in the drainageways have a high water table and a stained organic layer within 30 inches of the surface. Soils in the nearly level to gently sloping areas have a deep water table. Areas of this map unit are in the extreme southeastern part of the county and border the Atlantic Ocean. These soils are nearly level to gently sloping, and most areas have been developed for urban uses or for recreation. There are a few small scattered areas of woodland of mostly pine trees on undeveloped lots. There are very few farmsteads, as the entire area is mostly urban. This map unit has many roads and streets. Farm ponds are few.

This map unit makes up about 4.5 percent of the county. It is about 32 percent Lakeland soils, 15 percent Leon soils, and 7 percent Newhan soils. The remaining 46 percent is soils of minor extent.

The Lakeland soils are in nearly level and gently sloping areas on the higher elevations in this map unit. These soils have a brownish sandy surface layer and are underlain by yellowish brown sand.

The Leon soils are in nearly level areas on the lower elevations in this unit. These soils have a black sandy surface layer and a grayish sandy subsurface layer underlain by a black or brownish sandy subsoil.

The Newhan soils are mostly on gently sloping dunes on the higher elevations in this map unit. They have a grayish sandy surface layer that contains small fragments of marine shells and yellowish sandy underlying material.

The soils of minor extent in this map unit include the Blanton soils on the higher ridges and gently sloping areas, the Centenary soils at the intermediate elevations, the sandy beaches along the coast, and the Bohicket soils in the tidal marsh areas on the lower elevations.

Nearly all of the acreage of this map unit has been cleared. Almost the entire area has been developed for urban and recreation uses.

Most of these soils are well suited to engineering uses. Poor filtration is a severe hazard for use of these soils as septic tank absorption fields. The soils in this map unit are suited to use as sites for dwellings and for local roads and streets. These soils are well suited to recreation uses.

Nearly Level Soils on Flood Plains and in Drainageways

The two general soil map units in this group are along the Pee Dee River, the Waccamaw River, and the Lumber River, and along the other major streams in the county. These poorly drained soils are almost entirely in woodland.

11. Johnston-Rutlege

Poorly drained soils that are loamy or sandy throughout; in drainageways and on flood plains

This map unit is in swamps and on nearly level flood plains. Almost all areas of these soils have a high water table and generally are flooded during part of the year. Most of the acreage of this map unit is in the western part of the county along the Little Pee Dee River swamp. Areas of this map unit are also in the eastern part of the county at the upper end of the Waccamaw River swamp. Nearly all of the acreage of this map unit is in woodland of mostly hardwood trees but also a few scattered pine on the knolls at slightly higher elevations. These soils have not been drained. A few small open areas are used as wildlife habitat. A few buildings, mostly recreation cabins, are adjacent to the rivers. Roads have been built only at major crossings to higher points. Farm ponds are very few.

This map unit makes up about 5 percent of the county. It is about 47 percent Johnston soils and 12 percent Rutlege soils. The remaining 41 percent is soils of minor extent.

The Johnston soils are in depressions and drainageways and, generally in the deeper part of the swamp, on nearly level flood plains. These soils have a black loamy surface layer and a grayish brown loamy subsoil.

The Rutlege soils are in depressions and drainageways and are scattered throughout the flood plains, generally around the edges of the swamp. These soils have a black sandy surface layer underlain by grayish sand.

The soils of minor extent in this map unit include the Lakeland soils on the highest elevations, the Echaw, Leon, Lynn Haven, and Osier soils on intermediate elevations, and the Pocomoke soils on the lower elevations.

These soils are mostly in woodland. Some small, open areas are used as wildlife habitat. Flooding, wetness, and ponding are severe limitations to the use of these soils for cultivated crops and pasture.

These soils are suited to bottom land hardwood trees and, if drained, to loblolly and slash pine. Limitations to seedling survival are severe because of wetness and flooding. These limitations can be partly controlled by using dikes, diversions, ditches, and embankments. Planting seedlings on beds also helps to overcome these limitations. Restricting equipment use to the drier months and using specially designed equipment help reduce the limitations caused by excess water.

These soils are poorly suited to engineering uses. The soils in this map unit are severely limited for use as sites for septic tank absorption fields. Because the severity of these limitations makes them difficult to reduce, alternate sites should be selected. Wetness, flooding, and ponding severely limit the use of soils in this map unit as sites for dwellings and local roads and streets and for most recreation uses.

12. Hobonny

Poorly drained soils that are organic throughout; on flood plains

This map unit is in swamps and on nearly level flood plains. Most areas of these soils have a high water table and generally are flooded during part of the year. This map unit is in the southern part of the county along the Waccamaw River swamp from the Georgetown County line to the town of Conway. Almost all areas of this map unit are in woodland, mostly in hardwood trees. A few scattered pine trees are on the knolls at slightly higher elevations. These soils have not been drained. A few small open areas are used as wildlife habitat. A very few buildings, mostly recreation homes, are adjacent to the rivers. This map unit has roads only at major crossings to higher lands. Farm ponds are few.

This map unit makes up about 3 percent of the county. It is about 78 percent Hobonny soils and 22 percent is soils of minor extent.

The Hobonny soils are in depressions and drainageways and on nearly level flood plains throughout this map unit. They have a brownish muck surface layer over a brownish muck underlying layer.

The soils of minor extent in this map unit include the Eulonia and Wahee soils on the higher elevations on the edges of the map unit, the Megget soils on the intermediate elevations, and the Johnston soils on the lower elevations in small drainageways.

These soils are mostly in woodland. A few small, open areas are used as wildlife habitat and for recreation. Flooding, wetness, and ponding are severe limitations for the use of these soils for cultivated crops and pasture.

These soils are severely limited for tree production because of the flooding and wetness and the mucky nature of the soil. Using special equipment, such as helicopters, for logging in dry seasons can help reduce wetness and the hazard of flooding.

These soils are poorly suited to engineering uses. The soils in this map unit have severe limitations to use as sites for septic tank absorption fields. Because the severity of these limitations makes them difficult to reduce, alternate sites should be selected. Wetness, flooding, and ponding severely limit the soils in this map unit for use as sites for dwellings and local roads and streets and for recreation uses.

Broad Land Use Considerations

The soils in Horry County vary widely in their potential for major land uses. Approximately 70 percent of the land in the county is used primarily as woodland and as wildlife habitat. Most areas are suited to wildlife habitat. The soils in map units 1, 2, 3, 4, and 5 generally are well suited to use as habitat for openland wildlife, and the soils in map units 6 and 7 generally are suited to use as habitat for woodland wildlife. The soils in map units 11 and 12 generally are well suited to use as habitat for wetland wildlife.

Approximately 25 percent of the land in the county is used for crops, mainly soybeans, corn, small grain, and tobacco. The cropland is scattered throughout the county, but most of it is in map units 1 and 2.

About 5 percent of the county is in urban or developed land. The soils in the county range from well suited to poorly suited to urban development. Many of the soils have a seasonal high water table. The soils in map units 1, 2, 3, 4, 5, 8, and 10 generally have some areas that are suited to development.

Detailed Soil Map Units

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

Each map unit on the detailed soil maps represents an area on the landscape and consists of one or more soils for which the unit is named.

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

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

Soils of one series can differ in texture of the surface layer or of the underlying material. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Goldsboro loamy fine sand, 0 to 2 percent slopes, is one of several phases in the Goldsboro series.

Some map units in this county are made up of two or more major soils. These map units are called undifferentiated groups.

An *undifferentiated group* is made up of two or more soils that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils in a mapped area are not uniform. An area can be made up of only one of the major soils, or it can be made up of all of them. Udorthents and Udipsamments, well drained, is an undifferentiated group in this survey area.

Most map units include small scattered areas of soils other than those for which the map unit is named. Some of these included soils have properties that differ substantially from those of the major soil or soils. Such differences could significantly affect use and management of the soils in the map unit. The included soils are identified in each map unit description. Some small areas of strongly contrasting soils are identified by a special symbol on the soil maps.

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

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

Table 4 gives the acreage and proportionate extent of each map unit. Other tables (see "Summary of Tables") give properties of the soils and the limitations, capabilities, and potentials for many uses. The Glossary defines many of the terms used in describing the soils.

Bc—Beaches. This map unit is on sandy shorelines that border the Atlantic Ocean. Only a small acreage of this map unit is in the county. The Beaches are covered twice daily by tides and are nearly level or gently sloping.

Typically, the surface layer is light gray fine sand. The underlying material consists of irregularly occurring narrow bands of fine sand that ranges from gray to very dark gray. Reaction in this map unit ranges from neutral to moderately alkaline. Areas of this map unit are highly saline. This map unit contains varying amounts of shells and shell fragments and commonly has many fine black minerals.

Most of the acreage of this map unit is unstable and is being eroded at the rate of a few inches to more than a foot per year. In a few areas, the acreage of this map unit is growing. Erosion and deposition of material on this map unit are related to tidal currents and wind direction. The hazard of erosion is a constant management concern that is expensive to control (fig. 2).

This map unit is suited to recreation use. It is used extensively by bathers in the summer. This map unit is also used for surf fishing, walking, and jogging. It is unsuited to most other uses.

The capability subclass of this map unit is VIIIw. It has not been assigned to a woodland suitability group.

Bd—Bladen fine sandy loam. This poorly drained, nearly level soil is on low fluvial or marine terraces on the lower elevations in the county. Individual areas of this soil are irregular in shape and range from 20 to 150 acres.

Typically, the surface layer is very dark gray fine sandy loam about 6 inches thick. The subsoil to a depth of 62 inches is gray clay that has mottles in shades of brown, yellow, and red.

Included with this soil in mapping are a few small areas of Eulonia, Yauhannah, and Yemassee soils. The included soils make up about 15 percent of this map unit.

This soil is low in content of organic matter. Permeability is slow, and the available water capacity is moderate. The seasonal high water table ranges from 1 foot above the surface to 1 foot below the surface from December through May. Shrink-swell potential is moderate.

Most areas of this soil are in woodland. Some small areas are in cropland, hayland, pasture, and urban uses. This soil is well suited to use as woodland. It is poorly suited to use as cropland and to most urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco. It is also poorly suited to use as pasture and hayland because of the seasonal high water table and ponding. Because this soil is low on the landscape and does not have suitable outlets, drainage commonly is not feasible.

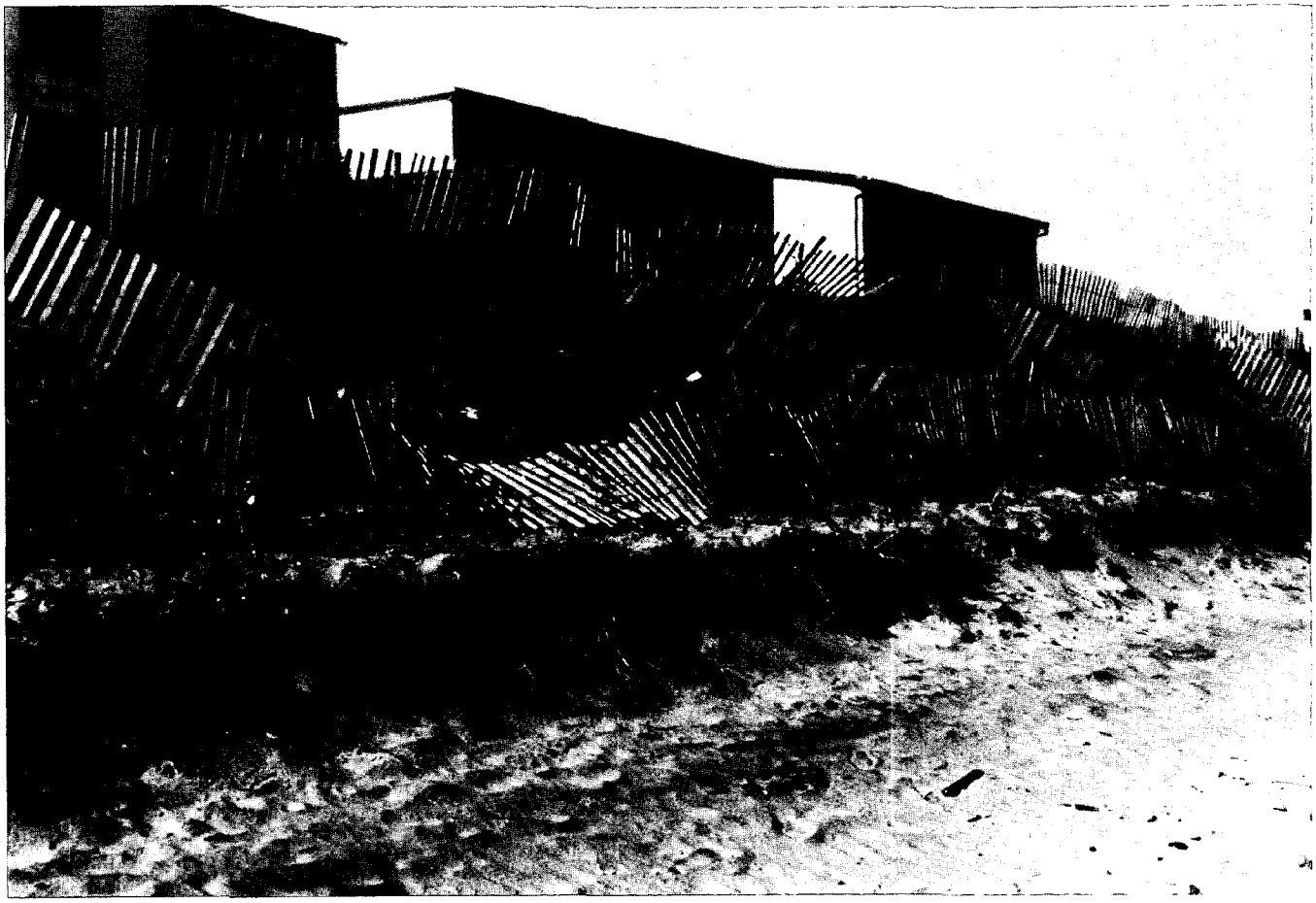

Figure 2.—An area of Beaches adjacent to Newhan fine sand, 0 to 6 percent slopes. Beaches is unsuited to development because of the hazard of erosion.

This soil is well suited to use as woodland. Loblolly pine, slash pine, and American sycamore are suitable trees to plant. The understory vegetation consists of broom sedge, little bluestem, giant cane, and sedge. Limitations on the use of equipment are severe, and the rate of seedling mortality is high because of the high water table and ponding. Planting and harvesting should be done during dry seasons, and specially designed equipment should be used to help reduce these limitations.

This soil is poorly suited to urban uses. Ponding and the slow permeability of the soil are severe limitations to the use of this soil as septic tank absorption fields. This soil has severe limitations to use as sites for dwellings without basements and for local roads and streets because of the ponding, low strength, and shrink-swell potential. These limitations are difficult to reduce, and alternate sites should be selected.

The capability subclass of this soil is Vw, and the woodland suitability group is 2w.

BnA—Blanton sand, 0 to 6 percent slopes. This somewhat excessively drained soil is on nearly level to gently sloping landscapes adjacent to drainageways. Areas of this soil are throughout the county. Individual areas of this soil are irregular in shape and range from 10 to 200 acres.

Typically, the surface layer is grayish brown sand about 11 inches thick. The subsurface layers, to a depth of 58 inches, are very pale brown and light yellowish brown sand. The subsoil to a depth of 75 inches is yellowish brown and brownish yellow sandy loam. In some areas, the subsoil has mottles.

Included with this soil in mapping are a few small areas of Chipley, Lakeland, Nansemond, and Osier soils. Also included are some small areas that have a clayey substratum and a few small areas that have slopes greater than 6 percent. The included soils make up about 15 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate, and the available water capacity is low. This soil has a perched water table between a depth of 5 and 6 feet from December through March. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some areas are in cropland and pasture, and some small areas are in urban uses. This soil is moderately suited to use as cropland and woodland. It is well suited to most urban uses.

This soil is moderately suited to most row crops, including tobacco, and to use as pasture and hayland. Moderate droughtiness and soil blowing are hazards. Using minimum tillage, planting windbreaks, and leaving crop residue on the soil help prevent soil blowing and also help to conserve soil moisture. This soil has a low nutrient holding capacity because its sandy texture allows nutrients to leach out. This limitation can be reduced by using split applications of fertilizer.

This soil is moderately suited to use as woodland. Loblolly pine and slash pine are suitable trees to plant. The understory vegetation consists of turkey oak, post oak, blackjack oak, pineland threeawn, and other grasses and shrubs. The thick, sandy surface layer of this soil is a moderate limitation to the use of equipment and causes a moderate rate of seedling mortality. Tracks or wide tires can be used on equipment to improve traction and prevent vehicles from bogging down. The rate of seedling survival can be improved by proper seedbed preparation, such as planting seedlings in deep furrows, and by selecting timely planting dates.

This soil is well suited to urban uses. It has moderate limitations to use as septic tank absorption fields because of wetness. It has slight limitations to use as sites for dwellings without basements and for local roads and streets.

The capability subclass of this soil is IIIs, and the woodland suitability group is 3s.

Bo—Bohicket silty clay loam. This very poorly drained, nearly level soil is on broad tidal flats. Individual areas of this map unit are irregular in shape and range from 50 to 800 acres.

Typically, the surface layer is dark greenish gray silty clay loam about 12 inches thick. The underlying material to a depth of 72 inches is dark greenish gray silty clay loam or silty clay.

Included with this soil in mapping are a few small areas of Centenary, Lakeland, Leon, Lynn Haven, Newhan, and Rutlege soils; Beaches; and Udorthents. The included soils make up less than 10 percent of this map unit.

This soil is moderate in content of organic matter. Permeability is very slow, and the available water capacity is very low. Twice a day, this soil is flooded by three feet of tidal saltwater. Shrink-swell potential is high.

Most areas of this soil are in a natural state. The vegetation consists of smooth cordgrass, needlegrass, and big cordgrass. This soil is well suited to use as marine and wildlife habitat. It is not suited to use as cropland or woodland or to urban uses because of flooding, ponding, low strength, and shrink-swell potential. These severe limitations are difficult to reduce, and alternate sites should be selected.

This soil is well suited to certain types of recreation, such as fishing, hunting, shrimping, and crabbing (fig. 3). It is well suited to marsh vegetation and provides a natural habitat for marine life and wildlife.

The capability of this soil is VIIIw. It has not been assigned to a woodland suitability group.

Br—Brookman loam. This very poorly drained, nearly level soil is in broad, shallow depressions and on flats in the southeastern part of the county. Individual areas of

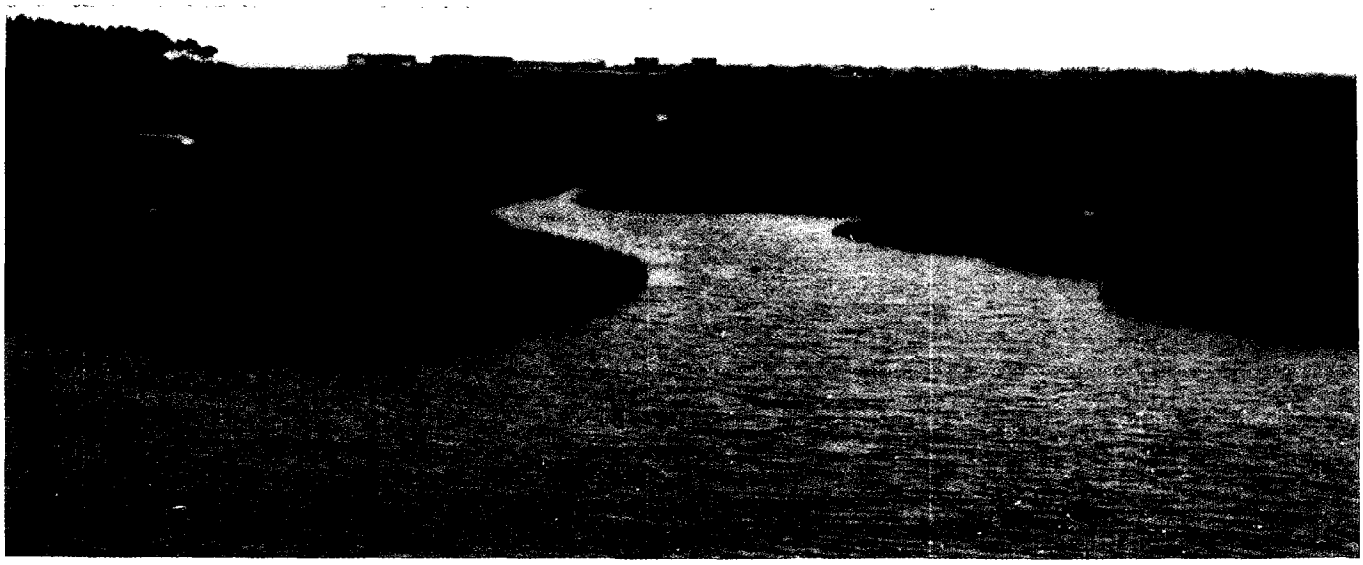

Figure 3.—A marsh on Bohicket silty clay loam at high tide. This area is used for fishing, crabbing, hunting, and boating.

this map unit are irregular in shape and range from 40 to 1,000 acres.

Typically, the surface layer is black loam about 10 inches thick. The subsoil is very dark gray or gray clay to a depth of 46 inches and mottled gray sandy clay loam to a depth of 68 inches.

Included with this soil in mapping are small areas of Yemassee, Yonges, and Wahee soils. The included soils make up about 10 percent of this map unit.

This soil is moderate in content of organic matter. Permeability is slow, and the available water capacity ranges from high to very high. The seasonal high water table ranges from the surface to 1 foot below the surface from November through May. Shrink-swell potential is moderate.

Most areas of this soil are in woodland. Some areas are in cropland, and small areas are in urban uses. This soil is well suited to use as woodland, moderately suited to cropland, and poorly suited to urban uses.

This soil is suited to corn and soybeans and well suited to bahiagrass, pasture, and hay. It is poorly suited to tobacco. The seasonal high water table and the clayey subsoil are major management concerns. Deep ditches and shallow surface drains can be used to provide drainage if good outlets are available. Land shaping improves drainage. Planting on beds helps prevent crop damage caused by wetness. Using minimum tillage and leaving crop residue on or near the surface help reduce the formation of clods and improve the tilth. Restricting the use of this soil as pasture and hayland during wet periods helps to keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine, slash pine, sweetgum, and water tupelo are suitable trees to plant. The understory vegetation consists of cabbage palm, greenbriar, red maple, sedge, and switchgrass. Equipment limitations and seedling mortality are severe management concerns because of wetness. Woodland production can be increased by adequate drainage. Planting and harvesting during dry seasons and using specially designed equipment help reduce the limitations cause by wetness. Planting seedlings on beds helps improve the survival rate of the seedlings.

This soil is poorly suited to most urban uses because of wetness, slow permeability, and low strength. It has severe limitations for use as septic tank absorption fields, as sites for dwellings without basements, and for local roads and streets because of wetness and the clayey subsoil. These severe limitations are difficult to overcome and alternate sites should be selected.

The capability subclass of this soil is IIIw, and the woodland suitability group is 2w.

Ce—Centenary fine sand. This moderately well drained, nearly level soil is on broad ridges and flats throughout the county. Individual areas of this map unit are irregular in shape and range from 20 to 200 acres.

Typically, the surface layer is dark gray fine sand about 5 inches thick. The subsurface layer, to a depth of 42 inches, is brownish yellow fine sand that is mottled in the lower part. To a depth of 68 inches, the subsurface layer is light gray fine sand. The subsoil to a depth of 80 inches is very dark brown and black fine sand.

Included with this soil in mapping are small areas of Chisolm, Lakeland, Leon, and Yauhannah soils. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is rapid, and the available water capacity is very low or low. The depth to the seasonal high water table ranges from 3.5 to 5.0 feet below the surface from December through March. Shrink-swell potential is low.

Most areas of this soil are in cropland or pasture or are used as hayland. Some areas are in woodland, and small areas are in urban uses. This soil is suited to use as cropland and woodland, and it is well suited to most urban uses.

This soil is suited to most crops, including tobacco, to pasture, and to use as hayland. It is poorly suited to corn. Moderate soil wetness and the low nutrient holding capacity of the soil are the main management concerns. Surface and subsurface drainage systems can be used to provide drainage if good outlets are available. Tile drains require the use of filters to keep sand out. These soils have a low available water capacity and may be overdrained during dry seasons. Leaving crop residue on the field, using minimum tillage, planting cover crops, and using split applications of fertilizer help improve the soil's nutrient-holding capacity.

This soil is suited to use as woodland. Slash pine and loblolly pine are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, switchgrass, and large holly. Limitations on the use of equipment are moderate, and the rate of seedling mortality is moderate because of the sandiness of the soil. Using specially designed equipment and planting the seedlings in a furrow help reduce these limitations.

This soil is well suited to most urban uses. It has severe limitations to use as septic tank absorption fields because of wetness. The limitation can be reduced by special design or by using another kind of system. There are no major limitations to the use of this soil as sites for dwellings without basements or for local roads and streets.

The capability subclass of this soil is IIIs, and the woodland suitability group is 3s.

ChB—Chisolm fine sand, 0 to 6 percent slopes. This well drained soil is on nearly level to gently sloping rolling areas that are adjacent to drainageways in the southeastern part of the county. Individual areas of this map unit are irregular in shape and range from 10 to 150 acres.

Typically, the surface layer is grayish brown fine sand about 8 inches thick. The subsurface layer, to a depth of 24 inches, is light yellowish brown loamy sand. The subsoil is strong brown sandy clay loam to a depth of 46 inches and yellowish red sandy loam to a depth of 58 inches. The substratum to a depth of 80 inches is mottled yellow sand.

Included with this soil in mapping are small areas of Lakeland, Meggett, Ogeechee, Yauhannah, and Yemassee soils. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Both the permeability and the available water capacity are moderate. The depth to the seasonal high water table ranges from 3.5 to 5.0 feet below the surface from January through March. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some areas are used as pasture and woodland, and some small areas are in urban uses. This soil is moderately suited to use as cropland. It is well suited to use as woodland and to most urban uses.

This soil is moderately suited to crops, including tobacco, and to use as pasture and hayland. It is well suited to coastal bermudagrass. Moderate droughtiness and soil blowing are hazards, and the low nutrient holding capacity of the soil is a management concern. Minimum tillage, crop residue management, and windbreaks help prevent soil blowing and conserve moisture. Using split applications of fertilizer increases the availability of plant nutrients.

This soil is well suited to use as woodland. Slash pine and longleaf pine are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, threeawn, and other annual grasses. Limitations on the use of equipment are moderate and the rate of seedling mortality is moderate because of the thick sandy surface layer. Using specially designed equipment and planting the seedlings in a furrow help reduce this limitation.

This soil is well suited to most urban uses. It has a moderate limitation to use as septic tank absorption fields because of wetness. The limitation can be reduced by special design or by using another kind of system. This soil is well suited to use as sites for dwellings without basements and for local roads and streets. There are no major hazards to these uses.

The capability subclass of this soil is IIs, and the woodland suitability group is 2s.

Co—Coxville fine sandy loam. This poorly drained, nearly level soil is in depressions and along drainageways in the northern part of the county. Individual areas of this soil are irregular in shape and commonly range from 10 to more than 100 acres.

Typically, the surface layer is very dark gray fine sandy loam about 8 inches thick. The subsoil is mostly mottled gray clay to a depth of 56 inches and mottled gray sandy clay loam to a depth of 72 inches.

Included with this soil in mapping are a few small areas of Goldsboro, Lynchburg, and Pocomoke soils. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is slow, and the available water capacity is

moderate to high. The seasonal high water table ranges from the surface to 1.5 feet below the surface from November through April. Shrink-swell potential is moderate.

Most areas of this soil are in woodland. A few small areas are in cropland, pasture, hayland, and urban uses. This soil is well suited to use as woodland, moderately suited to use as cropland, and poorly suited to most urban uses. This soil is well suited to use as pond reservoirs (fig. 4).

This soil is moderately suited to most row crops and to use as hayland. It is well suited to use as pasture. This soil is poorly suited to tobacco. Wetness and the clayey subsoil are the main management concerns. These limitations can be modified by the use of land smoothing, deep ditches, and shallow surface drains. Planting seeds on beds helps reduce damage to crops caused by wetness. Using minimum tillage practices and leaving crop residue on or near the surface help reduce clodding of the surface layer and improve the soil's tilth. Restricting use of the soil for pasture and as hayland during wet periods helps keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine is a suitable tree to plant. The understory vegetation consists of common carpetgrass, longleaf uniola, little bluestem, and large holly. This soil has moderate limitations to the use of equipment and a moderate rate of seedling mortality because of wetness and ponding. In most areas of this soil, drainage helps reduce wetness and ponding. Planting and harvesting during dry periods and using specially designed equipment also help reduce these limitations. Planting seedlings on beds improves the survival rate of the seedlings.

This soil is poorly suited to most urban uses. Wetness and slow permeability of the soil are severe limitations to

Figure 4.—Most areas of Coxville fine sandy loam are suited to recreation ponds.

the use of this soil as septic tank absorption fields and as sites for dwellings without basements and for local roads and streets. These limitations are difficult to reduce, and alternate sites should be selected. In addition, low strength is a severe limitation to the use of this soil as sites for local roads and streets. This limitation can be reduced by constructing roads and streets on suitable subgrade and base material or by constructing them on raised fill material and installing a drainage system.

The capability subclass of this soil is IIIw, and the woodland suitability group is 2w.

DuA—Duplin loamy fine sand, 0 to 2 percent slopes. This moderately well drained soil is on broad, nearly level areas and low ridges adjacent to the flood plains of large streams in the northern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 5 to 100 acres.

Typically, the surface layer is grayish brown loamy fine sand about 9 inches thick. The subsurface layer, to a depth of 17 inches, is very pale brown loamy fine sand. The subsoil, to a depth of 35 inches, is mostly mottled brownish yellow clay. To a depth of 70 inches the subsoil is clay loam and clay that has fine strata of sandy loam and sandy clay loam and brown, red, and gray mottles.

Included with this soil in mapping are a few small areas of Blanton, Emporia, Kenansville, and Nankin soils and small areas that have 2 to 6 percent slopes. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately slow. The available water capacity ranges from moderate to high. Depth to the seasonal high water table ranges from 2 feet to 3 feet below the surface from December through April. The shrink-swell potential of this soil is moderate.

Most areas of this soil are in cropland. Some small areas are in woodland or pasture or are used as hayland. Some small areas are in urban uses. This soil is moderately suited to use as cropland and well suited to use as woodland and pasture. It is moderately suited or poorly suited to urban uses.

This soil is moderately suited to most row crops, including tobacco. It is well suited to use as pasture and hayland. Wetness and the clayey subsoil are the main management concerns. The wetness limitation can be modified by land smoothing and by constructing deep ditches and shallow surface drains, if suitable outlets are available. Minimum tillage, subsoiling, and crop residue management help increase the rate of water infiltration, improve the soil's structure and tilth, and increase the organic matter content of the soil.

The soil is well suited to use as woodland. Loblolly pine, slash pine, sweetgum, and yellow-poplar are suitable trees to plant. The understory vegetation consists mainly of American holly, greenbriar, maple, dogwood, waxmyrtle, and other shrubs. This soil has moderate limitations to the use of equipment and a moderate rate of seedling mortality because of the seasonal high water table. These limitations can be reduced by drainage, restricting equipment use to drier months, and planting seedlings on beds.

This soil is moderately suited or poorly suited to urban uses. It is poorly suited to use as septic tank absorption fields because of wetness and slow permeability. These limitations can be reduced by special design or by using another kind of system. These severe limitations are difficult to reduce, and alternate sites should be selected. This soil is suited to use as sites for dwellings without basements. Wetness and shrinking and swelling are moderate limitations. The wetness limitation can be modified by installing tile drains near footings and by shaping the land so that surface water and runoff are diverted from the dwelling. The shrinking and swelling limitation can be modified by using extra reinforcements in footings and by backfilling with sandy material. This soil is poorly suited to local roads and streets. The low strength of the soil is a severe limitation, but this limitation can be modified by providing a suitable subgrade or base material and by constructing roads and streets so that they are adequately supported.

The capability subclass of this soil is IIw, and the woodland suitability group is 2w.

Ec—Echaw sand. This moderately well drained, nearly level soil is on broad interstream divides and flats throughout the county. Individual areas of this map unit are irregular in shape and range from 5 to 100 acres.

Typically, the surface layer is dark grayish brown sand about 4 inches thick. The subsurface layer, to a depth of 36 inches, is light yellowish brown or brownish yellow loamy sand or sand that has mottles in the lower part. The subsoil to a depth of 72 inches is very dark brown or black sand.

Included with this soil in mapping are small areas of Leon, Rimini, and Rutlege soils. The included soils make up about 15 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately rapid or rapid, and the available water capacity is low. The depth to the seasonal high water table ranges from 2.5 feet to 5.0 feet below the surface from November through April. Shrink-swell potential is low.

Most areas of this soil are in woodland, but some areas are in cropland and pasture. A few small areas are in urban uses. This soil is moderately suited to use as woodland and cropland, and it is well suited to most urban uses.

This soil is moderately suited to crops, including tobacco, to pasture, and to use as hayland. Wetness and the low nutrient-holding capacity of the soil are the main management concerns. The wetness limitation can

be modified by using surface and subsurface drainage systems, if good outlets are available. Subsurface drainage systems require sand filters in order to function properly. These soils have low available water capacity and may be overdrained during dry seasons. Leaving crop residue on or near the surface, using minimum tillage, planting cover crops, and using split applications of fertilizer help improve the availability of crop nutrients.

This soil is moderately suited to use as woodland. Longleaf pine, loblolly pine, and slash pine are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, switchgrass, and large gallberry. The sandiness of the soil is a moderate limitation to the use of equipment, but using specially designed equipment helps reduce this limitation.

This soil is well suited to most urban uses. However, this soil is poorly suited to use as septic tank absorption fields because of wetness. The wetness limitation can be reduced by installing diversions to intercept water coming from higher areas and by using a specially designed or other alternate system. The soil is well suited to use as sites for dwellings without basements and for local roads and streets.

The capability subclass of this soil is IIIs, and the woodland suitability group is 3s.

EmB—Emporia loamy fine sand, 2 to 6 percent slopes. This well drained, gently sloping soil is on knolls and on slopes that range from smooth to choppy in the northern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 50 acres.

Typically, the surface layer is dark brown loamy fine sand about 5 inches thick. The subsoil, to a depth of 54 inches, is yellowish red, strong brown, and yellowish brown sandy clay loam and sandy loam that is mottled in the lower part. The underlying material to a depth of 68 inches is mottled and stratified loamy sand.

Included with this soil in mapping are a few small areas of Duplin, Kenansville, Lynchburg, Nankin, and Rutlege soils. Also included are small areas that have 0 to 2 percent slopes and small areas that have a sandy loam and sandy clay loam surface layer because of erosion. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate in the upper part of the subsoil and moderately slow or slow in the lower part of the subsoil. The available water capacity ranges from moderate to high, and a seasonal perched water table ranges from a depth of 3.0 feet to 4.5 feet from November through April. Shrink-swell potential is low to moderate.

Most areas of the soil are in cropland. Some small areas are in pasture, hayland, woodland, and urban uses. This soil is moderately suited to use as cropland and woodland and to most urban uses.

This soil is moderately suited to most row crops. It is well suited to tobacco and to use as pasture and hayland. This soil has no major limitations if planted to pasture or hayland. Erosion is a hazard if this soil is planted to row crops. Contour tillage, crop rotations that include close-growing grasses, and water management help reduce soil loss from water erosion. Using minimum tillage and leaving crop residue on or near the surface improve the rate of water infiltration and soil tilth and increase the content of organic matter in the soil.

This soil is moderately suited to use as woodland. Loblolly pine and sweetgum are suitable trees to plant. The understory vegetation consists of American holly, blueberry, panicum, flowering dogwood, and other shrubs. This soil has a moderate rate of seedling mortality.

This soil is moderately suited to most urban uses. It has severe limitations to use as septic tank absorption fields because of slow permeability and wetness. These limitations can be modified by using specially designed or other alternate systems. This soil has slight limitations to use as sites for dwellings without basements. Low strength is a moderate limitation to the use of this soil for local roads and streets, but this limitation can be reduced by providing suitable subgrade or base material and by constructing roads and streets so that they are adequately supported.

The capability subclass of this soil is IIe, and the woodland suitability group is 3s.

EuA—Eulonia loamy fine sand, 0 to 2 percent slopes. This moderately well drained, nearly level soil is on broad, smooth ridges in the southeastern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 150 acres.

Typically, the surface layer is grayish brown loamy fine sand about 8 inches thick. The subsurface layer, to a depth of 12 inches, is light yellowish brown fine sandy loam. To a depth of 20 inches, the subsoil is yellowish brown sandy clay loam; to a depth of 40 inches, it is yellowish brown clay and has red and gray mottles; and to a depth of 55 inches, the subsoil is mottled gray, brown, and red sandy clay loam. The substratum to a depth of 80 inches is mottled loamy sand.

Included with this soil in mapping are small areas of Bladen, Chisolm, Meggett, and Ogeechee soils. Small areas that have slopes ranging from 3 to 4 percent are included. These soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately slow, and the available water capacity is moderate. The depth to the seasonal high water table ranges from 1.5 feet to 3.5 feet below the surface from December through May. Shrink-swell potential is low.

Most areas of this soil are in cropland or pasture or are used as hayland. Some areas are in woodland. A

few small areas are in urban uses. This soil is moderately suited to use as cropland and well suited to use as woodland. It is moderately suited or poorly suited to most urban uses.

This soil is moderately suited to row crops, including tobacco, and well suited to use as pasture and hayland. Wetness and the clayey subsoil are the main management concerns. The wetness limitation can be modified by land smoothing and by constructing deep ditches and shallow surface drains, if suitable outlets are available. Chisel plowing and subsoiling help decrease the rate of surface runoff. Using minimum tillage, planting cover crops in the winter, and leaving crop residue on or near the surface help increase the available water capacity, increase the organic matter content, and improve the soil's tilth.

This soil is well suited to use as woodland. Loblolly pine, slash pine, sweetgum, and yellow-poplar are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, and longleaf uniola. Limitations to the use of equipment and the rate of seedling mortality are moderate because of wetness. Planting and harvesting during dry seasons, using specially designed equipment, and planting seedlings on beds help reduce the limitations caused by wetness.

This soil is moderately suited or poorly suited to most urban uses. It has severe limitations to use as septic tank absorption fields because of slow permeability and wetness. These limitations can be reduced by special design or by using an alternative system. These severe limitations are difficult to overcome, and alternate sites should be selected. This soil has moderate limitations to use as sites for dwellings without basements because of wetness. The wetness limitation can be reduced by installing tile drains, by constructing footings, and by shaping the land so that surface runoff moves away from the dwelling. This soil has moderate limitations to use for local roads and streets because of low strength and wetness. The limitation of low strength can be modified by providing suitable subgrade or base material and by special construction that provides adequate support. The wetness limitation can be modified by constructing roads and streets on raised fill material and installing drainage systems.

The capability subclass of this soil is IIw, and the woodland suitability group is 2w.

EuB—Eulonia loamy fine sand, 2 to 6 percent slopes. This moderately well drained, gently sloping soil is on side slopes in the southeastern part of the county. Individual areas of this map unit are irregular in shape and range from 5 to 40 acres.

Typically, the surface layer is grayish brown loamy fine sand about 8 inches thick. The subsurface layer, to a depth of 12 inches, is light yellowish brown fine sandy loam. The subsoil is yellowish brown sandy clay loam to a depth of 20 inches; yellowish brown clay that has red and gray mottles to a depth of 40 inches; and mottled gray, brown, and red sandy clay loam to a depth of 55 inches. The substratum to a depth of 80 inches is mottled loamy sand.

Included with this soil in mapping are small areas of Bladen, Chisolm, Meggett, Ogeechee, and Suffolk soils. Also included are small areas that have slopes of less than 2 percent. Other small areas in which the topsoil has been eroded and the subsoil exposed are included. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately slow, and the available water capacity is moderate. The depth to the seasonal high water table ranges from 1.5 feet to 3.5 feet below the surface from December through May. Shrink-swell potential is low.

Most areas of this soil are in cropland or are used as pasture and hayland. Some areas are in woodland, and a few small areas are in urban uses. This soil is moderately suited to use as cropland and well suited to use as woodland. It is moderately suited or poorly suited to most urban uses.

This soil is moderately suited to row crops, including tobacco, and well suited to use as pasture and hayland. Erosion is a hazard, and wetness and the clayey subsoil are management concerns. Stripcropping, farming on the contour, including close-growing grasses in crop rotations, and crop residue management help control erosion in areas where row crops are grown. Chisel plowing and subsoiling help increase the rate of water infiltration and decrease the rate of surface runoff. The wetness limitation can be modified by land smoothing and by constructing shallow surface drains that have outlets on grassed waterways.

This soil is well suited to use as woodland. Loblolly pine, slash pine, sweetgum, and yellow-poplar are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, and longleaf uniola. This soil has moderate limitations to the use of equipment and a moderate rate of seedling mortality because of wetness. Planting and harvesting during dry seasons, using specially designed equipment, and planting seedlings on beds help reduce the limitations caused by wetness.

This soil is moderately suited or poorly suited to most urban uses. It has severe limitations to use as septic tank absorption fields because of slow permeability and wetness. These limitations can be reduced by special design or by using an alternative system. These severe limitations are difficult to overcome, and alternate sites should be selected. This soil has moderate limitations to use as sites for dwellings without basements because of wetness. The wetness limitation can be reduced by installing tile drains, by constructing footings, and by shaping the land so that surface water and runoff move away from the dwelling. This soil has moderate

limitations to use for local roads and streets because of low strength and wetness. The limitation of low strength can be reduced by providing suitable subgrade or base material and by special construction that provides adequate support. The wetness limitation can be reduced by constructing roads and streets on raised fill material and installing drainage systems.

The capability subclass of this soil is IIe, and the woodland suitability group is 2w.

GoA—Goldsboro loamy fine sand, 0 to 2 percent slopes. This moderately well drained, nearly level soil is on broad, smooth interstream divides in the northern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 300 acres.

Typically, the surface layer is dark brown loamy fine sand about 7 inches thick. The subsoil is yellowish brown sandy clay loam to a depth of 31 inches, strong brown sandy clay loam that has mottles to a depth of 44 inches, mottled sandy clay loam that has strata of clay loam and sandy loam to a depth of 59 inches, and mottled gray clay that has strata of sandy loam and sandy clay loam to a depth of 72 inches.

Included with this soil in mapping are a few small areas of Duplin, Emporia, Kenansville, Nansemond, Suffolk, and Woodington soils. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate, and the available water capacity is moderate to high. The depth to the seasonal high water table ranges from 2 feet to 3 feet below the surface from December through April. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some areas are in woodland, and a few small areas are in pasture and urban uses. This soil is well suited to use as cropland and woodland and poorly suited or moderately suited to most urban uses.

This soil is well suited to row crops, including tobacco (fig. 5), and to use as pasture. Wetness is a major management concern. The wetness limitation can be modified by land smoothing, constructing shallow surface drains, and by using tile drainage, if suitable outlets are available. Using minimum tillage and planting cover crops improve the soil's tilth and increase its organic matter content.

Restricting the use of this soil as pasture and hayland during wet periods helps to keep the pasture and soil in good condition.

The soil is well suited to use as woodland. Loblolly pine, slash pine, sweetgum, and yellow-poplar are suitable trees to plant. The understory vegetation consists mainly of holly, greenbriar, dogwood, water oak, and panicum. This soil has a moderate limitation to the use of equipment because of the seasonal high water table. Installing drainage and restricting equipment use to the drier months help reduce this limitation.

This soil is poorly suited or moderately suited to urban uses. Wetness is a severe limitation to the use of this soil for septic tank absorption fields. This limitation can be reduced by special design or by using an alternative system. This soil has moderate limitations to use as sites for dwellings without basements and for local roads and streets because of wetness. The limitation of wetness for dwellings without basements can be reduced by installing tile drains, by constructing footings, and by shaping the land so that surface water and runoff move away from the dwelling. The wetness limitation for local roads and streets can be reduced by constructing roads and streets on raised fill material and by installing drainage systems.

The capability subclass of the soil is IIw, and the woodland suitability group to 2w.

Ho—Hobcaw fine sandy loam. This very poorly drained, nearly level soil is in small stream bottoms and slight depressional areas in the southeastern part of the county. Individual areas of this map unit are long and narrow and commonly range from 10 to 100 acres.

Typically, the surface layer is black and very dark grayish brown fine sandy loam and loamy sand about 15 inches thick. The subsoil, to a depth of 48 inches, is predominantly mottled, very dark grayish brown sandy loam. The substratum to a depth of 68 inches is very dark grayish brown and brownish gray loamy sand.

Included with this soil in mapping are small areas of Eulonia, Osier, Wahee, and Yauhannah soils. The included soils make up about 20 percent of this map unit.

This soil is moderate in content of organic matter. Permeability is moderate, and the available water capacity ranges from moderate to high. The seasonal high water table ranges from 1 foot above the surface to 1 foot below the surface from November through April. Shrink-swell potential is low.

Most areas of this soil are in woodland. A few small areas are in pasture. This soil is poorly suited to use as woodland, to cropland, and to urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco, and to use as pasture and hayland because of the seasonal high water table and ponding. Because of the low position on the landscape and the absence of suitable outlets, drainage is commonly not feasible.

This soil is poorly suited to use as woodland. Sweetgum and water tupelo are the most suitable trees to plant. The understory vegetation consists of little bluestem, panicum, lespedeza, and tickclover. This soil has severe limitations to the use of equipment and a high rate of seedling mortality because of the high water table and ponding. Drainage, scheduling planting and

Figure 5.—Goldsboro loamy fine sand, 0 to 2 percent slopes, is well suited to tobacco.

harvesting during dry periods, and planting seedlings on beds help reduce these limitations.

This soil is poorly suited to use as septic tank absorption fields or as sites for dwellings without basements or local roads and streets because of wetness and ponding. These limitations are difficult to reduce, and alternate sites should be selected.

The capability subclass of this soil is VIw, and the woodland suitability group is 4w.

Hy—Hobonny muck. This very poorly drained, nearly level, organic soil is on the flood plains of the Waccamaw River in the southern part of the county. Individual areas of this map unit are irregular in shape and commonly range to hundreds of acres.

Typically, the surface layer is dark reddish brown muck about 30 inches thick. The underlying material to a depth of 80 inches is dark reddish brown muck.

Included with this soil in mapping are small areas of Johnston and Rutlege soils. The included soils make up about 10 percent of this map unit.

This soil is very high in content of organic matter. Permeability is moderate, and the available water capacity is high. The water table ranges from 1 foot above the surface to the level of the surface from January through December unless areas of this soil are protected from flooding. Shrink-swell potential is low.

Most of the acreage of this soil has been left in the natural state; some small areas are managed for wetland wildlife habitat. This soil is well suited to use as wetland wildlife habitat. It is not suited to use as cropland, woodland, or to urban uses because of flooding. Because of the low position on the landscape and the absence of suitable outlets, drainage is commonly not feasible. These limitations are difficult to reduce, and alternate locations should be selected.

Some areas of this soil were used for rice culture prior to the twentieth century.

The capability subclass of this soil is VIIw. It is not placed in a woodland suitability group.

Jo—Johnston loam. This very poorly drained soil is in shallow depressions and on nearly level flood plains along streams and rivers throughout the county. Individual areas of this map unit are irregular in shape and commonly range from 50 to 500 acres.

Typically, the surface layer is black loam about 30 inches thick. The substratum to a depth of 70 inches is mostly grayish brown and dark grayish brown sandy loam and loamy fine sand.

Included with this soil in mapping are a few small areas of Leon, Meggett, Ogeechee, and Yonges soils. The included soils make up about 25 percent of this map unit.

This soil is moderate in content of organic matter. Permeability is moderately rapid in the surface layer and rapid in the substratum. The available water capacity ranges from moderate to high, and the seasonal high water table ranges from 1.0 foot above the surface to 1.5 feet below the surface during the months of November through June. This soil is frequently flooded during this period. Shrink-swell potential is low.

Most areas of this soil are in woodland. A few small areas are in urban uses. This soil is poorly suited to cropland, suited to woodland, and poorly suited to urban uses.

This soil is poorly suited to row crops and to use as pasture and hayland because of wetness and flooding. Because of this soil's low position on the landscape and the absence of suitable outlets, drainage is commonly not feasible.

This soil is suited to use as woodland if water-tolerant trees are planted. Baldcypress are suitable trees to plant. The understory vegetation consists of greenbriar, switchcane, American holly, and blueberry. This soil has severe limitations to the use of equipment and a high rate of seedling mortality because of the high water table and flooding (fig. 6). Restricting the use of equipment to drier months and planting seedlings on beds help reduce the effect of these limitations. Constructing shallow surface drains and embankments helps to lower the water table.

This soil is poorly suited to urban uses because of flooding and ponding. It has severe limitations to use as septic tank absorption fields, as sites for dwellings without basements, and to use for local roads and streets because of wetness and flooding. These limitations are difficult to reduce, and alternate sites should be selected.

The capability subclass of this soil is VIIw, and the woodland suitability group is 4w.

KeB—Kenansville fine sand, 0 to 6 percent slopes. This well drained, nearly level to gently sloping soil is on smooth, broad ridges in the northern part of the county. Individual areas of this map unit are long, broad, and irregular in shape. The areas commonly range from 5 to 200 acres.

Typically, the surface layer is grayish brown fine sand about 8 inches thick. The subsurface layer is very pale brown fine sand to a depth of 28 inches. The subsoil is brownish yellow sandy clay loam to a depth of 44 inches and very pale brown sandy loam to a depth of 51 inches. The substratum to a depth of 70 inches is mottled brown, gray, and yellow loamy sand.

Included with this soil in mapping are a few small areas of Blanton, Goldsboro, Lynchburg, and Suffolk soils and small areas that have short, steep slopes greater than 6 percent. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately rapid, and the available water capacity is moderate. The seasonal high water table ranges from 4 feet to 6 feet below the surface from December to April. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some small areas are in pasture, hayland, woodland, and urban uses. This soil is moderately suited to woodland and cropland. It is well suited to most urban uses.

This soil is moderately suited to use as cropland, including tobacco, and well suited to use as hayland and pasture. Moderate droughtiness and soil blowing are hazards, and the low nutrient holding capacity of the soil is a management concern. Using minimum tillage, planting windbreaks, and leaving crop residue on or near the surface help reduce soil blowing and conserve moisture. Using split applications of fertilizer increases the availability of plant nutrients.

This soil is moderately suited to use as woodland. Loblolly pine are suitable trees to plant. The understory vegetation consists of flowering dogwood, sassafras, turkey oak, blackjack oak, and common persimmon. This soil has moderate limitations to the use of equipment and a moderate rate of seedling mortality because of the thick, sandy surface layer. Using tracks or wider tires on equipment helps improve traction and reduces the likelihood of equipment bogging down. Proper seedbed preparation, planting seedlings in deep furrows, and carefully selecting planting dates help improve the rate of seedling survival.

This soil is well suited to most urban uses. It has moderate limitations to use as septic tank absorption fields because of wetness. The limitation can be reduced by special design or by using an alternative system. This soil is well suited to use as sites for dwellings without basements and for local roads and streets. There are no major limitations to these uses.

The capability subclass of this soil is IIs, and the woodland suitability group is 3s.

Figure 6.—Flooded road and woodland in a swampy area along the Waccamaw River. Johnston loam is frequently flooded.

LaB—Lakeland sand, 0 to 6 percent slopes. This excessively drained, nearly level to gently sloping soil is on broad, smooth ridges and narrow, irregular slopes throughout the county. Individual areas of this map unit are irregular in shape and range from 10 to 400 acres.

Typically, the surface layer is very dark grayish brown sand about 8 inches thick. The substratum is yellowish brown sand to a depth of 50 inches and very pale brown sand to a depth of 82 inches.

Included with this soil in mapping are some small areas of Centenary, Chisolm, and Kenansville soils. The *included soils make up* about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is very rapid, and the available water capacity is very low or low. The depth to the seasonal high water table is more than 6 feet. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some areas are in cropland or pasture or are used for hayland. Small areas are in urban uses. This soil is moderately suited to use as cropland. It is poorly suited to use as woodland and well suited to most urban uses.

This soil is poorly suited to most row crops, including tobacco, but it is suited to soybeans. It is suited to pasture and hayland. Severe droughtiness and wind erosion are hazards, and the low nutrient-holding

capacity of the soil is a major limitation in areas planted to row crops. The hazard of wind erosion can be reduced by planting pasture and hayland crops. Irrigation, minimum tillage, windbreaks, and crop residue left on or near the surface help reduce soil blowing and conserve soil moisture. Split applications of fertilizer increase the availability of plant nutrients.

This soil is poorly suited to use as woodland. Slash pine and longleaf pine are suitable trees to plant. The understory vegetation consists of creeping bluestem, hairy panicum, turkey oak, blackjack oak, and broomsedge bluestem. This soil has moderate limitations to the use of equipment and a moderate rate of seedling mortality because of the sandy nature of the soil. Tracks or wider tires can be used on equipment to improve traction and help reduce the likelihood of equipment bogging down. Proper seedbed preparation, such as planting seedlings in deep furrows, and selecting planting dates carefully help improve the rate of seedling survival.

This soil is well suited to most urban uses. It has slight limitations to use as septic tank absorption fields, as sites for dwellings without basements, and for local roads and streets.

The capability subclass of this soil is IVs, and the woodland suitability group is 4s.

Le—Leon fine sand. This poorly drained, nearly level soil is in broad, nearly level areas and in slightly depressional areas throughout the county. Individual areas of this map unit are irregular in shape and range from 10 to 500 acres.

Typically, the surface layer is black fine sand about 5 inches thick. The subsurface layer, to a depth of 9 inches, is light gray fine sand. The subsoil to a depth of 72 inches is mostly black and dark brown fine sand.

Included with this soil in mapping are small areas of Centenary, Echaw, Lynn Haven, Rutlege, Witherbee, and Yemassee soils. The included soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is rapid in the upper part of the soil and moderate or moderately rapid in the lower part. Available water capacity is low. The seasonal high water table ranges from the level of the surface to a depth of 1 foot below the surface from June through February. Shrink-swell potential is low.

Most areas of this soil are in woodland. A few small areas are in cropland, pasture, hayland, and urban uses. The soil is poorly suited to most cropland, woodland, and urban uses.

This soil is poorly suited to most crops, including tobacco. It is well suited to common bermudagrass and to use as pasture and hayland. Wind erosion is a hazard, and wetness and the low nutrient-holding capacity of the soil are severe management concerns. The limitation of wetness can be modified by installing surface and subsurface drainage systems. All drainage systems require good outlets, and tile drains require filters to keep sand out. These soils have low available water capacity and may be overdrained during dry periods. Using split applications of fertilizer increases the availability of plant nutrients. Minimum tillage, cover crops, and crop residue management help reduce soil blowing.

This soil is poorly suited to use as woodland. Slash pine are suitable trees to plant. The understory vegetation consists of panicum, gallberry, blueberry, and other annual forbs. Limitations to the use of equipment are moderate and the rate of seedling mortality is moderate because of the high water table and the sandy nature of the soil. Drainage, using specially designed equipment, planting and harvesting during dry periods, and planting seedlings on beds help reduce these limitations.

This soil is poorly suited to urban uses. Wetness and the poor filtering capacity of the soil are severe limitations to its use as septic tank absorption fields. Wetness is a severe limitation to the use of this soil as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness is a severe limitation to the use of this soil for local roads and streets. These limitations can be reduced by constructing roads and streets on raised fill material and by installing drainage systems.

The capability subclass of this soil is IVw, and the woodland suitability group is 4w.

Ln—Lynchburg loamy fine sand. This somewhat poorly drained, nearly level soil is in flat areas and shallow depressions in the northern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 200 acres.

Typically, the surface layer is dark gray loamy fine sand about 8 inches thick. The subsoil is mottled brownish yellow sandy clay loam to a depth of 13 inches and mottled gray, yellow, and red sandy clay loam to a depth of 58 inches. To a depth of 80 inches the substratum is light gray stratified sandy clay loam.

Included with this soil in mapping are small areas of Coxville, Nansemond, Norfolk, and Woodington soils. The included soils make up about 25 percent of this map unit.

The soil is low in content of organic matter. Permeability is moderate, and the available water capacity is moderate to high. The depth to the seasonal high water table ranges from 0.5 foot to 1.5 feet below the surface from November through April. Shrink-swell potential is low.

About half of the acreage of this soil is in cropland, and most of the rest is in woodland. Some small areas are in pasture and hayland. A few small areas are in urban uses. This soil is well suited to use as cropland and woodland and poorly suited to most urban uses.

This soil is well suited to row crops and to use as pasture and hayland. It is suited to tobacco. Wetness is a major management concern. The wetness limitation can be modified by land smoothing, constructing open ditches, and tile drainage, or by a combination of these practices. Good outlets are needed for all drainage systems to function properly. Using minimum tillage, planting cover crops, and leaving crop residue on or near the surface improve the soil's tilth and increase the organic matter content. Restricting use of this soil as pasture and hayland during wet periods helps keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Slash pine, loblolly pine, and sweetgum are suitable trees to plant. The understory vegetation consists of common carpetgrass, longleaf uniola, switchcane, large holly, and panicum. Wetness is a moderate limitation to the use of equipment on this soil. This limitation can be reduced by drainage and by planting and harvesting during dry periods.

This soil is poorly suited to most urban uses. Wetness is a severe limitation to the use of this soil as septic tank absorption fields and as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness is a severe limitation to the use of this soil for local roads and streets. This limitation can be reduced by constructing streets and roads on raised fill material and by installing drainage systems.

The capability subclass of this soil is IIw, and the woodland suitability group is 2w.

Ly—Lynn Haven sand. This poorly drained, nearly level soil is in broad, nearly level areas and slightly depressional areas throughout the county. Individual areas of this map unit are irregular in shape and range from 10 to 400 acres.

Typically, the surface layer is black sand about 10 inches thick. The subsurface layer, to a depth of 13 inches, is gray sand. The subsoil to a depth of 75 inches is very dark brown, dark brown, or black sand.

Included with this soil in mapping are small areas of Pocomoke, Rutlege, and Witherbee soils. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate or moderately rapid, and the available water capacity ranges from low to very low. The seasonal high water table ranges from the level of the surface to 1 foot below the surface from June through February. Shrink-swell potential is low.

Most areas of this soil are in woodland. A few small areas are in cropland, pasture, hayland, and urban uses. This soil is moderately suited to use as woodland and poorly suited to use as cropland. It is poorly suited to urban uses.

The soil is poorly suited to row crops and suited to use as pasture and hayland. Wind erosion is a hazard, and wetness and the low nutrient holding capacity of the soil are severe management concerns. The limitation of wetness can be modified by installing surface and subsurface drainage systems. All drainage systems require good outlets in order to function properly, and tile drains need filters to keep sand from filling the lines. These soils have a low available water capacity and may be overdrained during dry seasons. Using split applications of fertilizer helps increase the availability of plant nutrients. Using minimum tillage, planting cover crops, and leaving crop residue on or near the surface help reduce soil blowing. Establishing pasture and hayland crops reduces the hazard of wind erosion.

This soil is moderately suited to use as woodland. Loblolly pine and slash pine are suitable trees to plant. The understory vegetation consists of sweetbay, gallberry, blueberry, panicum, and other annual forbs. The limitation to the use of equipment is moderate, and the rate of seedling mortality is moderate because of the high water table. The effect of this limitation can be reduced by drainage, planting and harvesting during dry seasons, planting seedlings on beds, and using specially designed equipment.

This soil is poorly suited to urban uses. Wetness and the poor filtering capacity of the soil are severe limitations to the use of this soil as septic tank absorption fields. Wetness is a severe limitation to the use of this soil as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness is a severe limitation to the use of this soil for local roads and streets. These limitations can be reduced by constructing roads and streets on raised fill material and by installing drainage systems.

The capability subclass of this soil is IVw, and the woodland suitability group is 3w.

Me—Meggett loam. This poorly drained, nearly level soil is on broad and narrow flood plains that are throughout the county, but mostly in the southern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 20 to 200 acres.

Typically, the surface layer is dark grayish brown loam about 4 inches thick. The subsoil, to a depth of 46 inches, is mostly mottled gray clay loam. The substratum to a depth of 72 inches is mottled gray sand.

Included with this soil in mapping are small areas of Ogeechee, Wahee, and Yonges soils. Also included are small areas of well drained soils. The included soils make up about 15 percent of this map unit.

This soil is low in content of organic matter. The permeability is slow, and the available water capacity ranges from moderate to high. The seasonal high water ranges from the level of the surface to 1 foot below the surface from November through April. Shrink-swell potential is high.

Most areas of this soil are in woodland. Some small areas are in cropland, pasture, hayland, and engineering uses. This soil is well suited to use as woodland. It is poorly suited to use as cropland and to urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco. It is poorly suited to use as pasture and hayland. The hazard of flooding and wetness are severe limitations. Because this soil is low on the landscape and suitable outlets are generally not available, drainage is commonly not feasible.

This soil is well suited to use as woodland. Loblolly pine and slash pine are suitable trees to plant. The understory vegetation consists mainly of cabbage palm, red maple, greenbriar, inkberry, and other shrubs. This soil has severe limitations to the use of equipment and a high rate of seedling mortality because of flooding and wetness. Constructing drains, dikes, diversion ditches, and embankments help reduce these limitations. Restricting equipment use to the drier months and planting seedlings on beds also help to reduce these limitations.

This soil is poorly suited to urban uses. Flooding, slow permeability, and wetness are severe limitations to the use of this soil as septic tank absorption fields. This soil has severe limitations to use as sites for dwellings without basements and for local roads and streets because of flooding, shrink-swell potential, and wetness. These limitations are difficult to reduce, and alternate sites should be selected.

The capability subclass of this soil is VIw, and the woodland suitability group is 1w.

NaB—Nankin fine sandy loam, 2 to 6 percent slopes. This well drained, gently sloping soil is on side slopes in the northern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 30 acres.

Typically, the surface layer is reddish brown fine sandy loam about 4 inches thick. The subsoil, to a depth of 40 inches, is mostly yellowish red clay that has mottles in the lower part. To a depth of 48 inches, the subsoil is mottled strong brown sandy clay loam. The substratum to a depth of 72 inches is mottled red, brown, and gray loamy sand.

Included with this soil in mapping are small areas of Coxville, Duplin, Goldsboro, and Rutlege soils. A few small areas have relic gray mottles in the upper part of the subsoil. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately slow, and the available water capacity ranges from moderate to high. The seasonal high water table is more than 6 feet below the surface. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some of the acreage is in hayland, pasture, and woodland. A few small areas are in urban uses. This soil is moderately suited to use as cropland and woodland. It is well suited to most urban uses.

This soil is moderately suited to row crops and tobacco and to use as hayland and pasture. There are no limitations to the use of this soil for hayland or pasture. Erosion is a hazard if this soil is planted to row crops. Contour tillage, including close-growing grasses in the crop rotation, and water management practices reduce soil loss from water erosion. Using minimum tillage, subsoiling, and leaving crop residue on or near the surface of the soil increase the rate of water infiltration, improve the soil's tilth, and help reduce erosion.

This soil is moderately suited to use as woodland. Loblolly pine and slash pine are suitable trees to plant. The understory vegetation consists of longleaf uniola, pinehill bluestem, beaked panicum, and other shrubs. This soil has no major limitations to use as woodland.

This soil is well suited to most urban uses. It has severe limitations to use as septic tank absorption fields because of slow permeability. This limitation can be reduced by special design or by using an alternative system. This soil has slight limitations to use as sites for dwellings without basements and for local roads and streets.

The capability subclass of this soil is IIe, and the woodland suitability group is 3o.

NeA—Nansemond loamy fine sand, 0 to 2 percent slopes. This moderately well drained soil is on interstream divides and stream terraces adjacent to small natural drainageways. Areas of this soil are mostly in the northern part of the county. Individual areas are irregular in shape and commonly range from 10 to 80 acres.

Typically, the surface layer is very dark grayish brown loamy fine sand about 8 inches thick. The subsurface layer, to a depth of 12 inches, is light yellowish brown loamy fine sand. The subsoil is yellowish brown and brownish yellow fine sandy loam to a depth of 32 inches and mottled yellowish brown loamy fine sand to a depth of 54 inches. The substratum to a depth of 72 inches is mottled light gray and yellow loamy fine sand.

Included with this soil are small areas of Centenary, Echaw, Lynchburg, Rutlege, Suffolk, and Woodington soils. The included soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately rapid in the surface layer, subsurface layer, and subsoil and rapid in the underlying material. The available water capacity ranges from low to moderate. The depth to the seasonal high water table ranges from 1.5 feet to 2.5 feet below the surface from December through April. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some areas are in woodland, pasture, or hayland. Small areas are in urban uses. This soil is well suited to use as cropland

and woodland, and it is moderately suited or poorly suited to most urban uses.

This soil is well suited to row crops and tobacco and to use as pasture and hayland. Moderate wetness and the low nutrient-holding capacity of the soil are the main management concerns. The wetness limitation can be modified by land smoothing, constructing shallow surface drains, and installing tile drainage, or by using a combination of the two systems if suitable outlets are available. Where tile is installed, filters are needed to prevent sand from entering the tile system. Crop residue management practices, such as minimum tillage and planting cover crops, improve the nutrient holding capacity of the soil. Split applications of fertilizer increase the availability of plant nutrients. Restricting use of this soil as pasture and hayland during wet periods helps keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine, slash pine, yellow-poplar, and black walnut are suitable trees to plant. The understory vegetation consists of American holly, flowering dogwood, low blueberry, and waxmyrtle. This soil has a moderate limitation to the use of equipment and a moderate rate of seedling mortality because of wetness. The wetness limitation can be modified by installing drainage ditches and restricting equipment use to dry periods.

This soil is moderately suited or poorly suited to urban uses. Wetness is a severe limitation to the use of this soil as septic tank absorption fields, but this limitation can be reduced by special design or by using another kind of system. Wetness is a moderate limitation to the use of this soil as sites for dwellings without basements and for local roads and streets. The limitation of wetness for dwellings without basements can be reduced by installing tile drains and footings and by shaping the land so that surface water and runoff move away from the dwelling. The wetness limitation for local roads and streets can be reduced by constructing roads and streets on raised fill material and installing drainage systems.

The capability subclass of this soil is IIw, and the woodland suitability group is 2s.

NhB—Newhan fine sand, 0 to 6 percent slopes. This excessively drained, nearly level to gently sloping soil is on dunes adjacent to the beaches in the southeastern part of the county. Individual areas of this map unit are irregular in shape. This map unit is predominantly one area that is about 33 miles long and that ranges from about 300 feet to 1,500 feet wide.

Typically, the surface layer is light brownish gray fine sand about 7 inches thick. The underlying material to a depth of 80 inches is pale yellow to white fine sand.

Included with this soil in mapping are small areas of Bohicket, Centenary, and Lakeland soils and small areas of Beaches. These soils make up about 20 percent of this map unit.

This soil is very low in content of organic matter. Permeability is very rapid, and the available water capacity is very low. The depth to water table is more than 6 feet. Shrink-swell potential is low.

Most areas of this soil are in recreation development and urban uses. Some small areas are in woody shrubs. This soil is poorly suited to use as cropland and is not suited to woodland. It is well suited to most urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco, and also to use as pasture and hayland. The main limitations are the excessively sandy and droughty nature of this soil and its location along the beach.

This soil is not suited to use as woodland because of its sandy, droughty nature and its location along the beach. The understory vegetation consists of bushy bluestem, yaupon, live oak, and sea oats.

This soil is well suited to most urban uses. It has severe limitations to use as septic tank absorption fields because of the poor filtering capacity of the soil, which may cause pollution of the ground water. This limitation is difficult to overcome, and alternate sites should be selected. This soil has slight limitations to use as sites for dwellings without basements and for local roads and streets.

The capability subclass of this soil is VIIIs. It is not placed in a woodland suitability group.

NoA—Norfolk loamy fine sand, 0 to 2 percent slopes. This well drained, nearly level soil is on broad, smooth ridges in the northern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 200 acres.

Typically, the surface layer is brown loamy fine sand about 13 inches thick. The subsurface layer, to a depth of 16 inches, is light yellowish brown loamy sand. The subsoil, to a depth of 56 inches, is yellowish brown sandy clay loam that is mottled in the lower part. To a depth of 75 inches it is mostly mottled red, brown, and gray clay loam that contains strata of coarser material.

Included with this soil in mapping are a few small areas of Coxville, Duplin, Goldsboro, Lynchburg, Nankin, and Summerton soils and small areas that have 2 to 6 percent slopes. These soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate in the upper part of the subsoil and slow in the lower part of the subsoil. The available water capacity ranges from moderate to high. The depth to the seasonal high water table ranges from 3 to 6 feet from January through March. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some small areas are in pasture, hayland, woodland, and urban uses. This soil is well suited to use as cropland and woodland and suited to most urban uses.

This soil is well suited to row crops, including tobacco, and to use as pasture and hayland. There are no major management concerns, but such practices as minimum tillage, subsoiling, and leaving crop residue on or near the surface improve water infiltration, soil tilth, and crop yields.

This soil is well suited to use as woodland. Loblolly pine and slash pine are suitable trees to plant. The understory vegetation consists of American holly, flowering dogwood, and other shrubs. There are no major limitations to woodland use or management.

This soil is suited to most urban uses. It has severe limitations for septic tank absorption fields because of the slowly permeable subsoil. The limitation can be reduced by special design or by using an alternative system. This soil has slight limitations to use as sites for dwellings without basements and for local roads and streets.

The capability class of this soil is I, and the woodland suitability group is 2o.

Og—Ogeechee loamy fine sand. This poorly drained, nearly level soil is in broad, flat areas and slightly depressional areas in the southern part of the county. Individual areas of this map unit are irregular in shape and range from 10 to 300 acres.

Typically, the surface layer is black loamy fine sand about 5 inches thick. The subsurface layer, to a depth of 10 inches, is mottled grayish brown loamy fine sand. The subsoil, to a depth of 60 inches, is mostly mottled gray sandy clay loam that has sandy loam in the lower part. The substratum to a depth of 72 inches is mottled light gray loamy sand.

Included with this soil in mapping are small areas of Bladen, Yauhannah, and Yonges soils and small areas that have a sandy surface layer more than 20 inches thick. The included soils make up about 25 percent of the map unit.

This soil is low in content of organic matter. Permeability is moderately slow, and the available water capacity is moderate. The seasonal high water table ranges from the level of the surface to a depth of 6 inches below the surface from December through May. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some small areas are used as cropland or pasture or are in urban uses. The soil is well suited to use as woodland and pasture. It is moderately suited to use as cropland and poorly suited to urban uses.

This soil is well suited to soybeans, suited to corn, and poorly suited to tobacco. It is well suited to bahiagrass pasture. The seasonal high water table is a major management concern. Installing surface and subsurface drains or a combination of both systems can help reduce the limitation of wetness. Good outlets are needed for drains to function effectively. Other practices that help reduce wetness are land smoothing, constructing deep ditches, and installing dikes. Planting crops on high seedbeds helps protect against crop damage caused by wetness. Restricting use of this soil for pasture and hayland during wet periods helps to keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine, slash pine, and sweetgum are suitable trees to plant. The understory vegetation consists of panicum, greenbriar, maidencane, switchgrass, little bluestem, and gallberry. This soil has severe limitations to the use of equipment and a moderate rate of seedling mortality. Drainage, special equipment design, restricting equipment use to the drier months, and planting seedlings on beds help reduce these limitations.

This soil is poorly suited to urban uses. Wetness is a severe limitation to the use of this soil for septic tank absorption fields, as sites for dwellings without basements, and for local roads and streets. These limitations are difficult to reduce, and alternate sites should be selected.

The capability subclass of this soil is IIIw, and the woodland suitability group is 2w.

Os—Osier loamy sand. This poorly drained, nearly level soil is on flood plains, in depressional areas, and on stream terraces throughout the county. Individual areas of the map unit are long and narrow or are irregular in shape and range from 10 to 75 acres.

Typically, the surface layer is very dark gray loamy sand about 8 inches thick. The underlying material to a depth of 65 inches is grayish or brownish loamy sand or sand.

Included with this soil are small areas of Nansemond, Pocomoke, Rutlege, and Woodington soils. The included soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is rapid, and the available water capacity is low. The seasonal high water table ranges from the level of the surface to 1 foot below the surface during November through March. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some small areas are in cropland, hayland, and pasture. A few small areas are in urban uses. This soil is moderately suited to use as woodland and poorly suited to use as cropland. It is poorly suited to urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco. It is poorly suited to use as pasture and hayland because of the seasonal high water table and the hazard of flooding. Because of this soil's low position on the landscape and the absence of suitable outlets, drainage is commonly not feasible.

This soil is moderately suited to use as woodland. Slash pine and loblolly pine are suitable trees to plant. The understory vegetation consists of holly, panicum, switchgrass, gallberry, and waxmyrtle. Flooding is a hazard on this soil. The high water table is a severe limitation to the use of equipment, and the rate of

seedling mortality is high. These limitations can be reduced by drainage, planting and harvesting during dry periods, and using specially designed equipment. Planting seedlings in beds improves the survival rate of seedlings.

This soil is poorly suited to urban uses. Flooding is a severe limitation to the use of this soil as septic tank absorption fields, as sites for dwellings without basements, and for local roads and streets. These limitations are difficult to reduce, and alternate sites should be selected.

The capability subclass of this soil is Vw, and the woodland suitability group is 3w.

Po—Pocomoke fine sandy loam. This very poorly drained, nearly level soil is in small drainageways, shallow depressions, and on flats throughout the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 50 acres.

Typically, the surface layer is black fine sandy loam about 11 inches thick. The subsurface layer, to a depth of 16 inches, is mottled gray and dark grayish brown loamy sand. The subsoil, to a depth of 36 inches, is very dark grayish brown sandy loam. The underlying material is grayish brown loamy sand to a depth of 54 inches and light brownish gray sandy clay loam to a depth of 72 inches.

Included with this soil in mapping are small areas of Johnston, Lynchburg, Lynn Haven, Osier, and Rutlege soils. The included soils make up about 25 percent of this map unit.

This soil is moderate in content of organic matter. Permeability is moderate or moderately rapid, and the available water capacity ranges from low to moderate. The seasonal high water table ranges from the level of the surface to 6 inches below the surface from December through May. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some small areas are in cropland, pasture, hayland, and urban uses. This soil is well suited to use as woodland. It is poorly suited to use as cropland and to urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco, and to use as pasture and hayland, because of the seasonal high water table and ponding. Because of the low position on the landscape and the absence of suitable outlets, drainage is commonly not feasible.

This soil is well suited to use as woodland. Loblolly pine and sweetgum are suitable trees to plant. The understory vegetation consists of greenbriar, holly, and switchcane. This soil has severe limitations to the use of equipment and a high rate of seedling mortality because of wetness and ponding. Practices that help reduce these limitations are drainage, planting and harvesting during dry periods, and using specially designed equipment. Seedlings can be planted on beds to improve their likelihood of survival.

This soil is poorly suited to use as septic tank absorption fields, sites for dwellings without basements, and for local roads and streets because of wetness and ponding. These limitations are difficult to reduce, and alternate sites should be selected.

The capability of subclass of this soil is Vlw, and the woodland suitability group is 2w.

RmB—Rimini sand, 0 to 6 percent slopes. This excessively drained, nearly level to gently sloping soil is on rims around Carolina bays throughout the county and on narrow, smooth divides along the Little Pee Dee River. Individual areas of this map unit are irregular in shape and range from 10 to 200 acres.

Typically, the surface layer is dark gray sand about 4 inches thick. The subsurface layer, to a depth of 65 inches, is white and light gray sand. The subsoil to a depth of 72 inches is dark reddish brown sand.

Included with this soil in mapping are small areas of Echaw, Lakeland, Leon, Lynn Haven, and Rutlege soils. The included soils make up about 15 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate, and the available water capacity is very low. The depth to seasonal high water table is more than 6 feet. Shrink-swell potential is low.

Most areas of this soil are in woodland. A few small areas are in urban uses, such as recreational homes. This soil is poorly suited to use as cropland and woodland. It is well suited to most urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco, and also to pasture, hayland, and woodland. This soil is limited for these uses because it is excessively drained, droughty, and has a low nutrient-holding capacity.

This soil is poorly suited to use as woodland. Slash pine and longleaf pine are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, blackjack oak, and pineland threeawn. This soil has moderate limitations on the use of equipment and a moderate rate of seedling mortality because of the sandiness of the soil. Tracks or wide tires can be used on equipment to improve traction and keep equipment from bogging down. The rate of seedling survival can be improved by proper seedbed preparation, such as planting in deep furrows, and by selecting planting dates carefully.

This soil is well suited to most urban uses. It has severe limitations to use as septic tank absorption fields because of the poor filtering capacity of the soil. This limitation is difficult to reduce, and alternate sites should be selected. This soil has slight limitations to use as sites for dwellings without basements and for local roads and streets.

The capability subclass of this soil is VIs, and the woodland suitability class is 5s.

Ru—Rutlege loamy sand. This very poorly drained, nearly level soil is in small drainageways, in shallow oval depressions, and along the flood plains throughout the county. Individual areas of this map unit are irregular in shape and range from 10 to 100 acres.

Typically, the surface layer is black loamy sand about 12 inches thick. The substratum to a depth of 72 inches is mostly gray or dark grayish brown sand.

Included with this soil in mapping are a few small areas of Lynchburg, Lynn Haven, Pocomoke, Woodington, and Yemassee soils. The included soils make up about 20 percent of this map unit.

This soil is moderate in content of organic matter. Permeability is rapid, and the available water capacity is low. The seasonal high water table ranges from 2 feet above the surface to 1 foot below the surface from December through May. Shrink-swell potential is low.

Most areas of this soil are in woodland. A few small areas are in cropland, pasture, hayland, and urban uses. This soil is poorly suited to use as woodland, cropland, and to urban uses.

This soil is poorly suited to row crops, such as corn, soybeans, and tobacco, and also to use as pasture and hayland because of the seasonal high water table and ponding. Because of the low position on the landscape and the absence of suitable outlets, drainage is commonly not feasible.

This soil is poorly suited to woodland. Baldcypress are suitable trees to plant. The understory vegetation consists of greenbriar, holly, and blueberry. This soil has severe limitations to the use of equipment and a high rate of seedling mortality because of wetness and ponding. These limitations can be reduced by planting and harvesting during dry periods, using specially designed equipment, and drainage. Seedlings can be planted on beds to improve their likelihood of survival.

This soil is poorly suited to use as septic tank absorption fields, sites for dwellings without basements, and for local roads and streets because of wetness and ponding. These limitations are difficult to reduce, and alternate sites should be selected.

The capability subclass of this soil is VIw, and the woodland suitability group is 4w.

SfA—Suffolk loamy fine sand, 0 to 2 percent slopes. This well drained, nearly level soil is on uplands of the Coastal Plains in the northern part of the county. Individual areas of the map unit are irregular in shape and commonly range from 10 to 100 acres.

Typically, the surface layer is grayish brown loamy fine sand about 8 inches thick. The subsurface layer, to a depth of 14 inches, is light yellowish brown loamy fine sand. The subsoil, to a depth of 56 inches, is yellowish brown or brownish yellow sandy clay loam that has mottles and thin strata of coarser material in the lower part. The underlying material to a depth of 72 inches is mottled brownish yellow sandy loam.

Included with this soil in mapping are small areas of Blanton, Emporia, Kenansville, Lynchburg, and Nansemond soils. Also included are small areas that have slopes of 2 to 6 percent. The included soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate, and the available water capacity ranges from moderate to high. Depth to the seasonal high water table is more than 6 feet. Shrink-swell potential is low.

Most areas of this soil are in cropland. A small acreage is in woodland, pasture, hayland, and urban uses. This soil is well suited to use as cropland, and it is suited to use as woodland. It is well suited to most urban uses.

This soil is well suited to row crops and to use as pasture or hayland. There are no major management hazards. Using minimum tillage, planting cover crops, and leaving crop residue on or near the surface help improve the soil's tilth, increase the rate of water infiltration, and increase the organic matter content of the soil.

This soil is suited to use as woodland. Loblolly pine are suitable trees to plant. The understory vegetation consists of flowering dogwood, American holly, blueberry, greenbriar, and sourwood. This soil has a moderate limitation to seedling survival because of the sandy surface layer. This limitation can be reduced by selecting planting dates carefully.

This soil is well suited to most urban uses. Limitations are slight to the use of this soil as septic tank absorption fields and as sites for dwellings without basements and local roads and streets.

The capability class of this soil is I, and the woodland suitability group is 3s.

SfB—Suffolk loamy fine sand, 2 to 6 percent slopes. This well drained, gently sloping soil is on ridges and side slopes on the uplands of the Coastal Plains in the northern part of the county. Individual areas are long and narrow or irregular in shape and commonly range from 10 to 30 acres.

Typically, the surface layer is grayish brown loamy fine sand about 8 inches thick. The subsurface layer, which extends to a depth of 14 inches, is light yellowish brown loamy fine sand. The subsoil, to a depth of 56 inches, is yellowish brown or brownish yellow sandy clay loam that has mottles and thin strata of coarser material in the lower part. The underlying material to a depth of 72 inches is mottled brownish yellow sandy loam.

Included with this soil in mapping are a few small areas of Blanton, Kenansville, Lynchburg, Coxville, Rutlege, and Woodington soils. Also included are some small areas that have a sandy loam surface layer because of erosion. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate, and the available water capacity is moderate to high. Depth to the seasonal high water table is more than 6 feet. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some small areas are in hayland, pasture, woodland, and urban uses. This soil is well suited to use as cropland and suited to use as woodland. It is well suited to most engineering uses.

This soil is well suited to some row crops and to use as pasture and hayland. It is suited to soybeans and tobacco. This soil has no special limitations or hazards if planted to pasture or hayland. Erosion is a hazard if this soil is planted to row crops. Contour tillage, including close-growing crops in crop rotations, and water management practices help reduce soil loss from water erosion. Using minimum tillage, planting cover crops, and leaving crop residue on or near the surface of the soil help increase the rate of water infiltration, improve the soil's tilth, and increase the organic matter content of the soil.

This soil is suited to use as woodland. Loblolly pine are suitable trees to plant. The understory vegetation consists of flowering dogwood, American holly, blueberry, greenbriar, and sourwood. This soil has a moderate limitation to seedling survival. This limitation can be reduced by timely planting.

This soil is well suited to most urban uses. Limitations are slight to the use of this soil as septic tank absorption fields, as sites for dwellings without basements, and for local roads and streets.

The capability subclass of this soil is IIe, and the woodland suitability group is 3s.

SmA—Summerton fine sandy loam, 0 to 2 percent slopes. This well drained, nearly level soil is on the higher landscapes in the northern part of the county. Individual areas of this map unit are irregular in shape and commonly range from 10 to 50 acres.

Typically, the surface layer is yellowish brown fine sandy loam about 6 inches thick. The subsoil, to a depth of 37 inches, is mostly strong brown clay. To a depth of 61 inches the subsoil is mottled brownish yellow clay.

Included with this soil in mapping are small areas of Coxville, Duplin, Goldsboro, and Lynchburg soils. These soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderately slow, and the available water capacity ranges from moderate to high. The seasonal high water table is more than 6 feet below the surface. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some of the acreage is in hayland, pasture, and woodland. A few small areas are in urban uses. This soil is moderately suited to use as cropland, woodland, and to most urban uses.

This soil is moderately suited to row crops, including tobacco and well suited to hayland and pasture. This soil has no special hazards or management concerns. Such practices as minimum tillage, planting cover crops, subsoiling, and crop residue management increase the rate of water infiltration, improve the soil's tilth, and reduce runoff.

This soil is moderately suited to use as woodland. Loblolly pine and slash pine are suitable trees to plant. The understory vegetation consists of longleaf uniola, pinehill bluestem, beaked panicum, and other shrubs. There are no major management concerns.

This soil is moderately suited to most urban uses. Slow permeability is a severe limitation to the use of this soil as septic tank absorption fields, but this limitation can be reduced by special design or by using another kind of system. This soil has slight limitations to use as sites for dwellings without basements. Low strength is a severe limitation to use of this soil for local roads and streets, but this limitation can be reduced by providing suitable subgrade or base material and by constructing roads and streets so that they are adequately supported.

The capability class of this soil is I, and the woodland suitability group is 3o.

Ud—Udorthents and Udipsamments, well drained. Most of the acreage of this map unit consists of areas that have been formed by the spoil from the excavation of the Intracoastal Waterway. Other areas have been cut or filled during grading for roads, housing developments, recreation areas, and similar projects. Most areas of this map unit are in the southeastern part of the county along the Intracoastal Waterway. These areas range from 50 to 1,000 acres. Other areas throughout the county range from about 1 acre to 40 acres. Slopes range from nearly level to sloping.

The mineral materials that make up this map unit are generally characteristic of the soil and underlying material in the adjacent areas. Some of the adjacent soils are the Bladen, Centenary, Echaw, Lakeland, Leon, Lynn Haven, Meggett, Witherbee, and Yonges soils.

Included with this map unit are some small areas that are moderately well drained and that have not been appreciably altered by fill material. Other small areas are made up entirely of miscellaneous fill material. Also included are excavated areas, 4 to 40 acres, from which the surface layer, the subsoil, and much of the substratum have been removed. The included areas make up about 10 percent of this map unit.

This map unit is very low in content of organic matter. Reaction in these soils is variable. Permeability ranges from moderate to rapid, and the surface runoff ranges to rapid. The internal drainage is variable. The available water capacity is low, and the hazard of erosion is slight to moderate.

Individual areas of this map unit vary widely in suitability for different uses. Generally, areas of this map

unit are suited to use as building sites. Possible limitations are caving, seepage, droughtiness, and sandy texture. Characteristics of this map unit are so variable that onsite investigation is needed to determine the suitability of each area for any proposed use.

The capability subclass of these soils is VIIs. They are not placed in a woodland suitability group.

Wa—Wahee fine sandy loam. This somewhat poorly drained, nearly level soil is in broad, nearly level areas and in shallow depressions in the southeastern part of the county. Individual areas of this map unit are irregular in shape and range from 10 to 500 acres.

Typically, the surface layer is dark gray fine sandy loam about 7 inches thick. The subsurface layer, to a depth of 11 inches, is mottled pale brown loam. The subsoil is mottled brown clay loam to a depth of 15 inches and mostly mottled gray clay loam and sandy clay to a depth of 56 inches. The underlying material to a depth of 65 inches is mottled gray and brownish yellow sandy clay loam.

Included with this soil in mapping are a few small areas of Bladen, Meggett, Ogeechee, and Yemassee soils. The included soils make up about 30 percent of this map unit.

This soil is low in content of organic matter. Permeability is slow, and the available water capacity ranges from moderate to high. The seasonal high water table is 0.5 foot to 1.5 feet below the surface from December through March. Shrink-swell potential is moderate.

Most areas of this soil are in woodland. A few small areas are in row crops, in pasture, and in urban uses. This soil is well suited to use as woodland, moderately suited to use as cropland, and poorly suited to most urban uses.

This soil is moderately suited to row crops, such as corn and soybeans. It is poorly suited to tobacco. It is well suited to tall fescue or bahiagrass pasture. The seasonal high water table and clayey subsoil are major management concerns. The limitation of wetness can be modified by land smoothing, digging deep ditches, and installing shallow surface drains if suitable outlets are available. Crops can be planted on high beds to help prevent damage from wetness. Chisel plowing and subsoiling help increase the rate of water infiltration into the soil. Crop residue management practices, such as minimum tillage and planting cover crops, help improve the soil's tilth and workability. Restricting use of this soil as pasture and hayland during wet periods helps keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine, slash pine, and sweetgum are suitable trees to plant. The understory vegetation consists mainly of large gallberry, panicum, greenbriar, switchcane, and other grasses and shrubs. This soil has a moderate limitation to the use of equipment and a moderate rate of seedling mortality because of the high water table. This limitation can be reduced by drainage, restricting equipment use to the drier months, and planting seedlings on beds.

This soil is poorly suited to most urban uses. Wetness and the slow permeability of the soil are severe limitations to the use of this soil as septic tank absorption fields and as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness and low strength are severe limitations to the use of this soil for local roads and streets. The wetness limitation can be reduced by constructing roads and streets on raised fill material and installing drainage systems. The limitation of low strength can be reduced by providing a suitable subgrade or base material or by constructing roads and streets so that they are adequately supported.

The capability subclass of this soil is IIw, and the woodland suitability group is 2w.

We—Witherbee sand. This somewhat poorly drained, nearly level soil is on interstream divides and flats throughout the county. Individual areas of this map unit are irregular in shape and range from 5 to 80 acres.

Typically, the surface layer is very dark gray sand about 5 inches thick. The subsurface layer, to a depth of 22 inches, is yellowish brown sand. The subsoil to a depth of 80 inches is dark reddish brown and very dark brown sand.

Included with this soil in mapping are small areas of Centenary, Leon, Lynn Haven, Rimini, and Rutlege soils. The included soils make up about 20 percent of this map unit.

This soil is low in content of organic matter. Permeability is rapid, and the available water capacity is low. Depth to the seasonal high water table ranges from 1 foot to 2 feet below the surface from November through April. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some areas are used as cropland and pasture, and a few small areas are in urban uses. This soil is well suited to use as woodland and moderately suited to use as cropland. It is poorly suited to most urban uses.

This soil is moderately suited to use as cropland, including tobacco, and is well suited to use as pasture and hayland. Wetness and the low nutrient- holding capacity of the soil are major management concerns. The wetness limitation can be modified by drainage and land smoothing. Both surface and subsurface drainage systems require good outlets, and filters are needed for tile drains to function properly. The low nutrient-holding capacity can be modified by leaving crop residue on or near the surface, using minimum tillage, planting cover crops, and using split applications of fertilizer. Restricting use of this soil for pasture and hayland during wet periods helps keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine, longleaf pine, slash pine, and shortleaf pine are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, switchgrass, and large holly. This soil has moderate limitations to the use of equipment because of wetness. Planting and harvesting during dry periods and using specially designed equipment help reduce the effects of excess wetness.

The soil is poorly suited to most urban uses. Wetness and the poor filtering capacity of the soil are severe limitations to the use of this soil as septic tank absorption fields, and wetness is a severe limitation to its use as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness is a moderate limitation to the use of this soil for local roads and streets. This limitation can be reduced by constructing roads and streets on raised fill material and installing drainage systems.

The capability subclass of this soil is IIIw, and the woodland suitability group is 2w.

Wo—Woodington fine sandy loam. This poorly drained, nearly level soil is on stream terraces and upland flats in the northern part of the county. Individual areas of this map unit are irregular in shape and range from 5 to more than 60 acres.

Typically, the surface layer is very dark gray fine sandy loam about 7 inches thick. The subsurface layer is light gray fine sandy loam to a depth of 14 inches, mottled light gray sandy loam to a depth of 31 inches, and mottled light gray stratified sandy clay loam to a depth of 58 inches. The substratum to a depth of 84 inches is mottled gray stratified sandy clay loam.

Included with this soil in mapping are a few small areas of Coxville, Goldsboro, Pocomoke, and Osier soils. These soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. The permeability is moderately rapid, and the available water capacity is moderate. The depth to the seasonal high water table ranges from 0.5 foot to 1 foot below the surface from December through May. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some small areas are in cropland, pasture, and urban uses. This soil is moderately suited to use as woodland and cropland and poorly suited to urban uses.

This soil is moderately suited to most row crops, but it is poorly suited to tobacco. It is well suited to tall fescue pasture (fig. 7). Wetness is a severe limitation. The wetness limitation can be modified by the use of surface and tile drainage, if suitable outlets are available, and by land smoothing. Sand filters are needed for tile drains to function properly. Planting crops on high seedbeds helps reduce crop damage caused by wetness. Restricting use during wet seasons helps keep the pasture and soil in good condition.

This soil is moderately suited to use as woodland. Loblolly pine, slash pine, and sweetgum are suitable trees to plant. The understory vegetation consists of maidencane, bay bush, and gallberry. This soil has severe limitations to the use of equipment and a high rate of seedling mortality because of wetness. Drainage, restricting equipment use to the drier months, and planting seedlings on beds help reduce these limitations.

This soil is poorly suited to urban uses. Wetness is a severe limitation to use of this soil as septic tank absorption fields and as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness is a severe limitation to use of this soil for local roads and streets. This limitation can be reduced by constructing roads and streets on raised fill material and by installing drainage systems.

The capability subclass of this soil is IIIw, and the woodland suitability group is 3w.

YaA—Yauhannah fine sandy loam, 0 to 2 percent slopes. This moderately well drained, nearly level soil is on broad, smooth interstream divides in the southeastern part of the county. Individual areas of this map unit are irregular in shape and range from 10 to 200 acres.

Typically, the surface layer is brown fine sandy loam about 8 inches thick. The subsoil, to a depth of 40 inches, is mostly yellowish brown sandy clay loam that has mottles in shades of gray, brown, and red. To a depth of 48 inches, the subsoil is mottled sandy loam. The substratum to a depth of 72 inches is mottled brownish yellow and light gray sand.

Included with this soil in mapping are some small areas of Bladen, Chisolm, Hobcaw, and Ogeechee soils. The included soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate, and the available water capacity is moderate. The depth to the seasonal high water table ranges from 1.5 feet to 2.5 feet below the surface from December through March. Shrink-swell potential is low.

Most areas of this soil are in cropland. Some areas are used as woodland, pasture, and hayland. Small areas are in urban uses. This soil is well suited to use as cropland and woodland, and it is poorly suited to most urban uses.

This soil is well suited to use as cropland, including tobacco, pasture, and hayland. Wetness is a major management concern. The limitation of wetness can be modified by land smoothing, shallow surface ditches, and installing tile drainage systems. All drainage systems need good outlets in order to function properly. Leaving crop residue on or near the surface, using minimum tillage, and planting cover crops help improve the tilth and increase the organic matter content of the soil. Restricting use of this soil as pasture and hayland during

Figure 7.—Woodington fine sandy loam, where adequately drained, is well suited to fescue pasture.

wet periods helps keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine, slash pine, yellow-poplar, and American sycamore are suitable trees to plant. The understory vegetation consists of little bluestem, switchcane, tickclover, panicum, and slender bluestem. This soil has moderate limitations to the use of equipment because of wetness. Drainage, planting and harvesting during dry periods, and using specially designed equipment help reduce the limitations caused by wetness.

This soil is poorly suited to most urban uses. This soil is severely limited to use as septic tank absorption fields because of wetness. This limitation can be reduced by special design or by using an alternative system. This soil has moderate limitations to use as sites for dwellings without basements and for local roads and streets because of wetness. The wetness limitation to use of this soil as sites for dwellings without basements can be reduced by installing tile drains near footings and by shaping the land so that surface and runoff water move away from the dwelling. The wetness limitation to use of this soil for local roads and streets can be reduced by constructing roads and streets on raised fill material and by installing drainage systems.

The capability subclass of this soil is IIw, and the woodland suitability group is 2w.

Ye—Yemassee loamy fine sand. This somewhat poorly drained, nearly level soil is in broad, nearly level areas and in shallow depressions in the southeastern part of the county. Individual areas of this map unit are irregular in shape and range from 10 to 200 acres.

Typically, the surface layer is black loamy fine sand about 7 inches thick. The subsurface layer, to a depth of 14 inches, is mottled light yellowish brown loamy fine sand. The subsoil, to a depth of 56 inches, is mostly mottled gray sandy clay loam. The substratum to a depth of 72 inches is mottled light brownish gray loamy sand.

Included with this soil in mapping are some small areas of Bladen, Ogeechee, Wahee, and Witherbee soils. These included soils make up about 25 percent of this map unit.

This soil is low in content of organic matter. Permeability is moderate, and the available water capacity is moderate. The depth to the seasonal high water table ranges from 1 foot to 1.5 feet from December through March. Shrink-swell potential is low.

Most areas of this soil are in woodland. Some areas are in cropland, pasture, and hayland. A few small areas are in urban uses. This soil is well suited to use as cropland and woodland. It is poorly suited to most urban uses.

This soil is well suited to most row crops, but it is only suited to tobacco. This soil is well suited to use as pasture and hayland. Wetness is a major management concern. The wetness limitation can be modified by land

smoothing, use of open ditches. and installing tile drainage, or a combination of all of these practices. Good outlets are needed for all drainage systems to function properly. Crops can be planted on high beds to help reduce crop damage caused by wetness. Using minimum tillage, planting cover crops, and leaving crop residue on or near the surface help improve the soil's tilth and increase the organic matter content of the soil. Restricting the use of this soil as pasture and hayland during wet periods help keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Slash pine, loblolly pine, and yellow-poplar are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, switchcane, tickclover, and other shrubs. This soil has a moderate limitation to the use of equipment because of wetness. This limitation can be reduced by planting and harvesting during dry periods.

This soil is poorly suited to most urban uses. Wetness is a severe limitation to the use of this soil as septic tank absorption fields and as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness is a moderate limitation to the use of this soil for local roads and streets. The wetness limitation can be reduced by constructing roads and streets on raised fill material and by installing drainage systems.

The capability subclass of this soil is IIw, and the woodland suitability group is 2w.

Yo—Yonges fine sandy loam. This poorly drained, nearly level soil is in low, flat areas near small streams and swamps. Areas of this map unit are throughout the county, but most are in the southeastern part of the county. Individual areas are irregular in shape and commonly range from 10 to 300 acres.

Typically, the surface layer is very dark grayish brown and dark grayish brown fine sandy loam about 16 inches thick. The subsoil, to a depth of 52 inches, is mostly mottled gray and brown sandy loam. The substratum to a depth of 68 inches is olive gray sandy loam.

Included with this soil in mapping are some small areas of Bladen, Brookman, Leon, Meggett, Ogeechee, and Wahee soils. The included soils make up about 25 percent of the map unit.

This soil is low in content of organic matter. Permeability is moderately slow, and the available water capacity is moderate. The seasonal high water table ranges from the level of the surface to 1 foot below the surface from November through April. Shrink-swell potential is low.

Most areas of this soil are in woodland. A few small areas are in cropland, pasture, hayland, and urban uses. This soil is moderately suited to use as cropland and well suited to use as woodland. It is poorly suited to most urban uses.

This soil is moderately suited to such crops as corn and soybeans and to use as hayland. This soil is poorly suited to tobacco and well suited to use as pasture. Wetness is a major management concern, but this limitation can be modified by the use of land smoothing, open ditches, and tile drainage or a combination of these practices. Good outlets are needed for all drainage systems to function properly. Using minimum tillage and leaving crop residue on or near the surface help reduce clodding of the surface layer, improve the soil's tilth, and increase the organic matter content of the soil. Restricting use of this soil for pasture and hayland during wet periods helps keep the pasture and soil in good condition.

This soil is well suited to use as woodland. Loblolly pine, slash pine, sweetgum, and water tupelo are suitable trees to plant. The understory vegetation consists of little bluestem, panicum, cabbage palm, and tickclover. Wetness in this soil is a severe limitation to the use of equipment and causes a high rate of seedling mortality. Drainage, planting and harvesting during dry seasons, and using specially designed equipment help to reduce this limitation. Planting seedlings on beds improves the rate of seedling survival.

This soil is poorly suited to urban uses. Wetness and the slow permeability of the soil are severe limitations to use of this soil as septic tank absorption fields. Wetness is also a severe limitation to the use of this soil as sites for dwellings without basements. These limitations are difficult to reduce, and alternate sites should be selected. Wetness is a severe limitation to the use of this soil for local roads and streets. This limitation can be reduced by constructing roads and streets on raised fill material and by installing drainage systems.

The capability subclass of this soil is IIIw, and the woodland suitability group is 1w.

Prime Farmland

In this section, prime farmland is defined and discussed, and the prime farmland soils in Horry County are listed.

Prime farmland is one of several kinds of important farmland defined by the U.S. Department of Agriculture. It is of major importance in meeting the nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the U.S. Department of Agriculture recognizes that government at local, state, and federal levels, as well as individuals, must encourage and facilitate the wise use of our nation's prime farmland.

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

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

Prime farmland soils usually get an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not subject to frequent flooding during the growing season. The slope ranges mainly from 0 to 6 percent.

The following map units, or soils, make up prime farmland in Horry County. About 27 percent of the county, or 201,340 acres, is prime farmland. The location of each map unit is shown on the detailed soil maps at the back of this publication. The extent of each unit is given in table 4. The soil qualities that affect use and management are described in the section "Detailed Soil Map Units." This list does not constitute a recommendation for a particular land use.

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

DuA Duplin loamy fine sand, 0 to 2 percent slopes
EmB Emporia loamy fine sand, 2 to 6 percent slopes
EuA Eulonia loamy fine sand, 0 to 2 percent slopes
EuB Eulonia loamy fine sand, 2 to 6 percent slopes
GoA Goldsboro loamy fine sand, 0 to 2 percent slopes
Ln Lynchburg loamy fine sand (where drained)
NaB Nankin fine sandy loam, 2 to 6 percent slopes
NeA Nansemond loamy fine sand, 0 to 2 percent slopes
NoA Norfolk loamy fine sand, 0 to 2 percent slopes
SfA Suffolk loamy fine sand, 0 to 2 percent slopes
SfB Suffolk loamy fine sand, 2 to 6 percent slopes
SmA Summerton fine sandy loam, 0 to 2 percent slopes
YaA Yauhannah fine sandy loam, 0 to 2 percent slopes
Ye Yemassee loamy fine sand (where drained)

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 for predicting soil behavior.

Information in this section can be used to plan the use and management of soils for crops and pasture; as 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 that is in harmony with nature.

Contractors can use this survey to locate sources of sand and gravel, roadfill, and topsoil. They can use it to identify areas where 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

Gene E. Hardee, conservation agronomist, Soil Conservation Service, helped prepare this section.

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.

About 152,500 acres in Horry County was used for crops and pasture in 1974, according to figures provided by the Horry County Soil and Water Conservation District. Of this total, about 7,500 acres was in permanent pasture and 145,000 was in row crops, mainly soybeans, corn, and tobacco. Less than 5,000 acres was planted to close-growing crops, mainly wheat and oats. Most of the acreage in close-growing crops was double cropped with a late planted row crop.

The soils in Horry County have good potential for increased production of food. In 1967, according to the Conservation Needs Inventory, more than 170,000 acres of potentially good cropland was in woodland and about 11,000 acres was in permanent pasture. In addition to the reserve productive capacity represented by the land, food production could be increased by extending better crop production technology to all land in the county.

In general, the soils in the county that are well suited to crops are also well suited to urban development. According to data collected for the 1982 Resource Inventory, Horry County had about 34,000 acres of urban land and about 10,000 acres in built-up areas. This figure has been growing at the rate of about 800 acres per year. In the area of most rapid urbanization, many of the soils used are not well suited to cropland or to urban uses, but were considered desirable because of their proximity to the beaches.

Soil erosion by water is a major concern on less than 1 percent of the total land and less than 5 percent of the cropland in the county. In most areas where erosion is a hazard, slopes are more than 2 percent.

Loss of the surface layer through erosion is damaging for two reasons. First, productivity is reduced as the surface layer is lost and part of the subsoil is incorporated into the plow layer. This is especially damaging on soils that have a clayey subsoil, such as the Eulonia, Nankin, and Summerton soils. Second, soil erosion on farmland results in sedimentation in streams

and decreases the quality of water for municipal use, for recreation, and for fish and wildlife.

Erosion control practices generally provide protective surface cover, reduce runoff, and increase the rate of water infiltration. A cropping system that keeps plant cover on the soil for extended periods can hold erosion losses to amounts that do not reduce the productive capacity of the soils. On livestock farms that require pasture and hay, the legumes and grass forage crops in the cropping system reduce erosion on the sloping land and may provide nitrogen for the following crop in the sequence.

Terraces reduce runoff and erosion by reducing the length of slope. In Horry County, however, most areas of gently sloping soils are small. As a result, diversions and grassed waterways are commonly the most suitable structural means of erosion control.

Contour farming and contour stripcropping reduce runoff velocity and erosion. These practices are especially practical on gently sloping sandy soils, such as Blanton, Chisolm, Kenansville, Lakeland, and Rimini soils, where the instability of the sandy soil limits structural erosion control measures.

Minimizing tillage and leaving crop residues on the surface help increase the rate of water infiltration and reduce the hazards of runoff and erosion. Nearly all of the sheet and rill erosion hazards in Horry County could be adequately treated by using crop residue management systems in which crop residues are left on the surface.

Soil blowing is a hazard on the Blanton, Chisolm, Centenary, Emporia, Eulonia, Goldsboro, Kenansville, Lakeland, Nankin, Nansemond, Norfolk, Rimini, and Suffolk soils. Soil blowing can damage these soils if extensive areas are left unprotected. Young, tender plants are damaged most by soil blowing in Horry County. Planting annual wind control strips, windbreaks, and cover crops and roughening the soil's surface by proper tillage minimize soil blowing on these soils.

Fall plowing is generally not a good practice on the gently sloping soils that are subject to erosion by water or on soils that are subject to soil blowing. If fall tillage operations are performed, the equipment used should leave a significant amount of residue on the surface, or the tilled area should be planted to a cover crop.

Information on the design of erosion control practices for each kind of soil is contained in the Technical Guide available in local offices of the Soil Conservation Service.

Soil drainage is the major management need on about 50 percent of the acreage used for crops and pasture. Bohicket, Hobonny, Johnston, Osier, and Rutlege are naturally so wet that production of crops common to the county is generally not possible. These poorly drained and very poorly drained soils make up about 95,000 acres in the county.

Without applied drainage practices, wetness significantly damages crops on the somewhat poorly drained Lynchburg, Wahee, Witherbee, and Yemassee soils; on the poorly drained Bladen, Brookman, Coxville, Leon, Lynn Haven, Meggett, Ogeechee, Woodington, and Yonges soils; and on the very poorly drained Hobcaw soils. In some years, crops may be damaged on the moderately well drained Duplin, Eulonia, Goldsboro, Nansemond, and Yauhannah soils.

Hobcaw, Hobonny, Johnston, Ogeechee, Osier, and Rutlege soils are subject to flooding by freshwater. Bohicket soils are subject to flooding by saltwater.

The best design of surface and subsurface drainage systems is determined to a large extent by the kind of soil and by the crops to be grown. If row crops are to be grown, a combination of surface drainage and tile drainage is needed in most areas of the somewhat poorly drained soils, the poorly drained soils, and the very poorly drained soils that can be drained sufficiently for row crops. For special crops, such as tobacco or vegetable crops, which require intensive farming practices, a combination of surface and subsurface drainage is needed on most areas of the moderately well drained soils. Tile drainage is very slow in the Bladen, Coxville, Meggett, and Wahee soils. When tile drains are used on Centenary, Echaw, Leon, Lynn Haven, Nansemond, Witherbee, and Woodington soils, a filter is needed to prevent sand from entering tile lines.

Low available water capacity is a limitation on the Blanton, Centenary, Chisolm, Echaw, Kenansville, Lakeland, Lynn Haven, and Witherbee soils. This limitation can be reduced by crop residue management, proper crop selection, and irrigation. These soils are well suited to pasture grasses, such as bahiagrass and coastal bermudagrass, and to drought-tolerant crops, such as grain sorghum, rye, and watermelons. Also, because nutrients are rapidly leached from these soils, fertilizer and lime should be applied frequently for good plant growth.

The Bohicket soils and the Beaches are too saline to grow crops or pasture. The Newhan soils and the Beaches are too sandy for crops or pasture.

Soil fertility is naturally low in many of the soils in the county. However, most of the soils respond well to additions of fertilizers and lime.

Most of the soils in Horry County range from very strongly acid to slightly acid. The Bladen, Coxville, Leon, Lynchburg, Lynn Haven, Nansemond, Osier, Pocomoke, Rimini, Rutlege, Suffolk, Summerton, Witherbee, and Yemassee soils range from extremely acid to strongly acid. The Bohicket, Meggett, Newhan, and Yonges soils range from slightly acid to moderately alkaline.

The natural acidity of most of these soils means that regular applications of lime are needed for most crops to grow well. The levels of available phosphorus and potash are naturally low in most of the soils.

Additions of lime and fertilizer on any soil should be based on soil tests, the needs of the crop, and the desired level of yields. The Cooperative Extension Service can help in determining the kinds and amount of fertilizer and lime to apply.

Most of the soils used for crops in the county have a surface layer of sandy loam or loamy sand. The tilth is generally good on most of the well drained to somewhat poorly drained soils, and these soils can be worked over a wide range of moisture conditions.

Field crops suited to the soils and climate of the county include many that are not now commonly grown (fig. 8). Corn, soybeans, and tobacco are the principal row crops. Wheat, oats, and rye are the common close-growing crops. Coastal bermudagrass and bahiagrass are grown for pasture and hay.

Specialty crops grown in Horry County are vegetables, small fruits, and nursery plants. A significant acreage is used for vegetable crops, including sweet potatoes, cabbage, broccoli, string beans, cucumbers, melons, tomatoes, lima beans, sweet corn, and peas, and for small fruits, such as strawberries and blueberries. In addition, large areas are suited to special crops, such as grapes, peaches, and pecans.

The soils that have good natural drainage and moderate available water capacity and that warm up early in the spring are especially well suited to many vegetables and small fruits. Such soils include the Emporia, Eulonia, Nankin, Norfolk, Suffolk, and Summerton soils. In addition, with a well designed drainage system, the Duplin, Goldsboro, Lynchburg, Nansemond, Wahee, Yauhannah, and Yemassee soils are especially well suited to vegetables planted later in the spring. Crops generally can be planted and harvested earlier on all of these soils than on the other soils in the county.

Most of the well drained soils in the county are suited to orchards and nursery plants. However, in low areas where frost is frequent and air drainage is poor, the soils generally are poorly suited to early vegetables and orchards. Blueberries commonly grow best on soils that are wet in their natural state, but on which good drainage systems have been installed.

More information and suggestions for growing crops and pastures can be obtained from the local offices of the Cooperative Extension Service and the Soil Conservation Service.

Figure 8.—Centenary fine sand is fairly well suited to sunflowers, a new crop that is being tested in the county.

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 5. 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 5 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 use as cropland. Crops that require special management are excluded. The soils are grouped according to their limitations for field crops, the risk of damage if they are used for crops, and the way they respond to management. The criteria used in grouping the soils do not include major, and generally expensive, landforming that would change slope, depth, or other characteristics of the soils, nor do they include possible but unlikely major reclamation projects. Capability classification is not a substitute for interpretations designed to show suitability and limitations of groups of soils for woodland 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 they 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,* or *c,* to the class numeral, for example, IIe. The letter *e* shows that the main limitation is risk of erosion unless a close-growing plant cover is maintained; *w* shows that water in or on the soil interferes with plant growth or cultivation (in some soils the wetness can be partly corrected by artificial drainage); and *s* shows that the soil is limited mainly because it is shallow, droughty, or stony.

There are no subclasses in class I because the soils of this class have few limitations. The soils in class V are subject to little or no erosion, but they have other limitations that restrict their use to pasture, rangeland, woodland, wildlife habitat, or recreation. Class V contains only the subclasses indicated by *w,* or *c.*

The acreage of soils in each capability class and subclass is shown in table 6. The capability classification of each map unit is given in the section "Detailed Soil Map Units."

Woodland Management and Productivity

Norman W. Runge, forester, Soil Conservation Service, helped prepare this section.

When Horry County was first settled, it was covered by pine, oak, and hickory on the uplands and by baldcypress and water-tolerant hardwoods in the low-lying wet areas. The virgin forest provided material for naval stores and logging industries.

Trees now cover about 70 percent of the survey area. Fifty-five percent of the forest land is in southern pine and pine-oak forest types. Ten percent of the forested area is in the upland oak-hickory forest type. The remaining 35 percent is in bottom land hardwood forest types.

The upland areas are dominated by pine species, the most common being loblolly pine. Longleaf pine, slash pine, and pond pine occur to a lesser extent. Hardwood forests are found mainly in the low-lying areas and drainageways. Some common hardwoods are water oak, sweetgum, blackgum, sycamore, water tupelo, yellow-poplar, and baldcypress.

Soils differ in their suitability for trees because of their different elevations, positions, and other individual characteristics. The most important characteristics are those that determine moisture supply and growing space for tree roots, such as the thickness and texture of the surface layer and subsoil, the depth to a root-restricting layer, the depth to the water table, and salinity.

The climate in Horry County is very favorable to tree growth; annual rainfall averages 50 inches and there are about 245 frost-free days in the year.

The level of woodland management has improved significantly in recent years. Wildfires caused by uncontrolled burning, which were common in the area about two decades ago, have been significantly reduced by fire protection and prescribed burning. Drainage ditches that have access roads on the spoil banks are common in large wooded areas that are low-lying and wet. Droughty soils are commonly furrowed and the seedlings planted in the beds. Additional measures being practiced or considered include planting genetically improved strains, water management to stabilize the water table, and fertilization.

The commercial value of wood products in the county is substantial, but it is below the potential capacity. Much of the woodland is owned by major paper companies and other large landowners and is managed for sawtimber and pulp production. In addition to its commercial use, woodland is valuable for grazing, wildlife habitat, recreation, natural beauty, and watershed protection.

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 symbol (woodland suitability) 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 *w* indicates excessive water in or on the soil and *s* indicates sandy texture. The letter *o* indicates that limitations or restrictions are insignificant. If a soil has more than one limitation, the priority is w and s.

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 a 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.

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

William J. Melven, biologist, Soil Conservation Service, helped prepare this section.

Recreation is an increasingly important land use in Horry County. In a recent report from the Yadkin-Pee Dee River Basin study, the summary stated that "most recreation land will come from the present forest land, with only a relatively small amount coming from what is now cropland or pasture land." This statement, made for the entire Basin, applies only in part to Horry County. The Coastal Zone of Horry County is widely known for its tourist attractions and continues to be developed. Such development includes second homes or living quarters built for leisure and recreation use.

Development decisions are complicated by the fragile resources of the Coastal Zone. Many different kinds of information must be available for decision makers. The

following soils data for recreation planning should be considered.

In table 8, the soils of the survey area are rated according to the 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 ponding and flooding are limited for some recreational uses by the duration and depth of flooding and the season when inundation occurs. In planning recreation facilities, onsite evaluation of these factors 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 may apply to recreation development.

Camp areas require site preparation such as shaping and leveling the tent and trailer 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 gentle slopes and are not wet or subject to flooding during the period of use. The surface absorbs rainfall readily but remains firm and is not dusty when dry.

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, and are not subject to flooding during the period of use.

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 firm after rains and is not dusty when dry.

Paths and trails for hiking and horseback riding 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.

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. The suitability of the soil for tees or greens is not considered in rating the soils.

Wildlife Habitat

William J. Melven, biologist, Soil Conservation Service, helped prepare this section.

Soils help determine the kinds of wildlife that inhabit an area by influencing the kinds of plants that grow in an area. Other influences are man's activities, which directly affect the quantity and quality of wildlife habitat, and such natural conditions as topography, the amount of water, and whether the water is salt, brackish, or fresh. In Horry County, there are two broad general habitat areas, the Coastal Marsh and the Coastal Plain.

In the narrow Coastal Marsh strip, the common plants are the large palmetto, dwarf palmetto, holly, and groundsel. The low marsh is covered by an extensive pure stand of smooth cordgrass.

The rest of Horry County is a coastal plain that is characterized by low sandy plains and damp flatwoods. The common trees are live oak, laurel oak, white oak, magnolia, hickories, gum, and pines. Red fruited haws, tupelo gum, and baldcypress grow in the swamps. Areas of dense vegetation in this region are predominantly evergreen, due largely to the tangled growth of many species of smilax, yellow jessamine, gallberry, redbay, sweetbay, and loblollybay.

A variety of land use patterns contributes to the diversity of Horry County's wildlife habitat. In general, the patterns of land use favor openland wildlife species rather than forest land wildlife species. The great majority of wildlife habitat is privately owned and controlled. In 1978, 22 hunting clubs controlled over 101,000 acres, and the State of South Carolina controlled one 17,000 acre game management area.

Water resources in Horry County range in size from small blackwater streams to the Atlantic Ocean. In between these two extremes are ponds and lakes as large as Busbee Lake, which is 350 acres, and brackish marshes, which are still larger. Fish live in all of these water areas.

Some endangered wildlife species of national concern can be seen in Horry County, and other species on the national list occasionally visit the area. Species that can be rather easily observed include the eastern brown pelican, red-cockaded woodpecker, and the American alligator.

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, flood hazard, and slope. Soil temperature and soil moisture are also considerations. Examples of grasses and legumes are bermudagrass, bahiagrass, and clover.

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, and flood hazard. Soil temperature and soil moisture are also considerations. Examples of wild herbaceous plants are little bluestem, goldenrod, beggarweed, partridge pea, and broomsedge.

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 pyracantha, 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 and cedar.

Wetland plants are annual and perennial, wild herbaceous plants that grow on moist or wet sites. Submerged or floating aquatic plants are excluded. Soil properties and features affecting wetland plants are texture of the surface layer, wetness, reaction, salinity, and slope. Examples of wetland plants are smartweed, wild millet, wildrice, saltgrass, cordgrass, rushes, sedges, and reeds.

Shallow water areas have an average depth of less than 5 feet. Some are naturally wet areas. Others are created by dams, levees, or other water-control structures. Soil properties and features affecting shallow water areas are wetness, 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, pheasant, 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, and deer. Bear are occasionally reported in the vicinity of Lumber River.

Habitat for wetland wildlife consists of open, marshy or swampy shallow water areas. Some of the wildlife attracted to such areas are ducks, geese, shore birds, muskrat, mink, and beaver.

Engineering

Lennie J. Farmer, area engineer, Soil Conservation Service, helped prepare this section.

There are many soil properties important to engineering. Among them are permeability, strength, compaction characteristics, soil drainage, shrink-swell potential, grain size, plasticity, and soil reaction. Slope and depth to the water table are also important.

In this section, soils are rated for land uses related to urban development and to water management. Ratings are based on the soil's capabilities 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. Within the larger areas, there may be smaller areas of varied soil types that require in-depth interpretation for selected engineering uses, especially those that involve heavy loads or that require excavations to depths greater than 6 feet.

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 must 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, 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: evaluate the potential of areas for residential, commercial, industrial, and recreational uses; make preliminary estimates of construction conditions; evaluate alternative routes for roads, streets, highways, pipelines, and underground cables; evaluate alternative sites for sanitary landfills, septic tank absorption fields, and sewage lagoons; plan detailed onsite investigations of soils and geology; locate potential sources of gravel, sand, earthfill, and topsoil; plan drainage systems, irrigation systems, ponds, terraces, and other structures for soil and water conservation; and predict performance of proposed small structures and pavements by comparing the performance of existing similar structures on the same or similar soils.

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

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

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 a very firm dense layer, 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 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 a high water table, flooding, 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, the available water capacity in the upper 40 inches, and the content of salts, sodium, and sulfidic materials affect plant growth. Flooding, wetness, slope, 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 that 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 60 inches is evaluated. The ratings are based on soil properties, site features, and observed performance of the soils. Permeability, a high water table, and flooding affect absorption of the effluent.

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 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, flooding, 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 can cause construction problems.

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 or to a cemented pan, a

high water table, slope, and flooding affect both types of landfill. Texture, 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 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, a cemented pan, 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 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 and low shrink-swell potential. 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. Depth to the water table is 1 to 3 feet. Soils rated *poor* have a plasticity index of more than 10 or a high shrink-swell potential. 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.

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 a water table, soil texture, and thickness of suitable material. Reclamation of the borrow area is affected by slope, a water table, and toxic material.

Soils rated *good* have friable, loamy material to a depth of at least 40 inches. They 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 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 soluble salts, 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 the restrictive features that affect each soil for 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 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 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 organic matter or salts or sodium. A high water table affects the amount of usable material. It also affects trafficability.

Aquifer-fed excavated ponds are pits or dugouts that extend to a ground-water aquifer or to a depth below a permanent water table. Excluded are ponds that are fed only by surface runoff and embankment ponds that impound water 3 feet or more above the original surface. Excavated ponds are affected by depth to a permanent water table, permeability of the aquifer, and the salinity of the soil.

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 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; and subsidence of organic layers. Excavating and grading and the stability of ditchbanks are affected by slope and the hazard of cutbanks caving. The productivity of the soil after drainage is adversely affected by extreme acidity or by toxic substances in the root zone, such as salts, sodium, 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 performance of a system is affected by the depth of the root zone, the amount of salts or sodium, and soil reaction.

Grassed waterways are natural or constructed channels, generally broad and shallow, that conduct surface water to outlets at a nonerosive velocity. Wetness and slope affect the construction of grassed waterways. A hazard of wind erosion, low available water capacity, restricted rooting depth, toxic substances such as salts or sodium, 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. These results are reported in table 17.

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. 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. The AASHTO classification for soils tested, with group index numbers in parentheses, is given in table 17.

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 ovendry weight. The sieves, numbers 4, 10, 40, and 200 (USA Standard Series), have openings of 4.76, 2.00, 0.420, and 0.074 millimeters, respectively. Estimates are based on laboratory tests of soils sampled in the survey area and in nearby areas and on estimates made in the field.

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

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

The estimates of grain-size distribution, liquid limit, and plasticity index are 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, or component, 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, plasticity, the ease of soil dispersion, and other soil properties. The amount and kind of clay in a soil also affect tillage and earthmoving operations.

Moist bulk density is the weight of soil (ovendry) per unit volume. Volume is measured when the soil is at field moisture capacity, that is, the moisture content at 1/3 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 in each major soil layer is stated in inches of water per inch of soil. 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.

Salinity is a measure of soluble salts in the soil at saturation. It is expressed as the electrical conductivity of the saturation extract, in millimhos per centimeter at 25 degrees C. Estimates are based on field and laboratory measurements at representative sites of nonirrigated soils. The salinity of irrigated soils is affected by the quality of the irrigation water and by the frequency of water application. Hence, the salinity of soils in individual fields can differ greatly from the value given in the table. Salinity affects the suitability of a soil for crop production, the stability of soil if used as construction material, and the potential of the soil to corrode metal and concrete.

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. Losses are expressed in tons per acre per year. These 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 0.02 to 0.69. The higher the value, the more susceptible the soil is to sheet and rill erosion by water.

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 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 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 of the soils are shown in table 16 with dual hydrologic groups, for example A/D. This means that under natural conditions the soil is in group D, but by artificial methods the water table can be lowered to the point that the soil fits in group A. Onsite investigation is needed, however, to determine the hydrologic group of the soil at any particular location because there are different degrees of drainage and water table control.

Flooding, the temporary inundation of an area, is caused by overflowing streams, by runoff from adjacent slopes, or by tides. Water standing for short periods after rainfall or snowmelt is not considered flooding, 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 to occur.

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 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. 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.

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 severely corrosive 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 the amount of sulfates in the saturation extract.

Engineering Index Test Data

Table 17 shows laboratory test data for several pedons sampled at carefully selected sites in the survey area. The pedons are typical of the series and are described in the section "Soil Series and Their Morphology." The soil samples were tested by the South Carolina Department of Highways and Public Safety.

The testing methods generally are those of the American Association of State Highway and Transportation Officials (AASHTO) or the American Society for Testing and Materials (ASTM).

The tests and methods are: AASHTO classification—M 145 (AASHTO), D 3282 (ASTM); Unified classification—D 2487 (ASTM); Mechanical analysis—T 88 (AASHTO), D 2217 (ASTM); Liquid limit—T 89 (AASHTO), D 423 (ASTM); Plasticity index—T 90 (AASHTO), D 424 (ASTM).

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 on laboratory measurements. Table 18 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 Aquent (*Aqu*, meaning water, plus *ent*, from Entisol).

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 Psammaquents (*Psamm*, meaning sandy, plus *aquent*, the suborder of the Entisols that have an aquic moisture regime).

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

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 siliceous, thermic Typic Psammaquents.

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. There can be some variation in the texture of the surface layer or of the substratum 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 (4)*. 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."

Bladen Series

The Bladen series consists of poorly drained, slowly permeable soils that formed in clayey Coastal Plain sediments on low, flat, fluvial or marine terraces on lower elevations. Slope is dominantly less than 1 percent. These soils are clayey, mixed, thermic Typic Albaquults.

Bladen soils are geographically associated with the Ogeechee, Brookman, Wahee, Yemassee, Eulonia, and Yauhannah soils. The Ogeechee and Brookman soils are on landscapes similar to those of the Bladen soils. Ogeechee soils have a fine-loamy control section. The Brookman soils have an umbric epipedon and are

Alfisols. The Wahee, Yemassee, Eulonia, and Yauhannah soils are on higher elevations. Some part of the Bt horizon of these soils has a dominant chroma of 3 or more.

Typical pedon of Bladen fine sandy loam, about 1.25 miles southwest of Conway-Horry County Airport, 50 feet north of the junction of unimproved roads; Map 68:

A—0 to 6 inches; very dark gray (10YR 3/1) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Btg1—6 to 31 inches; gray (10YR 5/1) clay; common medium prominent brownish yellow (10YR 6/8) mottles; moderate medium and coarse subangular blocky structure; very firm; common distinct clay films on faces of peds; few fine and medium roots; few fine holes and pores; very strongly acid; gradual smooth boundary.

Btg2—31 to 42 inches; gray (10YR 5/1) clay; common medium distinct brownish yellow (10YR 6/8) and few fine prominent yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; very firm; common distinct clay films on faces of peds; few fine holes and pores; very strongly acid; gradual smooth boundary.

Btg3—42 to 58 inches; gray (10YR 6/1) clay; common medium distinct brownish yellow (10YR 6/8) mottles; moderate medium subangular blocky structure; very firm; common distinct clay films on faces of peds; few fine holes and pores; very strongly acid; gradual smooth boundary.

Btg4—58 to 62 inches; gray (10YR 6/1) clay; moderate medium subangular blocky structure; very firm; common distinct clay films on faces of peds; few fine holes and pores; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction in this soil ranges from extremely acid to strongly acid, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is fine sandy loam, sandy loam, or loam.

The E horizon, where present, has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Few to common mottles in shades of brown are in most pedons. The E horizon is fine sandy loam or sandy loam.

The Btg horizon has hue of 10YR, value of 4 to 6, and chroma of 1. It has few to many mottles in shades of brown, yellow, red or gray, or it is mottled in these colors. The Btg horizon is sandy clay or clay. In some pedons, thin strata of sandy material are in the lower part of the Btg horizon.

Blanton Series

The Blanton series consists of somewhat excessively drained, moderately permeable soils that formed in sandy and loamy Coastal Plain sediments on rolling landscapes adjacent to large stream flood plains. Slope ranges from 0 to 6 percent. These soils are loamy, siliceous, thermic Grossarenic Paleudults.

Blanton soils are geographically associated with the Kenansville, Chisolm, Nansemond, Lakeland, and Osier soils. The Kenansville and Chisolm soils are on slightly lower elevations than the Blanton soil, and the Nansemond soils are on nearly level landscapes. The Kenansville, Chisolm, and Nansemond soils have an arenic surface layer. The Lakeland soils are on similar landscapes and are sandy throughout. Osier soils are on lower elevations, are sandy throughout, and have a higher seasonal water table.

Typical pedon of Blanton sand, 0 to 6 percent slopes, about 11.5 miles southwest of Loris and 2.3 miles east of the intersection of U.S. Highway 701 and South Carolina Secondary Highway 97, about 1.1 mile north of dirt road, 360 feet west of road, in a field; Map 44:

Ap—0 to 11 inches; grayish brown (10YR 5/2) sand; single grained; loose; many fine roots; strongly acid; abrupt smooth boundary.

E1—11 to 26 inches; very pale brown (10YR 7/4) sand, few fine distinct yellow (10YR 7/6) mottles; single grained; loose; few fine roots; few uncoated sand grains; strongly acid; gradual wavy boundary.

E2—26 to 44 inches; light yellowish brown (10YR 6/4) sand, common medium distinct yellowish brown (10YR 5/6) mottles; single grained; loose; few uncoated sand grains; strongly acid; gradual wavy boundary.

E3—44 to 58 inches; very pale brown (10YR 7/3) sand; few medium distinct yellow (10YR 7/6) mottles; single grained; loose; few uncoated sand grains; strongly acid, gradual wavy boundary.

Bt1—58 to 63 inches; yellowish brown (10YR 5/8) sandy loam; weak fine subangular blocky structure; very friable; sand grains coated and bridged with clay; few small quartz pebbles; strongly acid; gradual wavy boundary.

Bt2—63 to 75 inches; brownish yellow (10YR 6/6) sandy loam; common medium distinct yellowish brown (10YR 5/8), light gray (10YR 7/2), and very pale brown (10YR 7/4) mottles; moderate medium subangular blocky structure; friable; sand grains coated and bridged with clay; few faint clay films on ped faces; very strongly acid.

The thickness of the solum ranges from 60 to more than 80 inches. The soil is very strongly acid or strongly acid throughout the profile, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. It is sand, fine sand, or loamy fine sand.

The E horizon has hue of 10YR, value of 6 to 8, and chroma of 3 to 8. It is sand, fine sand, or loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. It has none to common mottles in shades of yellow, brown, or gray. The Bt horizon is sandy loam or sandy clay loam.

Bohicket Series

The Bohicket series consists of poorly drained, very slowly permeable soils that formed in silty and clayey Coastal Plain sediments on broad tidal flats bordering the Atlantic Ocean. Slope is dominantly less than 1 percent. These soils are fine, mixed, nonacid, thermic Typic Sulfaquents.

Bohicket soils are geographically associated with the Newhan, Lakeland, Centenary, Leon, and Rutlege soils. The Bohicket soils are also closely associated with Beaches and Udorthents. All of the associated soils and miscellaneous areas are on higher elevations than the Bohicket soils. The Newhan, Lakeland, and Centenary soils have a sandy control section. The Leon soils have a spodic horizon, and the Rutlege soils have an umbric epipedon. Beaches are sandy and smooth, and Udorthents consist of spoil material from dredging operations.

Typical pedon of Bohicket silty clay loam, about 0.5 mile southeast from Nixons Crossroads on South Carolina Secondary Highway 20, about 3.5 miles east on South Carolina Secondary Highway 236, about 0.5 mile east on private dirt road, about 0.5 mile southeast on private causeway to Waiters Island, 150 feet northeast of the causeway; Map 66:

A—0 to 12 inches; dark greenish gray (5GY 4/1) silty clay loam; massive; very sticky; many medium and fine roots; soil flows easily between fingers when squeezed and leaves small residue in hand; moderately alkaline; gradual wavy boundary.

Cg1—12 to 22 inches; dark greenish gray (5GY 4/1) silty clay loam; massive; very sticky; few fine roots; soil flows easily between fingers when squeezed and leaves small residue in hand; common greenish gray (5GY 5/1) sand lenses and strata; few fragments of shell; moderately alkaline; gradual wavy boundary.

Cg2—22 to 34 inches; dark greenish gray (5GY 4/1) silty clay; massive; sticky; soil flows easily between fingers when squeezed and leaves small residue in hand; moderately alkaline; gradual wavy boundary.

Cg3—34 to 50 inches; dark greenish gray (5GY 4/1) silty clay; massive; sticky; soil flows easily between fingers when squeezed and leaves small residue in hand; many small and medium fragments of shell; moderately alkaline; gradual wavy boundary.

Cg4—50 to 72 inches; dark greenish gray (5GY 4/1) silty clay loam; massive; sticky; soil flows easily between fingers when squeezed and leaves small residue in hand; moderately alkaline.

These soils are saturated continuously by sea water. Soil salinity is high or very high. The *n* value of all horizons within the 10- to 40-inch control section is 1 or more. Fragments of shell are within 50 inches of the surface in most pedons. Reaction ranges from slightly acid to moderately alkaline throughout. Few to common thin strata and pockets of sand are present in the upper part of the Cg horizon of most pedons.

The A horizon has hue of 5Y and 5GY, value of 4 or 5, and chroma of 1. Mottles, in shades of brown caused by root stains, are present in some pedons. The A horizon is silty clay loam, silty clay, or clay.

The Cg horizon has hue of 5GY, value of 4 or 5, and chroma of 1. Mottles in shades of brown are present in some pedons. The Cg horizon is silty clay loam, silty clay, or clay.

Brookman Series

The Brookman series consists of very poorly drained, slowly permeable soils that formed in clayey Coastal Plain sediments in broad, shallow depressions. Slope is dominantly less than 1 percent. These soils are fine, mixed, thermic Typic Umbraqualfs.

Brookman soils are geographically associated with the Bladen, Meggett, Yonges, Yauhannah, Wahee, Eulonia, and Yemassee soils. The Bladen soils are on landscapes similar to those of the Brookman soils, but they do not have an umbric epipedon and are Ultisols. The Meggett and Yonges soils are also on similar landscapes, but do not have an umbric epipedon. The Yonges, Yauhannah, and Yemassee soils have a fine loamy control section. The Yauhannah, Wahee, Eulonia, and Yemassee soils are on higher elevations. Some part of the Bt horizon of these soils has a dominant chroma of 3 or more.

Typical pedon of Brookman loam, about 2 miles north of Myrtle Beach, 1 mile northwest on 29th Street from its intersection with U.S. Highway 17, 200 feet southwest of street, in a cultivated field; Map 83:

Ap—0 to 10 inches; black (10YR 2/1) loam; weak medium granular structure; friable; common fine and medium roots; slightly acid; clear smooth boundary.

Btg1—10 to 22 inches; very dark gray (10YR 3/1) clay; few medium prominent yellowish red (5YR 4/8) and dark gray (10YR 4/1) mottles; moderate medium subangular blocky structure; firm; many distinct clay films on faces of peds; many fine roots; few streaks or pockets of black material from the surface layer; strongly acid; gradual wavy boundary.

Btg2—22 to 46 inches; gray (10YR 5/1) clay; common medium distinct yellowish brown (10YR 5/6), and light gray (10YR 6/1) mottles; moderate medium subangular blocky structure; very firm; many distinct clay films on faces of peds; few fine roots; few fine pores; medium acid; clear wavy boundary.

Bcg—46 to 60 inches; gray (10YR 5/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/6), few medium prominent yellowish red (5YR 4/6), and few medium distinct light gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine roots; few fine pores; slightly acid; gradual wavy boundary.

Cg1—60 to 68 inches; greenish gray (5G 5/1) sandy loam; few medium prominent yellowish red (5YR 4/6) and common medium distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; very friable; few fine holes and pores; moderately alkaline.

The thickness of the solum ranges from 50 to more than 70 inches. Reaction ranges from strongly acid to slightly acid in the A horizon, and from strongly acid to moderately alkaline in the B horizon. In some pedons, the lower part of the B and the C horizons contain few to many small fragments of marine shells and small nodules of calcium carbonate.

The A horizon has hue of 10YR, value of 2 to 3, and chroma of 1 or 2. It is loam.

The Btg horizon is neutral or has hue of 10YR to 5Y, value of 3 to 6, and chroma of 0 to 2. It has few to many mottles in shades of gray, yellow, brown, or red, or it may have mottles of high and low chroma. The Btg horizon is clay or sandy clay.

The BCg horizon is neutral or has hue of 10YR or 2.5Y, value of 5 to 6, and chroma of 0 to 1. It has few to many mottles in shades of gray, brown, yellow, or red, or it may have mottles of high and low chroma. The BCg horizon is sandy clay loam or clay.

The Cg horizon is neutral or has hue of 5YR to 5G, value of 4 to 7, and chroma of 0 to 1. It has few to common mottles in shades of yellow, brown, red, or gray. Some mottles are mixed brown and gray. The Cg horizon is loamy sandy, sandy loam, or sandy clay loam.

Centenary Series

The Centenary series consists of moderately well drained, rapidly permeable soils that formed in sandy Coastal Plain sediments, on broad ridges and flats. Slope is dominantly less than 1 percent. These soils are sandy, siliceous, thermic Grossarenic Entic Haplohumods.

The Centenary soils in Horry County are a taxadjunct to the Centenary series because they have a slightly higher reaction range in the lower part of the profile than is defined for the Centenary series. This difference does not significantly alter the use or behavior of the soils.

Centenary soils are geographically associated with the Chisolm, Lakeland, Yauhannah, Yemassee, Leon, Ogeechee, Bladen, and Yonges soils. The Chisolm, Lakeland, and Yauhannah soils are on landscapes similar to those of the Centenary soils, but they do not have a spodic horizon. The Yemassee soils are on slightly lower elevations but do not have a spodic horizon. The Ogeechee, Bladen, and Yonges soils are on lower elevations but do not have a spodic horizon. The Leon soils are on lower elevations and are Aquods.

Typical pedon of Centenary fine sand, about 2.5 miles northeast of Surfside Beach; northwest on South Carolina Secondary Highway 375, 0.7 mile from junction of U.S. Highway 17, northeast 0.8 mile on South Carolina Secondary Highway 394 (1,500 feet southwest of Lakewood Elementary School), about 100 feet southeast of the road; Map 88:

A—0 to 5 inches; dark gray (10YR 4/1) fine sand; single grained; loose; common fine and medium roots; very strongly acid; abrupt smooth boundary.

E1—5 to 21 inches; brownish yellow (10YR 6/6) fine sand; single grained; loose; few fine roots; few clean sand grains; medium acid; gradual wavy boundary.

E2—21 to 42 inches; brownish yellow (10YR 6/6) fine sand; few medium distinct yellowish brown (10YR 5/6) and common medium distinct light gray (10YR 7/2) mottles; single grained; loose; few fine roots; medium acid; gradual wavy boundary.

E3—42 to 68 inches; light gray (10YR 7/1) fine sand; single grained; loose; slightly acid; clear wavy boundary.

Bh1—68 to 72 inches; very dark brown (10YR 2/2) fine sand; few medium distinct light brownish gray (10YR 6/2) mottles; single grained; slightly acid; gradual wavy boundary.

Bh2—72 to 80 inches; black (10YR 2/1) fine sand; weak fine granular structure; very friable; most sand grains have organic coatings; slightly acid.

This soil is sand or fine sand to a depth of 50 inches or more and may range to loamy sand below that depth. The depth to the Bh horizon ranges from 50 to 80 inches. Reaction ranges from very strongly acid to slightly acid throughout.

The A horizon has hue of 10YR, value of 3 to 4, and chroma of 1.

The upper part of the E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 8. It has few to common mottles in shades of brown, gray, or red. Mottles that have chroma of 2 or less are within 40 inches of the surface. The lower part of the E horizon has hue of 10YR, value of 5 to 8, and chroma of 1 or 2. Mottles of higher chroma are present in the lower part of the E horizon in some pedons.

The Bh horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 or 2. Mottles in shades of brown or gray are present in some pedons.

Chisolm Series

The Chisolm series consists of well drained, moderately permeable soils that formed in sandy and loamy Coastal Plain sediments on lower elevations. Slope is dominantly less than 4 percent, but it ranges to as much as 6 percent along drainageways. These soils are loamy, siliceous, thermic Arenic Hapludults.

Chisolm soils are geographically associated with the Lakeland, Yauhannah, Yemassee, Ogeechee, and Meggett soils. The Lakeland soils are on landscapes similar to those of the Chisolm soils, but they do not have an argillic horizon. The Yauhannah, Yemassee, and Ogeechee soils are on slightly lower elevations, are wetter, and are not arenic. The Meggett soils are on the lowest elevations, are adjacent to drainageways, and have a clayey particle-size control section.

Typical pedon of Chisolm fine sand, 0 to 6 percent slopes, 4 miles west of Surfside Beach; about 2.2 miles northwest on South Carolina Secondary Highway 544 from the Georgetown County line, across Collings Creek, about 0.5 mile west on dirt road, about 2 miles south on dirt road, 45 feet west of road; Map 91:

A—0 to 8 inches; grayish brown (10YR 5/2) fine sand; weak fine granular structure; very friable; common fine and medium roots; strongly acid; clear smooth boundary.

E—8 to 24 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine and medium roots; strongly acid; clear wavy boundary.

Bt—24 to 46 inches; strong brown (7.5YR 5/8) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; few fine flakes of mica; very strongly acid; gradual wavy boundary.

BC—46 to 58 inches; yellowish red (5YR 5/8) sandy loam; weak medium subangular blocky structure; very friable; few fine roots; few fine flakes of mica; very strongly acid; gradual wavy boundary.

C—58 to 80 inches; yellow (10YR 7/6) sand; common medium distinct reddish yellow (5YR 6/8) mottles; single grained; loose; few fine flakes of mica; strongly acid.

The thickness of the solum ranges from 50 to more than 75 inches. Reaction ranges from very strongly acid to moderately acid in the upper part of the profile and is very strongly acid or strongly acid in the lower part. Few to common fine flakes of mica are in the lower part of the soil profile of most pedons.

The A horizon has hue of 10YR, value of 3 to 6, and chroma of 1 to 4. It is fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. It is loamy sand.

The BE horizon, where present, has hue of 7.5YR or 10YR, value of 5 to 7, and chroma of 6. It is sandy loam.

The Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 6 or 8. Few to common mottles in shades of brown, red, and gray are in some pedons. The Bt horizon is sandy clay loam.

The BC horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 6 or 8, or it is mixed in varying shades of gray, brown, and red. The BC horizon is sandy loam.

The C horizon has hue of 10YR, value of 5 to 8, and chroma of 2 to 8, with few to common mottles in shades of brown, gray, and yellow, or it is a mixture of these colors. The C horizon is loamy sand or sand.

Coxville Series

The Coxville series consists of poorly drained, slowly permeable soils that formed in clayey Coastal Plain sediments in depressions and along drainageways. Slope ranges from 0 to 2 percent. These soils are clayey, kaolinitic, thermic Typic Paleaquults.

Coxville soils are geographically associated with the Summerton, Norfolk, Goldsboro, Duplin, Lynchburg, and Woodington soils. The Summerton and Norfolk soils are on higher elevations than those of the Coxville soil, and the Lynchburg, Goldsboro, and Duplin soils are on slightly higher elevations. In all of these soils, part of the Bt horizon has dominant chroma of 3 or more. Woodington soils are on similar landscapes and have a fine-loamy control section.

Typical pedon of Coxville fine sandy loam, about 2.8 miles north of Loris on U.S. Highway 701, about 1 mile northeast on South Carolina Secondary Highway 842, 800 feet north of highway, in a cultivated field (300 feet north of small farm pond); Map 16:

Ap—0 to 8 inches; very dark gray (10YR 3/1) fine sandy loam; weak fine granular structure; very friable; many fine, medium, and large roots; few fine pores; very strongly acid; clear wavy boundary.

Btg1—8 to 16 inches; gray (10YR 5/1) clay loam; few medium distinct yellowish brown (10YR 5/8) mottles; weak fine subangular blocky structure; friable; few fine and medium roots; few fine pores; very strongly acid; gradual wavy boundary.

Btg2—16 to 44 inches; gray (10YR 5/1) clay; common medium distinct brownish yellow (10YR 6/8) and few fine prominent red (2.5YR 4/8) mottles; moderate fine subangular blocky structure; firm; common distinct clay films on faces of peds; few fine and medium roots; few fine pores; very strongly acid; gradual wavy boundary.

Btg3—44 to 56 inches; gray (10YR 5/1) clay; common medium distinct brownish yellow (10YR 6/6) and common medium prominent red (2.5YR 4/8)

mottles; moderate fine subangular blocky structure; firm; common distinct clay films on faces of peds; few fine and medium roots; few fine pores; very strongly acid; gradual wavy boundary.

BCg—56 to 72 inches; gray (10YR 5/1) sandy clay loam; thin strata of sand and clayey material; common medium distinct light gray (10YR 7/1) and few fine faint brownish yellow and red mottles; weak medium subangular blocky structure; friable; very strongly acid.

The thickness of the solum is more than 60 inches. Reaction is extremely acid or strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. Texture is fine sandy loam or sandy loam.

The E horizon, where present, has hue of 10YR, value of 5 to 7, and chroma of 2. It is sandy loam.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It has mottles in shades of red, yellow, and brown, and it is clay, sandy clay, or clay loam.

The BCg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It has mottles in shades of gray, brown, and red. The BCg horizon is sandy clay loam that has pockets, lenses, and strata of coarser and finer material.

Duplin Series

The Duplin series consists of moderately well drained, moderately slowly permeable soils that formed in clayey Coastal Plain sediments on broad flats and low ridges adjacent to the flood plains of large streams. Slope ranges from 0 to 2 percent. These soils are clayey, kaolinitic, thermic Aquic Paleudults.

Duplin soils are geographically associated with the Summerton, Coxville, Norfolk, Kenansville, Blanton, and Goldsboro soils. The Summerton, Coxville, Kenansville, and Blanton soils are on slightly higher elevations than the Duplin soils and do not have wetness mottles of chroma 2 or less within a depth of 30 inches. The Coxville soils are on lower elevations and have a Bt horizon that is dominantly gray. The Goldsboro soils are on similar landscapes and have a fine-loamy control section.

Typical pedon of Duplin loamy fine sand, 0 to 2 percent slopes, about 1.5 miles north of Bayboro, about 1.8 miles northwest on secondary road 34, 1 mile west on dirt road, northwest 0.2 mile at fork of dirt road, 30 feet north of road, in pine plantation; Map 19:

A—0 to 9 inches; grayish brown (10YR 5/2) loamy fine sand; weak medium granular structure; very friable; common to many fine and medium roots; few large roots; medium acid; clear smooth boundary.

E—9 to 17 inches; very pale brown (10YR 7/3) loamy fine sand; moderate medium granular structure; very friable; few fine and medium roots; medium acid; clear wavy boundary.

Bt1—17 to 28 inches; brownish yellow (10YR 6/6) clay; common medium distinct yellowish red (5YR 5/6) and yellow (10YR 7/6) mottles and few fine distinct very pale brown (10YR 7/3) mottles; strong coarse subangular blocky structure; firm; few faint clay films on faces of peds; few to common fine and medium roots; few medium pores; strongly acid; clear wavy boundary.

Bt2—28 to 35 inches; brownish yellow (10YR 6/6) clay loam; common medium distinct yellowish red (5YR 5/6), yellow (10YR 7/1), and light gray (10YR 7/1) mottles; strong coarse subangular blocky structure; firm; few distinct clay films on faces of peds and along old root channels; few fine and medium roots; few medium pores; strongly acid; gradual wavy boundary.

BC1—35 to 48 inches; mottled yellowish brown (10YR 5/6), light gray (10YR 7/2), and yellowish red (5YR 5/8) clay loam that has strata of sandy loam and sandy clay loam; moderate medium subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.

BC2—48 to 70 inches; mottled light gray (10YR 7/1), very pale brown (10YR 7/4), yellowish red (5YR 5/8), and yellow (10YR 7/8) clay that has fine strata of sandy loam and sandy clay loam; weak medium subangular blocky structure; firm; few fine roots; very strongly acid.

The thickness of the solum is more than 60 inches and has strata in the lower horizons. Reaction is strongly acid or very strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is loamy sand, loamy fine sand, or fine sandy loam.

The E horizon has hue of 10YR, value of 7, and chroma of 3 or 4. It is loamy sand or loamy fine sand.

The BE horizon, where present, has hue of 10YR, value of 5, and chroma of 6. It is clay loam.

The upper part of the Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. It has few to common mottles in shades of yellow, red, and brown. Texture of the upper part of the Bt horizon is sandy clay or clay. The lower part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 6 or 8. It has few to common mottles in shades of yellow, red, and gray, or it is mottled in shades of gray, red, and yellow. Texture of the lower part of the Bt horizon is clay loam, sandy clay, or clay.

The BC horizon is mottled in shades of gray, red, brown, and yellow, or it is light gray and has few to common mottles of brownish yellow and red. The BC horizon is clay, clay loam, or sandy clay loam and has strata of sandy loam.

Echaw Series

The Echaw series consists of moderately well drained, rapidly permeable soils that formed in sandy Coastal Plain sediments on broad interstream divides and flats. Slope is dominantly less than 1 percent. These soils are sandy, siliceous, thermic Entic Haplohumods.

Echaw soils are geographically associated with the Centenary, Leon, Witherbee, Rimini, and Rutlege soils. The Leon and Witherbee soils have a Bh horizon at a depth of less than 30 inches from the surface. The Rimini and Centenary soils have a Bh horizon at between a depth of 50 and 80 inches from the surface. Rutlege soils have an umbric epipedon and do not have a spodic horizon.

Typical pedon of Echaw sand, about 2.3 miles northwest of the Intracoastal Waterway bridge (at Socastee) on South Carolina Primary Highway 544, about 1 mile northeast on International Paper Company dirt road, 100 feet southeast of the road; Map 82:

A—0 to 4 inches; dark grayish brown (10YR 4/2) sand; salt-and-pepper appearance; single grained; loose, common fine and medium roots; very strongly acid; clear smooth boundary.

E1—4 to 16 inches; light yellowish brown (10YR 6/4) sand; single grained; loose; few fine and medium roots; strongly acid; gradual smooth boundary.

E2—16 to 30 inches; brownish yellow (10YR 6/6) loamy sand; weak fine granular structure; very friable; few fine roots; strongly acid; clear smooth boundary.

E3—30 to 36 inches; brownish yellow (10YR 6/6) sand; common medium distinct light gray (10YR 7/1) and pale brown (10YR 6/3) mottles; weak fine subangular blocky structure; very friable; strongly acid; clear smooth boundary.

Bh1—36 to 60 inches; very dark brown (10YR 2/2) sand; weak fine subangular blocky structure; very friable; slightly brittle; strongly acid; gradual wavy boundary.

Bh2—60 to 72 inches; black (10YR 2/1) sand; weak fine subangular blocky structure; very friable; slightly brittle; strongly acid.

The thickness of the solum ranges from 45 to more than 60 inches. It is sand throughout. Depth to the Bh horizon ranges from 30 to 50 inches. Reaction is very strongly acid to medium acid throughout.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2.

The upper part of the E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. The lower part of the E horizon has the same colors as the upper part, and it has few to common mottles of chroma of 2 or less; or it is dominantly gray or mottled in shades of gray and brown.

The Bh horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 3.

Emporia Series

The Emporia series consists of well drained soils that formed in loamy Coastal Plain marine sediments. These soils have moderate permeability in the upper part of the subsoil and moderately slow or slow permeability in the lower part of the subsoil. These gently sloping soils are commonly on the higher landscapes of the county; they are on knolls and on short, smooth, and choppy slopes above elevations of 70 feet. Slopes range from 2 to 6 percent. These soils are fine-loamy, siliceous, thermic Typic Hapludults.

Emporia soils are geographically associated with the Nankin, Norfolk, Suffolk, Goldsboro, Lynchburg, and Woodington soils. The Nankin, Norfolk, and Suffolk soils are on landscapes similar to those of the Emporia soils. The Nankin soils have a clayey control section. The Norfolk soils have a solum that is 60 inches or more thick. The Suffolk soils have moderate permeability throughout the subsoil. The Goldsboro, Woodington, and Lynchburg soils are on slightly lower elevations, and they have a higher seasonal water table.

Typical pedon of Emporia loamy fine sand, 2 to 6 percent slopes, about 2 miles northwest from Green Sea on South Carolina Highway 9, northeast 0.8 mile on paved road to intersection, northwest 0.2 mile, road cut on west side of the road; old house across the street; Map 9:

A—0 to 5 inches; dark brown (10YR 4/3) loamy fine sand; weak fine granular structure; very friable; many fine and medium roots; strongly acid; clear smooth boundary.

Bt1—5 to 30 inches; yellowish red (5YR 4/8) sandy clay loam moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine roots; few fine tubular pores; very strongly acid; gradual wavy boundary.

Bt2—30 to 44 inches; strong brown (7.5YR 5/8) sandy clay loam; common medium faint brownish yellow (10YR 6/8) and few medium distinct red (10R 4/8) mottles; moderate medium subangular blocky structure; friable; common faint clay films on faces of peds; few fine tubular pores; very strongly acid; gradual wavy boundary.

BC—44 to 54 inches; yellowish brown (10YR 5/8) sandy loam; stratified; few medium prominent red (10R 4/8) and few fine distinct light gray (10YR 7/1) mottles; weak medium subangular blocky structure; very friable; very strongly acid; gradual wavy boundary.

C—54 to 72 inches; mottled red (10R 4/8), strong brown (7.5YR 5/8) and light gray (10YR 7/1) loamy sand; stratified with sandy loam; single grained; loose; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches. In some profiles, the lower part of the solum is stratified. Reaction ranges from very strongly acid to medium acid throughout.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 2 to 4. It is loamy sand or loamy fine sand.

The E horizon, where present, has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is loamy sand or loamy fine sand.

The Bt horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 5 to 8. Texture is sandy clay loam in the upper part of the Bt. The lower part of the Bt horizon is sandy clay that has strata of sandy clay loam and more heavily textured material.

The BC horizon has hue of 7.5YR to 2.5Y, value of 6 to 8, and chroma of 3 to 8 and has few to common mottles in shades of yellow, red, brown, and gray. It is sandy loam or has strata of variably textured material ranging from sandy loam to clay.

The C horizon is neutral or has hue of 5YR to 2.5Y, value of 3 to 8, and chroma of 0 to 8. Most pedons have mottles of high and low chroma. Texture ranges from loamy sand to clay.

Eulonia Series

The Eulonia series consists of moderately well drained, moderately slowly permeable soils that formed in clayey Coastal Plain sediments on broad, smooth ridges. Slope is dominantly less than 2 percent. These soils are clayey, mixed, thermic Aquic Hapludults.

Eulonia soils are geographically associated with the Yauhannah, Ogeechee, Wahee, Yemassee, Yonges, Meggett, and Johnston soils. The Yauhannah soils are on landscapes similar to those of the Eulonia soils and have a fine loamy subsoil. The Wahee and Yemassee soils are on somewhat lower elevations, and the Meggett, Yonges, and Ogeechee soils are on lower elevations. All of these soils are Aquults or Aqualfs. The Johnston soils are on the lowest elevations and are Inceptisols.

Typical pedon of Eulonia loamy fine sand, 0 to 2 percent slopes, about 4 miles west of Surfside Beach, 2.7 miles north on South Carolina Primary Highway 544 from the Georgetown County line (0.5 mile northeast of Collins Creek Church), 1,000 feet east of highway, behind a country store in a cultivated field; Map 89:

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy fine sand; weak fine granular structure; very friable; many fine and medium roots; medium acid; clear smooth boundary.

E—8 to 12 inches; light yellowish brown (10YR 6/4) fine sandy loam; weak medium granular structure; very friable; few fine roots; few streaks and holes filled with grayish brown (10YR 5/2) material from the Ap; medium acid; clear smooth boundary.

Bt1—12 to 20 inches; yellowish brown (10YR 5/8) sandy clay loam; common medium prominent red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; common fine and medium roots; few very fine pores; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Bt2—20 to 40 inches; yellowish brown (10YR 5/6) clay; common medium distinct gray (10YR 6/1), and common medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on faces of peds; few to common fine and medium roots; few fine pores; few fine flakes of mica; very strongly acid; gradual wavy boundary.

BC—40 to 55 inches; mottled strong brown (7.5YR 5/8) and gray (10YR 6/1) sandy clay loam; common medium prominent yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; common fine flakes of mica; very strongly acid; gradual wavy boundary.

C—55 to 80 inches; mottled white (10YR 8/1), yellowish brown (10YR 5/4), and brownish yellow (10YR 6/6) loamy sand; massive; very friable; common fine flakes of mica; very strongly acid.

The thickness of the solum ranges from 50 inches to more than 70 inches. Reaction ranges from very strongly acid to medium acid throughout. Few to many fine flakes of mica are in the lower part of the B and the C horizons of most pedons.

The A horizon has hue of 10YR, value of 3 to 6, and chroma of 1 or 2. It is loamy fine sand, fine sandy loam, or sandy loam.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 4. It is fine sandy loam, sandy loam, or loamy fine sand.

The upper part of the Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 4 to 8, and few to common mottles in varying shades of red, brown, or gray. The lower part of the Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 6 or 8, and few to many mottles in varying shades of red, brown, or gray. In some pedons, the lower part of the Bt horizon is mixed with red, brown, or gray, or it is gray and has brown and red mottles. The Bt horizon is sandy clay or clay.

The BC horizon is mixed in varying shades of brown, red, and gray, or it is gray and has brown and red mottles. It is sandy loam or sandy clay loam.

The C horizon is mixed in varying shades of white, gray, brown, yellow, and red, or it is gray and has mottles of higher chroma. It is sandy clay loam, sandy loam, or loamy sand.

Goldsboro Series

The Goldsboro series consists of moderately well drained, moderately permeable soils that formed in loamy Coastal Plain sediments on stream terraces and broad interstream divides on the higher elevations in the county. Slope ranges from 0 to 2 percent. These soils are fine-loamy, siliceous, thermic Aquic Paleudults.

Goldsboro soils are geographically associated with the Kenansville, Nansemond, Duplin, Norfolk, Woodington, and Lynchburg soils. The Kenansville and Norfolk soils are on higher elevations than the Goldsboro soils and do not have wetness mottles within 30 inches of the surface. The Kenansville soils are also Arenic. The Duplin and Nansemond soils are in similar position on the landscape. The Duplin soils have a clayey control section, and the Nansemond soils have a coarse-loamy control section. The Woodington and Lynchburg soils are on lower elevations and are Aquults.

Typical pedon of Goldsboro loamy fine sand, 0 to 2 percent slopes, about 2.5 miles north of Green Sea, about 0.5 mile west from intersection of South Carolina Secondary Highways 33 and 306, 140 feet south of the highway, in a cultivated field; Map 9:

Ap—0 to 7 inches; dark brown (10YR 4/3) loamy fine sand; weak fine granular structure; very friable; few fine roots; few fine holes and pores; neutral; abrupt smooth boundary.

Bt1—7 to 23 inches; yellowish brown (10YR 56) sandy clay loam; few medium prominent red (2.5YR 4/8) and few medium distinct very pale brown (10YR 7.3) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine pores; strongly acid; gradual smooth boundary.

Bt2—23 to 31 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium distinct pale brown (10YR 6/3) and common medium prominent red (2.5YR 4/8) and few fine distinct light gray (10YR 7/2) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine pores; strongly acid; gradual wavy boundary.

BC—31 to 44 inches; strong brown (7.5YR 5/8) sandy clay loam with thin strata of loamy sand and sandy loam; common medium prominent red (2.5YR 4/8) and common medium distinct gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable; few fine pores; strongly acid; gradual wavy boundary.

BCg1—44 to 59 inches; mottled brownish yellow (10YR 6/6) light gray (10YR 7/1), and light brownish gray (10YR 6/2) sandy clay loam with thin strata of sandy loam and clay loam; weak medium subangular blocky structure; friable; strongly acid; gradual wavy boundary.

BCg2—59 to 72 inches; mottled light gray (10YR 7/1) and light brownish gray (10YR 6/2) clay with thin strata of sandy loam and sandy clay loam; common medium distinct brownish yellow (10YR 6/6) and few fine prominent red (2.5YR 4/8) mottles; weak medium subangular blocky structure; firm; strongly acid.

The thickness of the solum is more than 60 inches. The lower part of the solum is stratified. The soil is very strongly acid or strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 to 3. It is loamy fine sand or sandy loam.

The E horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is loamy sand or sandy loam.

The BE horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It is fine sandy loam or sandy loam.

The upper part of the B horizon has hue of 7.5YR and 10YR, value of 5 or 6, and chroma of 4 to 8. It is sandy clay loam. The lower part of the B horizon is mottled in shades of red, brown, yellow, and gray. It is sandy clay loam, sandy clay, or sandy clay loam that has strata ranging from clay loam to loamy sand.

Hobcaw Series

The Hobcaw series consists of very poorly drained, moderately permeable soils that formed in loamy Coastal Plain sediments in small stream bottoms and slightly depressional areas on lower elevations. Slope ranges from 0 to 2 percent. These soils are fine-loamy, siliceous, thermic Typic Umbraquults.

Hobcaw soils are geographically associated with the Rutlege, Johnston, Yemassee, Wahee, Osier, Ogeechee, and Bladen soils. The Yemassee and Wahee soils are on higher elevations than the Hobcaw soils, and the Osier, Ogeechee, and Bladen soils are on slightly higher elevations. None of these soils has an umbric epipedon. The Rutlege and Johnston soils are on similar landscapes. The Rutlege soils have a sandy control section, and Johnston soils have a coarse-loamy control section.

Typical pedon of Hobcaw fine sandy loam, about 1 mile northwest of Intercoastal Waterway Bridge at Socastee on South Carolina Highway 544, about 1,000 feet northeast on International Paper Company dirt road, 20 feet east of road; Map 82:

A1—0 to 12 inches; black (10YR 2/1) fine sandy loam; weak medium subangular blocky structure; friable; many fine and medium roots; few fine pores; very strongly acid; clear smooth boundary.

A2—12 to 15 inches; very dark grayish brown (10YR 3/2) loamy sand; weak medium subangular blocky

structure; friable; few fine and medium roots; few fine pores; very strongly acid; clear smooth boundary.

Btg—15 to 48 inches; very dark grayish brown (10YR 3/2) sandy loam; common medium distinct light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; few medium roots; few fine pores; strongly acid; gradual smooth boundary.

Cg—48 to 68 inches; mottled very dark grayish brown (10YR 3/2) and light brownish gray (10YR 6/2) loamy sand; massive; friable; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction ranges from very strongly acid to slightly acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is fine sandy loam or loamy sand.

The Btg horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2, or it is neutral and has value of 3 to 5. Some pedons have few to common mottles of higher chroma.

The BCg, where present, has hue of 10YR, value of 3 to 6, and chroma of 1 or 2, or it is neutral and has value of 3 to 5.

The C horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. It is loamy sand or sand.

Hobonny Series

The Hobonny series consists of very poorly drained, moderately permeable soils that formed in Coastal Plain organic deposits of herbaceous and woody plants on the flood plains of the Waccamaw River. Slope ranges up to 1 percent. These soils are euic, thermic Typic Medisaprists.

Hobonny soils are geographically associated with the Johnston, Rutlege, Yauhannah, and Ogeechee soils. The Johnston and Rutlege soils are on landscapes similar to those of the Hobonny soils and are mineral soils. The Yauhannah and Ogeechee soils are on higher elevations and are mineral soils.

Typical pedon of Hobonny muck, in Waccamaw River Swamp, 5.3 miles west of Surfside Beach, about 1 mile southwest of St. James Church and School on South Carolina Highway 544, about 1 mile northwest on dirt road, about 1,000 feet northeast on dirt road, about 0.5 mile west on dirt road, 500 feet west from the end of dirt road, in swamp; Map 89:

Oa1—0 to 30 inches; dark reddish brown (5YR 2/2) muck, very dark gray (10YR 3/1) pressed and rubbed; about 15 percent fiber, about 5 percent rubbed; massive; flows easily between fingers when squeezed and leaves small residue in hand; common fine and medium roots; few wood fragments; strongly acid; gradual wavy boundary.

Oa2—30 to 50 inches; dark reddish brown (5YR 3/2) muck very dark gray (5Y 3/1) pressed and rubbed; massive; flows easily between fingers when squeezed and leaves small residue in hand; few fine and medium roots; common wood fragments; strongly acid; gradual wavy boundary.

Oa3—50 to 80 inches; dark reddish brown (5YR 3/2) muck, dark reddish brown (5YR 2/2) pressed and rubbed; about 10 percent fiber, about 3 percent rubbed; massive; flows easily between fingers when squeezed and leaves small residue in hand; few fine roots; common wood fragments; very strongly acid.

Thickness of the organic material ranges from 51 to more than 72 inches. The soil is very strongly acid or strongly acid in all horizons.

The surface tier has hue of 5YR to 10YR, value of 2 or 3, and chroma of 2. Either the chroma or the value, and sometimes both, generally changes by one unit when sample is pressed and rubbed. The organic materials of the surface tier, after rubbing, have less than 20 percent fiber.

The subsurface tier has hue of 5YR to 10YR, value of 2 or 3, and chroma of 2. Either the chroma or the value, and sometimes both, generally changes by one unit when sample is pressed and rubbed. The subsurface tier contains 30 to 40 percent fibers unrubbed, but less than 15 percent after rubbing.

The bottom tier has hue of 5YR or 7.5YR, value of 2 or 3, and chroma of 2. Either the chroma or the value, and sometimes both, generally changes by one unit when sample is pressed and rubbed. The bottom tier has 10 to 20 percent fibers unrubbed, but less than 5 percent after rubbing.

The Cg horizon, where present, ranges from sand to sandy clay loam.

Johnston Series

The Johnston series consists of very poorly drained, rapidly permeable soils that formed in loamy and sandy stratified Coastal Plain sediments in shallow depressions and on nearly level flood plains along streams throughout the county. Slope is dominantly less than 1 percent. These soils are coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts.

Johnston soils are geographically associated with the Rutlege, Pocomoke, Osier, Lakeland, and Blanton soils. The Rutlege, Pocomoke, and Osier soils are on landscapes similar to those of the Johnston soils. The Rutlege and Osier soils have a sandy control section, and the Pocomoke soils have an argillic horizon. The Lakeland and Blanton soils are on higher elevations. The Lakeland soils are Entisols, and the Blanton soils are Ultisols.

Typical pedon of Johnston loam, in Little Pee Dee River swamp, about 2.3 miles southwest of Galivants

Ferry, about 3,100 feet west-northwest of Old Zion Church Cemetery, about 100 feet northwest of a private unimproved road; Map 24:

A—0 to 30 inches; black (10YR 2/1) loam; massive; friable, many fine, medium, and large roots; few fine holes and pores; strongly acid; abrupt smooth boundary.
Cg1—30 to 45 inches; grayish brown (10YR 5/2) loamy fine sand; single grained; loose; common fine and medium roots; very strongly acid; abrupt smooth boundary.
Cg2—45 to 70 inches; dark grayish brown (10YR 4/2) sandy loam; massive; friable; few fine and medium roots; strongly acid.

This soil is very strongly acid or strongly acid throughout.

The A1 horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is loam or fine sandy loam.

The AC horizon, where present, has hue of 10YR, value of 4, and chroma of 1 or 2. It is loam, loamy fine sand, or sand.

The Cg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. Texture is loamy fine sandy, sandy loam, loamy sand, or sand.

Kenansville Series

The Kenansville series consists of well drained, moderately permeable soils that formed in loamy Coastal Plain sediments on the smoother parts of the landscape between the higher sandy ridges and the lower wet areas throughout the county. Slope ranges from 0 to 6 percent. These soils are loamy, siliceous, thermic Arenic Hapludults.

The Kenansville soils in Horry County are a taxadjunct to the Kenansville series because they have a base saturation of slightly higher than 35 percent in the lower part of the Bt horizon. This difference does not significantly alter the use or behavior of the soils.

Kenansville soils are geographically associated with the Suffolk, Norfolk, Goldsboro, Nansemond, and Blanton soils. The Suffolk and Norfolk soils are on landscapes similar to those of the Kenansville soil but are not arenic. The Goldsboro and Nansemond soils are on slightly lower elevations and are not Arenic. The Blanton soils are on similar landscapes and are Grossarenic.

Typical pedon of Kenansville fine sand, 0 to 6 percent slopes, about 6 miles northeast of Aynor, about 1.3 miles east of junction of South Carolina Secondary Highways 308 and 23 (McQueen Crossroads), about 0.7 mile south on dirt road, 100 feet northwest from the junction of dirt roads; Map 18:

A—0 to 8 inches; grayish brown (10YR 5/2) fine sand with common clean grains of sand; weak fine granular structure; very friable; many fine and medium roots and few large roots; medium acid; abrupt smooth boundary.
E—8 to 28 inches; very pale brown (10YR 7/3) fine sand with common clean sand grains; weak fine granular structure; very friable; common fine and medium roots; few fine and medium holes; few iron nodules in lower part of horizon; strongly acid; clear smooth boundary.
Bt—28 to 44 inches; brownish yellow (10YR 6/8) sandy clay loam; few medium distinct strong brown (7.5YR 5/8) mottles and few clean sand grains along old root channels; moderate medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine pores; strongly acid; gradual wavy boundary.
BC—44 to 51 inches; very pale brown (10YR 7/4) sandy loam; common medium distinct brownish yellow (10YR 6/6) and common medium distinct light gray (10YR 7/1) mottles; moderate medium subangular blocky structure; friable; few fine roots; few fine pores; strongly acid; clear wavy boundary.
C—51 to 70 inches; mottled very pale brown (10YR 7/4), light gray (10YR 7/1), and brownish yellow (10YR 6/6) loamy sand; massive; very friable; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction ranges from very strongly acid to medium acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 4 to 6, and chroma of 1 to 3. It is loamy sand, loamy fine sand, or fine sand.

The E horizon has hue of 10YR, value of 6 to 8, and chroma of 3 to 6. It is fine sand or loamy sand.

The Bt horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. It is mottled in shades of strong brown or yellowish brown. The Bt horizon is sandy loam or sandy clay loam.

The BC horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 8. It is mottled in shades of brown or gray. The BC horizon is loamy sand or sandy loam and has strata of sandy clay loam in some pedons.

The C horizon has hue of 10YR, value of 6 or 7, and chroma of 1 to 6, and is mottled in shades of brown or gray. It is sand or loamy sand. Some pedons have strata of sandy loam or sandy clay loam in the C horizon.

Lakeland Series

The Lakeland series consists of excessively drained, very rapidly permeable soils that formed in sandy Coastal Plain sediments on broad, smooth ridges and narrow, irregular slopes. Slope is dominantly less than 4 percent, but it ranges to as much as 6 percent along

drainageways. These soils are thermic, coated Typic Quartzipsamments.

Lakeland soils are geographically associated with the Blanton, Chisolm, Kenansville, Centenary, Echaw, Rutlege, Osier, Ogeechee, and Hobcaw soils. The Blanton, Chisolm, and Kenansville soils are on landscapes similar to those of the Lakeland soils and have a Bt horizon. The Centenary and Echaw soils are on slightly lower elevations and have a spodic horizon. The Rutlege, Osier, Ogeechee, and Hobcaw soils are on lower elevations and have a higher seasonal water table.

Typical pedon of Lakeland sand, 0 to 6 percent slopes, about 13 miles east of Conway, about 2 miles south of Shell on dirt road, 200 feet west of road, 1,200 feet west of Waccamaw River; Map 53:

A—0 to 8 inches; very dark grayish brown (10YR 3/2) sand; single grained; loose; common fine and medium roots; few clean grains of sand; strongly acid; clean wavy boundary.
Bw1—8 to 20 inches; yellowish brown (10YR 5/4) sand; single grained; loose; common fine and medium roots; few clean grains of sand; medium acid; gradual wavy boundary.
Bw2—20 to 50 inches; yellowish brown (10YR 5/6) sand; single grained; loose; few fine roots; few clean grains of sand; medium acid; gradual wavy boundary.
C—50 to 82 inches; very pale brown (10YR 7/3) sand; single grained; loose; many clean grains of sand; medium acid.

Thickness of the sand exceeds 80 inches. Reaction ranges from very strongly acid to medium acid throughout.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2.

The Bw horizon has hue of 10YR or 7.5YR, value of 5 to 7, and chroma of 4 to 8. Some pedons have few to common mottles in shades of brown.

The C horizon has hue of 10YR or 7.5YR, value of 5 to 7, and chroma of 3 or 4.

Leon Series

The Leon series consists of poorly drained, moderately rapidly permeable soils that formed in sandy Coastal Plain sediments on broad, nearly level areas and in slightly depressional areas. Slope is dominantly less than 1 percent, but it ranges up to 2 percent. These soils are sandy, siliceous, thermic Aeric Haplaquods.

Leon soils are geographically associated with the Lakeland, Centenary, Echaw, Witherbee, Blanton, and Lynn Haven soils. The Lakeland, Centenary, Echaw, Witherbee, and Blanton soils are on higher elevations and do not have as high a seasonal water table as the Leon soils. The Lynn Haven soils are on slightly lower elevations and have an umbric epipedon.

Typical pedon of Leon fine sand, about 800 feet northwest of Surfside Beach City Hall on paved road, about 200 feet southwest of road, 10 feet southeast of power line right-of-way; Map 90:

A—0 to 5 inches; black (10YR 2/1) fine sand; weak fine granular structure; very friable; many fine and medium roots; many clean sand grains give a salt-and-pepper appearance; very strongly acid; clear smooth boundary.
E—5 to 9 inches; light gray (10YR 6/1) fine sand; common medium distinct very dark gray (10YR 3/1) mottles along old root channels; weak fine granular structure; very friable; few fine and medium roots; very strongly acid; clear smooth boundary.
Bh1—9 to 14 inches; black (N 2/0) fine sand; weak medium suangular blocky structure; friable; weakly cemented; fine and medium roots; very strongly acid; clear wavy boundary.
Bh2—14 to 20 inches; dark brown (7.5YR 3/2) fine sand; common medium distinct very dark brown (10YR 2/2) mottles; weak medium subangular blocky structure; friable; weakly cemented; strongly acid; gradual wavy boundary.
E'2&Bh3—20 to 40 inches; mottled pale brown (10YR 6/3) and dark grayish brown (10YR 4/2) fine sand; few fine distinct yellowish brown (10YR 6/6) mottles; weak medium subangular blocky structure; very friable; medium acid; gradual wavy boundary.
B'h—40 to 72 inches; dark brown (7.5YR 4/2) fine sand; weak medium granular structure; very friable; medium acid.

Reaction in the upper part of the soil is very strongly acid or strongly acid, and reaction in the lower part ranges from strongly acid to medium acid. The soil is fine sand throughout.

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

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Mottles in varying shades of gray are in some pedons.

The Bh horizon has hue of 5YR to 10YR, or is neutral, value of 2 or 3, and chroma of 0 to 2. Mottles in varying shades of brown are in some pedons.

The E'2&Bh3 horizon is mottled in shades of brown and gray.

The B'h horizon has hue of 7.5YR or 10YR, value of 4, and chroma of 2. It may be mottled in varying shades of brown.

Lynchburg Series

The Lynchburg series consists of somewhat poorly drained, moderately permeable soils that formed in loamy Coastal Plain sediments on broad, nearly level areas on the higher landscapes in the county. Slope

ranges from 0 to 2 percent. These soils are fine-loamy, siliceous, thermic Aeric Paleaquults.

Lynchburg soils are geographically associated with the Suffolk, Emporia, Goldsboro, Woodington, and Coxville soils. The Suffolk, Emporia, and Goldsboro soils are on higher elevations than the Lynchburg soils and have a lower seasonal water table. The Woodington and Coxville soils are on lower elevation and have a higher seasonal water table.

Typical pedon of Lynchburg loamy sand, about 2.5 miles east of Floyds, north 1.0 mile, east 2.6 miles on South Carolina Secondary Highway 400, about 450 feet southeast on South Carolina Secondary Highway 142, 100 feet southwest of the road; Map 6:

Ap—0 to 8 inches; dark gray (10YR 4/1) loamy fine sand; weak medium granular structure; very friable; common fine roots; slightly acid; abrupt smooth boundary.

Bt—8 to 13 inches; brownish yellow (10YR 6/6) sandy clay loam; few medium distinct yellowish brown (10YR 5/8) and light brownish gray (10YR 6/2) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine holes and pores; small areas of old roots or wormholes filled with A horizon material; strongly acid; clear smooth boundary.

Btg—13 to 58 inches; mottled gray (10YR 6/1), brownish yellow (10YR 6/8), and red (2.5YR 4/8) sandy clay loam; moderate medium subangular blocky structure; friable; common distinct clay films on faces of peds; few fine roots; few fine holes and pores; very strongly acid; gradual wavy boundary.

BCg—58 to 80 inches; light gray (10YR 7/1) sandy clay loam that has thin strata of sandy clay, sandy loam, and loamy sand; common medium distinct brownish yellow (10YR 6/8) and few fine prominent red mottles; weak medium subangular blocky structure; firm; very strongly acid.

The thickness of the solum is more than 60 inches. The lower part of the solum is stratified. Reaction ranges from extremely acid to strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is loamy fine sand, loamy sand, or sandy loam.

The E horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 2 to 4. Mottles in shades of yellow and gray are in some pedons. The E horizon is loamy sand.

The BE horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. Mottles in shades of yellow and gray are in some pedons. The BE horizon is sandy loam.

The Bt horizon has hue of 10YR, value of 5 to 7, and chroma of 3 to 6. Some pedons contain few to many mottles that have chroma of 2 or less. In some pedons, the Bt horizon is mottled in shades of gray, yellow, and brown. The Bt horizon is sandy clay loam.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It contains few to many mottles in shades of yellow, brown, and red; or it is mottled in shades of gray, brown, and red. The Btg horizon is sandy clay loam.

The BCg horizon is mottled in shades of gray, brown, and red; or it is gray and has few to many mottles in shades of brown and red. The BCg horizon is sandy clay loam or sandy loam and has thin strata that range in texture from sandy loam to sand.

Lynn Haven Series

The Lynn Haven series consists of poorly drained, moderately rapidly permeable soils that formed in sandy Coastal Plain sediments on broad, nearly level areas and in slightly depressional areas throughout the county. Slope is dominantly less than 1 percent, but range up to 2 percent. These soils are sandy, siliceous, thermic Typic Haplaquods.

Lynn Haven soils are geographically associated with the Rimini, Witherbee, Leon, Pocomoke, and Rutlege soils. The Rimini and Witherbee soils are on higher elevations than the Lynn Haven soils, and the Leon soils are on similar landscapes. All of these soils have an ochric epipedon. The Pocomoke and Rutlege soils are on slightly lower elevations and do not have a Bh horizon.

Typical pedon of Lynn Haven sand, about 5.0 miles northwest of Myrtle Beach on U.S. Highway 501, about 1.7 miles southwest on International Paper Company dirt road (Joe Mill Trail), 50 feet south of road; Map 82:

A—0 to 10 inches; black (10YR 2/1) sand; single grained; loose; many fine and medium roots; few fine and medium holes; few fine and medium pores; very strongly acid; clear wavy boundary.

E—10 to 13 inches; gray (10YR 5/1) sand; single grained; loose; few fine roots; few fine holes; few fine and medium pores; strongly acid; abrupt wavy boundary.

Bh1—13 to 40 inches; very dark brown (10YR 2/2) sand; weak fine granular structure; friable; weakly cemented; few fine roots; strongly acid; gradual wavy boundary.

Bh2—40 to 52 inches; dark brown (10YR 3/3) sand; weak fine granular structure; friable; weakly cemented; few fine and medium roots; strongly acid; gradual wavy boundary.

Bh3—52 to 60 inches; very dark grayish brown (10YR 3/2) sand; weak fine granular structure; very friable; weakly cemented; few medium and large roots; very strongly acid; gradual wavy boundary.

Bh4—60 to 75 inches; black (10YR 2/1) sand; weak fine granular structure; friable; weakly cemented; few medium roots; very strongly acid.

The soil is sand or fine sand to a depth of 80 inches or more. It is very strongly acid or strongly acid throughout.

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

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. Mottles in varying shades of gray are in some pedons.

The Bh horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 4. Mottles in varying shades of gray are in some pedons.

Meggett Series

The Meggett series consists of poorly drained, slowly permeable soils that formed in clayey Coastal Plain sediments on broad and narrow flood plains throughout the county, but mostly in the lower part of the county. Slope is dominantly less than 1 percent. These soils are fine, mixed, thermic Typic Albaqualfs.

The Meggett soils in Horry County are a taxadjunct to the Meggett series because they have slightly less clay in the control section than is defined for the Meggett series. This difference does not significantly alter the use or behavior of the soils.

Meggett soils are geographically associated with the Eulonia, Wahee, Bladen, Ogeechee, Yonges, and Brookman soils. The Eulonia and Wahee soils are on higher elevations than the Meggett soils and are Ultisols. The Brookman, Bladen, Ogeechee, and Yonges soils are on similar landscapes. The Ogeechee and Yonges soils have a fine-loamy control section. The Bladen soils are Ultisols. The Brookman soils have an umbric epipedon.

Typical pedon of Meggett loam, about 4 miles west of Myrtle Beach, about 3 miles west along South Carolina Highway 707 from the intersection of U.S. Highway 501 and South Carolina Highway 707, about 0.5 mile north on dirt road, 500 feet east on dirt road parallel to the Intracoastal Waterway; Map 83:

A—0 to 4 inches; dark grayish brown (10YR 4/2) loam; weak fine subangular blocky structure; friable; common fine and medium roots; slightly acid; abrupt smooth boundary.

Btg1—4 to 16 inches; gray (10YR 5/1) clay loam; common medium distinct brownish yellow (10YR 6/6) mottles; moderate medium subangular blocky structure; very firm; many distinct clay films on faces of peds; few fine roots; few fine pores; few very fine nodules of calcium carbonate, neutral; gradual wavy boundary.

Btg2—16 to 26 inches; gray (10YR 5/1) clay loam; many medium distinct light gray (10YR 6/1) and few medium distinct yellowish brown (10YR 5/8) mottles; strong medium subangular blocky structure; very firm; many distinct clay films on faces of peds; few fine roots; few fine pores; few fine nodules of calcium carbonate; moderately alkaline; gradual wavy boundary.

Btg3—26 to 36 inches; gray (10YR 5/1) clay loam; few fine distinct yellowish brown (10YR 5/6) mottles; moderate medium subangular blocky structure; firm; few faint clay films on faces of peds; few fine roots; few fine pores; few very fine nodules of calcium carbonate; mildly alkaline; gradual wavy boundary.

BCg—36 to 46 inches; light gray (10YR 6/1) sandy loam; few medium distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; very friable; few fine and medium roots; few fine white specks of calcium carbonate; mildly alkaline; gradual wavy boundary.

2Cg—46 to 72 inches; light gray (10YR 7/1) sand; few medium distinct yellowish brown (10YR 5/4) mottles; single grained; loose; few very fine white specks of calcium carbonate; mildly alkaline.

The thickness of the solum ranges from 40 to more than 70 inches. Reaction ranges from very strongly acid to slightly acid in the A horizon and from slightly acid to moderately alkaline in the B horizon. In most pedons the B and C horizons contain few to many small fragments of marine shells or small nodules or specks of calcium carbonate.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It is loam, sandy loam, or fine sandy loam.

The E horizon, where present, has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It has none to common mottles in varying shades of brown. The E horizon is loam, sandy loam, or fine sandy loam.

The Btg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It has few to many mottles in shades of gray, yellow, brown, or red. The Btg horizon is clay or clay loam. Some pedons contain a few pockets of sand or have greenish gray coatings on faces of peds.

The BCg horizon has hue of 10YR and 2.5Y, value of 5 or 6, and chroma of 1 or 2. It has few or common mottles in shades of gray, brown, or red. Some pedons are mottled and do not have a dominant color. The BCg horizon is sandy loam, sandy clay loam, sandy clay, or clay.

The Cg or 2Cg horizon has hue of 10YR, 5G, or 5GY, value of 5 to 7, and chroma of 1. It has few to common mottles in shades of brown or gray. The Cg or 2Cg horizon ranges from sand to clay.

Nankin Series

The Nankin series consists of well drained, moderately slowly permeable soils that formed in loamy and clayey Coastal Plain marine sediments. These gently sloping

soils are on side slopes and rolling landscapes on the higher elevations, generally about 70 feet. Slope ranges from 2 to 6 percent. These soils are clayey, kaolinitic, thermic Typic Hapludults.

Nankin soils are geographically associated with the Duplin, Emporia, Suffolk, Norfolk, Goldsboro, Lynchburg, and Coxville soils. The Emporia, Suffolk, and Norfolk soils are on landscapes similar to those of the Nankin soils but they have a fine-loamy control section. The Duplin and Goldsboro soils are on slightly lower elevations and are aquic. The Lynchburg and Coxville soils are on lower elevations and are Aquults.

Typical pedon of Nankin fine sandy loam, 2 to 6 percent slopes, about 2 miles northwest from Green Sea on South Carolina Highway 9, northeast 0.6 mile on paved road, northwest 0.3 mile on dirt field road, 150 feet west of road, in a sloping cultivated field; Map 9:

Ap—0 to 4 inches; reddish brown (5YR 4/4) fine sandy loam; weak fine subangular blocky structure; friable; few fine roots; strongly acid; clear smooth boundary.

Bt1—4 to 22 inches; yellowish red (5YR 5/8) clay; moderate medium subangular blocky structure; firm; few fine roots; common distinct clay films on faces of peds; few fine pores; very strongly acid; clear wavy boundary.

Bt2—22 to 34 inches; strong brown (7.5YR 5/8) clay; common medium faint yellowish red (5YR 5.8) mottles; moderate medium subangular blocky structure; firm; common medium distinct clay films on faces of peds; very few fine pores; very strongly acid; clear wavy boundary.

Bt3—34 to 40 inches; yellowish red (5YR 5/8) clay; common medium faint strong brown (7.5YR 5/8) and few medium prominent red (10YR 5/8) and few fine distinct pale brown (10YR 6/3) mottles; moderate medium subangular blocky structure; firm; few fine irregular clay films on faces of peds; very strongly acid; clear wavy boundary.

BC—40 to 48 inches; strong brown (7.5YR 5/8) sandy clay loam; common medium prominent red (10YR 5/8) and few medium distinct pale brown (10YR 6/3) and gray (10YR 6/1) mottles; weak medium subangular blocky structure; friable, very strongly acid; gradual wavy boundary.

C—48 to 72 inches; mottled red (10YR 5/8) and strong brown (7.5YR 5/8) loamy sand; common medium distinct light gray (10YR 7/1) mottles; structureless; loose; very strongly acid.

The thickness of the solum ranges from 40 to 60 inches or more. Strata are in the lower part of some profiles. Reaction is very strongly acid or strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 5YR through 10YR, value of 3 to 5, and chroma of 2 to 5. Texture is loamy sand, sandy loam, or fine sandy loam.

The E horizon, where present, has hue of 10YR or 2.5Y, value of 4 to 6, and chroma of 2 to 4. It is sandy loam or loamy sand.

The upper part of the Bt horizon has hue of 2.5YR to 7.5YR, value of 4 to 6, and chroma of 6 to 8. Texture is sandy clay or clay. The lower part of the Bt horizon has hue of 5YR to 10YR, value of 4 to 6, and chroma of 6 or 8. The lower part of the Bt horizon has few to many mottles in shades of red, brown, and yellow, or it is mottled in these colors. It is sandy clay or clay.

The BC horizon has hue of 2.5YR to 10YR, value of 3 to 5, and chroma of 6 or 8, with few to common gray mottles, and common to many mottles of higher chroma, or it is mottled in these colors. Texture is sandy clay loam and has thin strata of loamy sand.

The C horizon is mottled in hue of 10R to 10YR, value of 3 to 7, and chroma of 1 to 8. It is loamy sand and has thin strata of sandy loam or sandy clay loam.

Nansemond Series

The Nansemond series consists of moderately well drained, rapidly permeable soils that formed in loamy Coastal Plain sediments on interstream divides and stream terraces, and adjacent to small natural drainageways on higher elevations. Slope ranges from 0 to 2 percent. These soils are coarse-loamy, siliceous, thermic Aquic Hapludults.

Nansemond soils are geographically associated with the Suffolk, Goldsboro, Echaw, Lynchburg, Woodington, and Pocomoke soils. The Suffolk soils are on higher elevations, and the Goldsboro and Echaw soils are on landscapes similar to those of the Nansemond soils. The Suffolk and Goldsboro soils have a fine-loamy control section, and the Echaw soils have a sandy control section. The Lynchburg soils are on slightly lower elevations and have a fine-loamy control section. The Woodington and Pocomoke soils are on lower elevations and are Aquults.

Typical pedon of Nansemond loamy fine sand, 0 to 2 percent slopes, about 3 miles east of Aynor, about 1,200 feet east of Midlands Elementary School on paved road, 200 feet south of the road; Map 25:

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

E—8 to 12 inches; light yellowish brown (10YR 6/4) loamy fine sand; weak fine granular structure; very friable; few fine roots; strongly acid; gradual smooth boundary.

Bt1—12 to 24 inches; yellowish brown (10YR 5/6) fine sandy loam; few medium distinct strong brown (7.5YR 5/6) mottles; weak medium subangular blocky structure; friable; slightly sticky, nonplastic;

common fine roots; few fine pores; strongly acid; gradual wavy boundary.

Bt2—24 to 32 inches; brownish yellow (10YR 6/6) fine sandy loam; common medium distinct pale brown (10YR 6/3) mottles; weak medium subangular blocky structure; friable; slightly sticky, nonplastic; few medium roots; strongly acid; gradual smooth boundary.

BC—32 to 54 inches; yellowish brown (10YR 5/4) loamy fine sand; common medium distinct light gray (10YR 7/1) mottles; single grained; loose; stratified; strongly acid; diffuse wavy boundary.

C—54 to 72 inches; mottled light gray (10YR 7/1) and yellow (10YR 7/6) loamy fine sand; single grained; stratified in orange and purple colors; strongly acid.

The thickness of the solum ranges from 46 to 60 inches. Many profiles have stratified color and texture in the lower part of the B horizon and in the C horizon. The soil ranges from extremely acid to strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 3 to 5, and chroma of 1 or 2. It is loamy sand or loamy fine sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 4. It is loamy fine sand.

The upper part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. In some places, it has few to common mottles in shades of brown and yellow. The lower part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 6, and few to common mottles in shades of gray, brown, and yellowish red. The Bt horizon is sandy loam or fine sandy loam.

The BC horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 to 6. It has few to many mottles in shades of gray, brown, and red; or it is mottled in gray, brown, and yellow. The BC horizon is stratified loamy sand, and fine sandy loam.

The C horizon has hue of 10YR, value of 5 to 7, and chroma of 2 or 3. It has few to many mottles in shades of gray and yellow, or it is mottled in shades of gray, yellow, and brown. The C horizon is stratified loamy sand, sand, fine sand, and loamy fine sand.

Newhan Series

The Newhan series consists of excessively drained, very rapidly permeable soils that formed in thick, sandy Coastal Plain sediments adjacent to beaches along the coast on nearly level to gently sloping, undulating dunes. Slope ranges from 0 to 6 percent. These soils are thermic, uncoated Typic Quartzipsamments.

Newhan soils are geographically associated with the Lakeland, Centenary, Leon, and Bohicket soils. The Lakeland and Centenary soils are on landscapes that are parallel to the Newhan soils but further inland from the ocean. The Lakeland soils contain more fines in the control section than the Newhan soils. The Centenary and Leon soils have a spodic horizon. The Bohicket soils are in tidal marsh areas and are Sulfaquents.

Typical pedon of Newhan fine sand, 0 to 6 percent slopes, about 0.2 mile southwest of Garden City Beach fishing pier on Main Street, 200 feet northwest of street; Map 92:

A—0 to 7 inches; light brownish gray (10YR 6/2) fine sand; single grained; loose; few fine roots; common small fragments of colored marine shells; common very fine black material; mildly alkaline; clear wavy boundary.

C1—7 to 26 inches; pale yellow (2.5Y 7/4) fine sand; common medium distinct light gray (10YR 7/2) mottles; single grained; loose; few fine roots; few small fragments of colored marine shells; common very fine black mineral; mildly alkaline; gradual wavy boundary.

C2—26 to 54 inches; very pale brown 10YR 7/3) fine sand; single grained; loose; common very fine black mineral; mildly alkaline; gradual wavy boundary.

C3—54 to 80 inches; white (10YR 8/2) fine sand; single grained; loose; common very fine black mineral; mildly alkaline.

The thickness of the A and C horizon is more than 72 inches. The content of silt plus clay is less than 5 percent. The soil is neutral or mildly alkaline. Calcareous fragments of marine shell are present in most pedons. The soil contains few to common very fine grains of dark minerals.

The A horizon has hue of 10YR, value of 5 or 6, and chroma of 2 or 3. It is fine sand or sand.

The C horizon has hue of 10YR to 5Y, value of 5 to 8, and chroma of 1 to 4. It is fine sand or sand.

Norfolk Series

The Norfolk series consists of well drained, moderately permeable soils that formed in loamy Coastal Plain sediments on uplands on the higher elevations. Slope ranges from 0 to 2 percent. These soils are fine-loamy, siliceous, thermic Typic Paleudults.

Norfolk soils are geographically associated with the Nankin, Suffolk, Goldsboro, Lynchburg, Coxville, and Woodington soils. The Nankin and Suffolk soils are on landscapes similar to those of the Norfolk soils and are Hapludults. The Nankin soils have a clayey control section. The Goldsboro and Lynchburg soils are on slightly lower elevations. The Goldsboro soils are aquic. The Lynchburg, Coxville, and Woodington soils are on lower elevations and are Aquults.

Typical pedon of Norfolk loamy fine sand, 0 to 2 percent slope, about 1.5 miles northwest from Floyds on South Carolina Highway 9, northeast 0.2 mile on dirt road, 75 feet north of road, in a cultivated field; Map 5:

Ap—0 to 13 inches; brown (10YR 5/3) loamy fine sand; weak fine granular structure; very friable; few fine roots; medium acid; clear wavy boundary.
E—13 to 16 inches; light yellowish brown (10YR 6/4) loamy sand; weak fine granular structure; very friable; few fine roots; common holes filled with Ap material; medium acid; clear wavy boundary.
Bt1—16 to 39 inches; yellowish bown (10YR 5/6) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine holes and pores; strongly acid; gradual wavy boundary.
Bt2—39 to 46 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine holes and pores; very strongly acid; gradual wavy boundary.
BC1—46 to 56 inches; yellowish brown (10YR 5/6) sandy clay loam that has thin strata of clay loam and sandy loam; common medium distinct gray (10YR 6/1) and common medium prominent yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; very strongly acid; gradual wavy boundary.
BC2—56 to 61 inches; mottled yellowish brown (10YR 5/6), gray (10YR 6/1), and red (2.5YR 4/6) sandy clay that has thin strata of sandy loam and sandy clay loam; weak coarse subangular blocky structure; firm; very strongly acid; gradual wavy boundary.
BC3—61 to 75 inches; mottled red (2.5YR 4/6), yellowish brown (10YR 5/8) and gray (10YR 6/1) clay loam that has strata of sandy loam and sandy clay loam; weak coarse subangular blocky structure; firm; very strongly acid.

The thickness of the solum is more than 60 inches. The lower part of the solum is stratified. Reaction is very strongly acid or strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is loamy sand or loamy fine sand.

The E horizon has hue of 10YR, value of 6 or 7, and chroma of 3 or 4. It is loamy sand or loamy fine sand.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 6 or 8. It has mottles in shades of red and gray in the lower part. The Bt horizon is sandy clay loam or clay loam.

The BC horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. It has few to common mottles in shades of gray and red, or it is mottled in shades of red, gray, brown, and yellow. The BC horizon is sandy clay loam, clay loam, sandy clay, or clay. Strata of sandy loam and sandy clay loam are in some pedons.

Ogeechee Series

The Ogeechee series consists of poorly drained, rapidly permeable soils that formed in loamy Coastal Plain sediments on broad, nearly level areas and in slight depressional areas. Slope is dominantly less than 1 percent, but ranges to 2 percent along drainageways. These soils are fine-loamy, siliceous, thermic Typic Ochraquults.

Ogeechee soils are geographically associated with the Yauhannah, Wahee, Yemassee, Yonges, and Bladen soils. The Yauhannah soils are on higher elevations than the Ogeechee soils and are Uduults. The Wahee and Yemassee soils are on slightly higher elevations and in some places have a Bt horizon that is not dominantly gray. The Yonges and Bladen soils are on landscapes similar to those of the Ogeechee soils. The Bladen soils have a clayey control section, and the Yonges soils are Alfisols.

Typical pedon of Ogeechee loamy fine sand, about 2.0 miles southeast of Socastee on South Carolina Secondary Highway 375, about 0.7 mile southwest of highway, 100 feet northwest of private air strip; Map 87:

A—0 to 5 inches; black (10YR 2/1) loamy fine sand; weak fine granular structure; very friable; few to large roots; few clean grains of sand; strongly acid; clear smooth boundary.
E—5 to 10 inches; grayish brown (10YR 5/2) loamy fine sand; common medium distinct light gray (10YR 7/1) and few medium distinct light yellowish brown (10YR 6/4) mottles; weak fine granular structure; very friable; common fine and medium roots; very strongly acid; clear smooth boundary.
Btg1—10 to 30 inches; gray (10YR 5/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; common fine and medium roots; few fine pores; few fine flakes of mica; very strongly acid; gradual wavy boundary.
Btg2—30 to 54 inches; gray (10YR 5/1) sandy clay loam; common medium distinct brownish yellow (10YR 6/8), few medium distinct light gray (10YR 7/1), few medium distinct dark gray (10YR 4/1) mottles; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine pores; few fine flakes of mica; few pockets and lenses of clean sand; very strongly acid; gradual wavy boundary.
BCg—54 to 60 inches; mottled dark gray (10YR 4/1) and light gray (10YR 7/1) sandy loam; common medium distinct yellowish brown (10YR 5/8) mottles; weak medium granular structure; friable; few lenses of sandy clay loam; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg—60 to 72 inches; light gray (10YR 6/1) loamy sand; few medium distinct brownish yellow (10YR 6/8) and common medium distinct dark gray (10YR 4/1) mottles; very friable; few fine flakes of mica; very strongly acid; gradual wavy boundary.

The thickness of the solum ranges from 50 to more than 70 inches. Reaction is very strongly acid or strongly acid throughout, except in areas where the soil has been limed. Few to many fine flakes of mica are present in the lower part of the B horizon and in the C horizon of most pedons.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1. It is sandy loam, loamy sand, or loamy fine sand.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Some pedons have few to common mottles in shades of gray and brown. The E horizon is sandy loam, loamy sand, or loamy fine sand.

The BE horizon, where present, has hue of 10YR, value of 4 or 5, and chroma of 1. It is sandy loam.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It has few to many mottles in varying shades of gray, brown, yellow, and red. In some pedons, it is coarsely mottled in shades of gray, brown, and red. The Btg horizon is sandy clay loam or clay loam.

The BCg horizon has hue of 10YR, value of 4 to 7, and chroma of 1, and has few to many mottles in varying shades of gray, brown, and red. Some pedons are coarsely mottled in shades of gray, brown, and red. The BCg horizon is sandy loam to sandy clay. Pockets and strata of contrasting textures are in most pedons.

The Cg horizon has hue of 10YR to 5Y, value of 5 to 8, and chroma of 1, and has few to many mottles in shades of brown, red, and gray. Some pedons are coarsely mottled in varying shades of brown, red, and gray. The Cg horizon is fine sandy loam, loamy sand, sand, sandy clay loam, or sandy clay.

Osier Series

The Osier series consists of poorly drained, rapidly permeable soils that formed in sandy Coastal Plain sediments on flood plains, in depressions, and on stream terraces throughout the county. Slope ranges from 0 to 2 percent. These soils are siliceous, thermic Typic Psammaquents.

Osier soils are geographically associated with the Blanton, Kenansville, Rutlege, and Woodington soils. The Blanton and Kenansville soils are on higher elevations than the Osier soils and are Ultisols. The Rutlege soils are on slightly lower elevations and are Humaquepts. The Woodington soils are on similar landscapes and have a fine-loamy control section.

Typical pedon of Osier loamy sand, about 5 miles southwest of Loris, about 2 miles south of Allsbrook on South Carolina Secondary Highway 139, about 1,500 feet east on dirt road, 100 feet north of road, in woods; Map 36:

A—0 to 8 inches; very dark gray (10YR 3/1) loamy sand; weak fine granular structure; very friable; many fine and medium roots and a few large roots; few fine pores; very strongly acid; clear smooth boundary.

Cg1—8 to 21 inches; grayish brown (10YR 5/2) loamy sand; weak fine granular structure; very friable; few medium and common fine roots; medium acid; gradual wavy boundary.

Cg2—21 to 48 inches; light brownish gray (10YR 6/2) sand; common medium distinct yellowish brown (10YR 5/6) mottles; single grained; loose; few fine roots; medium acid; gradual wavy boundary.

Cg3—48 to 65 inches; very dark grayish brown (10YR 3/2) sand; weak fine granular structure; very friable; medium acid.

Reaction ranges from very strongly acid to medium acid throughout.

The A horizon has hue of 10YR, value of 2 to 4, and chroma of 1 or 2. It ranges from fine sandy loam to sand.

The Cg horizon has hue of 10YR, value of 3 to 8, and chroma of 1 or 2. Most pedons have mottles in shades of brown and gray. The Cg horizon is sand, loamy sand, or loamy fine sand.

Pocomoke Series

The Pocomoke series consists of very poorly drained, moderately rapidly permeable soils that formed in sandy Coastal Plain sediments in small drainageways, in shallow depressions, and on flats throughout the county. Slope is dominantly less than 1 percent. These soils are coarse-loamy, siliceous, thermic Typic Umbraquults.

Pocomoke soils are geographically associated with the Osier, Woodington, and Rutlege soils. The Woodington soils are on slightly higher elevations than the Pocomoke soils and do not have an umbric epipedon. The Osier and Rutlege soils are on similar landscapes. The Rutlege and Osier soils have a sandy control section.

Typical pedon of Pocomoke fine sandy loam, about 3 miles northeast of Nixonville on South Carolina Primary Highway 90, 50 feet north of the highway, in woods; Map 63:

A—0 to 11 inches; black (10YR 2/1) fine sandy loam; weak fine granular structure; very friable; common fine and medium roots; very strongly acid; clear wavy boundary.

E—11 to 16 inches; mottled gray (10YR 6/1) and dark grayish brown (10YR 4/2) loamy sand; weak fine granular structure; very friable; few fine and medium roots; few fine pores; very strongly acid; gradual smooth boundary.

Btg—16 to 36 inches; very dark grayish brown (10YR 3/2) sandy loam; weak fine subangular blocky structure; friable; few fine roots; few fine pores; very strongly acid; clear wavy boundary.
Cg—36 to 54 inches; grayish brown (10YR 5/2) loamy sand; common medium distinct gray (10YR 6/1) mottles; massive; very friable; few fine and medium roots; few pores; very strongly acid; gradual wavy boundary.
2Cg—54 to 72 inches; light brownish gray (10YR 6/2) sandy clay loam that has strata of coarser material; massive; friable; few fine and medium roots; strongly acid.

The thickness of the solum ranges from 22 to 40 inches. Reaction is extremely acid to strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1 or 2. It is fine sandy loam, sandy loam, or loam.

The E horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2. It is sandy loam or loamy sand.

The Btg horizon has hue of 10YR, value of 3 to 6, and chroma of 1 or 2. It is sandy loam.

The Cg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Few or common mottles in shades of brown to gray are present. The Cg horizon is loamy sand or sand.

The 2Cg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2. It has strata that range from sandy clay loam to sand.

Rimini Series

The Rimini series consists of excessively drained, moderately permeable soils that formed in thick beds of sandy Coastal Plain sediments. These soils are on rims around Carolina Bays throughout the county and on narrow, smooth divides along the Little Pee Dee River and the Waccamaw River. Slope is dominantly less than 3 percent, but it ranges to 6 percent along the edge of bays. These soils are sandy, siliceous, thermic Grossarenic Entic Haplohumods.

Rimini soils are geographically associated with the Lakeland, Leon, Lynn Haven, Paxville, Echaw, Witherbee, Centenary, and Rutlege soils. The Lakeland soils are on higher elevations than the Rimini soils and do not have a spodic horizon. The Lynn Haven, Paxville, and Rutlege soils are on lower elevations and have an umbric epipedon. The Leon, Echaw, Witherbee, and Centenary soils are on lower elevations and have a higher seasonal water table.

Typical pedon of Rimini sand, 0 to 6 percent slopes, about 1.5 miles west of Wampee on South Carolina Primary Highway 90, about 2.8 miles south on dirt road, 150 feet east of road; Map 64:

A—0 to 4 inches; dark gray (10YR 4/1) sand; many uncoated white grains of sand; salt-and-pepper appearance; single grained; loose; few medium and many fine roots; strongly acid; gradual wavy boundary.
E1—4 to 34 inches; white (N 8/0) sand; single grained; loose; uncoated grains of sand; common medium roots; very strongly acid; gradual smooth boundary.
E2—34 to 65 inches; light gray (10YR 7/1) sand; single grained; loose; uncoated grains of sand; very strongly acid; abrupt wavy boundary.
Bh—65 to 72 inches; dark reddish brown (5YR 2/2) sand; weak fine granular structure; friable; slightly brittle and weakly cemented; most grains of sand coated with organic matter; very strongly acid.

Reaction is extremely acid to strongly acid throughout.

The A horizon has hue of 10YR, value of 3 or 7, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 7 or 8, and chroma of 1 or 2, or it is neutral and has value of 7 or 8.

The Bh horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 or 2.

Rutlege Series

The Rutlege series consists of very poorly drained, rapidly permeable soils that formed in sandy Coastal Plain sediments in small drainageways, shallow depressions, and oval bays and on flood plains along streams throughout the county. Slope is dominantly less than 1 percent. These soils are sandy, siliceous, thermic Typic Humaquepts.

Rutlege soils are geographically associated with the Osier, Lynn Haven, Woodington, Johnston, Centenary, Lakeland, and Pocomoke soils. The Lakeland soils are on higher elevations than the Rutlege soils. The Osier, Centenary, and Woodington soils are on slightly higher elevations. The Johnston, Lynn Haven, and Pocomoke soils are on similar landscapes. The Lakeland soils are Quartzipsamments. The Johnston soils have a black A horizon more than 24 inches thick, and the Lynn Haven and Centenary soils have a spodic horizon. The Woodington and Pocomoke soils have an argillic horizon.

Typical pedon of Rutlege loamy sand, about 0.7 mile northeast of Allsbrook on U.S. Highway 701, about 800 feet north on dirt road, across Seaboard Coastline Railroad, 200 feet west of road; Map 28:

A—0 to 12 inches; black (10YR 2/1) loamy sand; weak medium granular structure; very friable; common fine and medium roots; very strongly acid; abrupt smooth boundary.
Cg1—12 to 20 inches; dark gray (10YR 4/1) sand; commn medium faint gray (10YR 6/1) mottles; few clean sand grains; very strongly acid; clear wavy boundary.

Cg2—20 to 35 inches; gray (10YR 5/1) sand; single grained; loose; very strongly acid; gradual wavy boundary.
Cg3—35 to 72 inches; dark grayish brown (10YR 4/2) sand; few medium distinct gray (10YR 6/1) mottles; single grained; loose; very strongly acid.

Reaction is extremely acid to strongly acid throughout.

The A horizon has hue of 10YR, value of 2 or 3, and chroma of 1. It is loamy sand or sand.

The Cg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. Mottles in shades of brown and gray are in some pedons. The Cg horizon is sand.

Suffolk Series

The Suffolk series consists of well drained, moderately permeable soils that formed in loamy Coastal Plain sediments on uplands on the higher elevations. Slope ranges from 0 to 6 percent. These soils are fine-loamy, siliceous, thermic Typic Hapludults.

The Suffolk soils in Horry County are a taxadjunct to the Suffolk series because they have a thicker solum and loamy texture in the BC and C horizons than is defined for the Suffolk series. These differences do not significantly alter the use or behavior of the soils.

Suffolk soils are geographically associated with the Goldsboro, Lynchburg, Kenansville, Blanton, and Norfolk soils. The Goldsboro and Lynchburg soils are on slightly lower elevations than the Suffolk soils and have a higher seasonal water table. The Kenansville, Blanton, and Norfolk soils are on similar landscapes. The Kenansville and Blanton soils have a sandy surface horizon more than 20 inches thick. The Norfolk soils are Paleudults.

Typical pedon of Suffolk loamy sand, 0 to 2 percent slopes, about 0.7 mile south of Loris, about 0.4 mile south on South Carolina Secondary Highway 31 (Daisy Road), 700 feet east on dirt road, 100 feet south of road, in a cultivated field; Map 21:

Ap—0 to 8 inches; grayish brown (10YR 5/2) loamy fine sand; weak fine granular structure; very friable; common fine roots; slightly acid; clear smooth boundary.
E—8 to 14 inches; light yellowish brown (10YR 6/4) loamy fine sand; weak fine granular structure; very friable; common fine roots; common holes filled with Ap material; slightly acid; clear smooth boundary.
Bt—14 to 44 inches; yellowish brown (10YR 5/8) sandy clay loam; weak medium subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few very fine pores; strongly acid; gradual wavy boundary.
BC—44 to 56 inches; brownish yellow (10YR 6/8) sandy clay loam that has thin strata of clean sand; few medium prominent yellowish red (5YR 5/8) and few medium faint pale brown (10YR 6/3) mottles; weak medium granular structure; very friable; strongly acid; gradual wavy boundary.
C—56 to 72 inches; brownish yellow (10YR 6/8) sandy loam that has thin strata of clean sand; common medium prominent yellowish red (5YR 5/8) and few medium distinct very pale brown (10YR 7/3) mottles; massive; very friable; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. In most pedons, strata are in the lower part of the solum and in the C horizon. Reaction is very strongly acid or strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 4 or 5, and chroma of 2 or 3. It is fine sandy loam, loamy fine sand, or loamy sand.

The E horizon has hue of 10YR, value of 6, and chroma of 3 to 6. It is loamy fine sand or loamy sand.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 6 or 8. Mottles in shades of brown and red are in some pedons. The Bt horizon is sandy clay loam or sandy loam.

The C horizon has hue of 7.5YR or 10YR, value of 5 or 6, and chroma of 6 or 8. Mottles in shades of brown and red are in some pedons, or this horizon may be mottled in shades of brown. The C horizon is sandy clay loam, sandy loam, or loamy sand and is stratified with sand.

Summerton Series

The Summerton series consists of well drained, slowly permeable soils that formed in clayey Coastal Plain sediments on uplands on the higher elevations. Slope ranges from 0 to 2 percent. These soils are clayey, kaolinitic, thermic Typic Paleudults.

The Summerton soils in Horry County are a taxadjunct to the Summerton series because they have slightly less clay in the upper part of the Bt horizon and are less red in the Bt horizon than is typical for the Summerton series. These differences do not significantly alter the use or behavior of the soils.

Summerton soils are geographically associated with the Emporia, Suffolk, Duplin, Goldsboro, Lynchburg, and Coxville soils. The Emporia and Suffolk soils are on landscapes similar to those of the Summerton soils. They have a fine-loamy control section. The Duplin and Goldsboro soils are on slightly lower elevations and are aquic. The Lynchburg and Coxville soils are on lower elevations and are Aquults.

Typical pedon of Summerton fine sandy loam, 0 to 2 percent slopes, about 3.7 miles west of Finkleas Crossroads along South Carolina Highway 917, about 450 feet north on County Road 59, about 50 feet east of road, in a cultivated field; Map 13:

Ap—0 to 6 inches; yellowish brown (10YR 5/4) fine sandy loam; weak fine granular structure; very friable; many fine roots; very strongly acid; gradual irregular boundary.
Bt1—6 to 12 inches; yellowish brown (10YR 5/6) sandy clay loam; moderate medium subangular blocky structure; friable; common fine roots; few fine holes; old root channels filled with Ap material; extremely acid; gradual wavy boundary.
Bt2—12 to 26 inches; strong brown (7.5YR 5/8) clay; few fine distinct yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; firm; few faint clay films on ped faces and along old root channels; common fine roots; few fine holes; extremely acid; clear smooth boundary.
Bt3—26 to 37 inches; strong brown (7.5YR 5/8) clay; common medium distinct yellowish red (5YR 5/6) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on ped faces; few fine roots; extremely acid; gradual wavy boundary.
Bt4—37 to 61 inches; brownish yellow (10YR 6/8) clay; common medium distinct light gray (10YR 7/2) and strong brown (7.5YR 5/8) mottles, common medium prominent red (2.5YR 4/6) and few medium prominent weak red (10YR 4/4) mottles; moderate medium subangular blocky structure; firm; common distinct clay films on ped faces; very strongly acid.

The thickness of the solum is more than 60 inches and has strata in the lower horizons. Reaction is extremely acid to strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is loamy sand, sandy loam, or fine sandy loam.

The E horizon, where present, has hue of 10YR, value of 6, and chroma of 4. It is loamy sand.

The upper part of the Bt horizon has hue of 5YR to 10YR, value of 5 or 6, and chroma of 6 or 8. Some pedons are mottled in shades of red, brown, and yellow. The upper part of the Bt horizon is mostly sandy clay or clay. The lower part of the Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 6 or 8 and is mottled in shades of red, brown, yellow, and gray. The lower part of the Bt horizon is sandy clay loam to clay and has strata of sandy clay loam or sandy loam.

Wahee Series

The Wahee series consists of somewhat poorly drained, slowly permeable soils that formed in clayey Coastal Plain sediments on broad terraces and in shallow depressions on the lower elevations in the county. Slope ranges from 0 to 2 percent. These soils are clayey, mixed, thermic Aeric Ochraquults.

Wahee soils are geographically associated with the Eulonia, Bladen, Meggett, Yemassee, and Ogeechee soils. The Eulonia soils are on slightly higher elevations than the Wahee soils and are Udults. The Bladen, Ogeechee, and Meggett soils are on lower elevations and have a higher seasonal water table. The Yemassee soils are on similar landscapes and have a fine-loamy control section.

Typical pedon of Wahee fine sandy loam, about 4 miles northwest of Myrtle Beach, on U.S. Highway 501 about 1.8 miles southwest on South Carolina Secondary Highway 992, 135 feet southeast of the highway; Map 82:

A—0 to 7 inches; dark gray (10YR 4/1) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; few fine pores; medium acid; clear smooth boundary.
E—7 to 11 inches; pale brown (10YR 6/3) loam; few fine faint light brownish gray mottles; weak medium subangular blocky structure; friable; common fine and medium roots; few fine pores; strongly acid; clear smooth boundary.
Bt—11 to 15 inches; brown (10YR 5/3) clay loam; few fine distinct yellowish red (5YR 5/8) and few fine faint light brownish gray mottles; moderate medium subangular blocky structure; firm; few distinct clay films on faces of peds; common fine roots and few medium roots; few fine pores; strongly acid; clear wavy boundary.
Btg1—15 to 30 inches; grayish brown (2.5Y 5/2) clay loam; common medium distinct reddish yellow (7.5YR 6/8) and few medium prominent red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; firm; few distinct clay films on faces of peds; common fine roots and few medium roots; few fine pores; strongly acid; gradual wavy boundary.
Btg2—30 to 46 inches; gray (10YR 6/1) clay loam; many medium distinct strong brown (7.5YR 5/8) and common medium prominent red (2.5YR 4/6) mottles; moderate medium subangular blocky structure; firm; few distinct clay films on faces of peds; few fine roots; few fine pores; few flakes of mica; very strongly acid; clear wavy boundary.
Btg3—46 to 56 inches; gray (5Y 6/1) sandy clay; common medium distinct brownish yellow (10YR 6/8) and few fine prominent red (2.5YR 5/6) mottles; moderate medium subangular blocky structure; firm; few distinct clay films on faces of peds; few fine roots; few fine pores; few flakes of mica; very strongly acid; gradual wavy boundary.
BCg—56 to 65 inches; mottled light gray (5Y 7/1) and brownish yellow (10YR 6/8) sandy clay loam; few medium faint yellowish brown and few medium distinct yellowish red (5YR 5/8) mottles; weak medium subangular blocky structure; friable; few fine pores; very strongly acid.

The thickness of the solum ranges from 40 to more than 65 inches. Reaction is extremely acid to strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is sandy loam, fine sandy loam, or loam.

The E horizon has hue of 10YR, value of 6, and chroma of 3 or 4. It has mottles in shades of gray. The E horizon is sandy loam or loam.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 3 to 8. It has mottles in shades of gray, yellow, red, and brown, or it is mixed in shades of gray and brown. The Bt horizon is clay loam or clay.

The Btg horizon has hue of 10YR to 5Y, value of 5 to 7, and chroma of 1 or 2. It has mottles in shades of yellow, brown, or red. The Btg horizon is clay loam, clay, or sandy clay.

The BCg horizon has hue of 10YR, value of 7, and chroma of 1 or 2, or it is mottled in shades of gray, yellow, brown, or red. It is sandy clay loam or clay loam. Some pedons have strata of sandy loam and clay.

Witherbee Series

The Witherbee series consists of somewhat poorly drained, rapidly permeable soils that formed in sandy Coastal Plain sediments on broad interstream divides and flats throughout the county. Slope ranges from 0 to 2 percent. These soils are sandy, siliceous, thermic Entic Haplaquods.

Witherbee soils are geographically associated with the Leon, Lynn Haven, Rutlege, Centenary, Rimini, and Echaw soils. The Leon, Lynn Haven, and Rutlege soils are on lower elevations than the Witherbee soils and have a higher seasonal water table. The Centenary, Rimini, and Echaw soils are on higher elevations and have a lower seasonal water table.

Typical pedon of Witherbee sand, about 1.8 miles southwest of Nixonville on South Carolina Primary Highway 90, about 0.5 mile southeast on International Paper Company dirt road, 150 feet west of the road; Map 71:

A—0 to 5 inches; very dark gray (10YR 3/1) sand; weak fine granular structure; very friable; common fine and medium roots; strongly acid; clear smooth boundary.

E1—5 to 16 inches; yellowish brown (10YR 5/4) sand; weak fine granular structure; very friable; few fine and medium roots; very strongly acid; clear wavy boundary.

E2—16 to 22 inches; yellowish brown (10YR 5/4) sand; common medium distinct dark grayish brown (10YR 4/2) and few fine distinct light gray mottles; weak fine granular structure; very friable; few fine roots; strongly acid; gradual wavy boundary.

Bh1—22 to 40 inches; dark reddish brown (5YR 3/2) sand; weak fine granular structure; very friable; weakly cemented and slightly brittle; strongly acid; diffuse wavy boundary.

Bh2—40 to 80 inches; very dark brown (10YR 2/2) sand; weak fine granular structure; very friable; weakly cemented and slightly brittle; strongly acid.

Texture of these soils is sand to a depth of 80 inches or more. Reaction ranges from very strongly acid to slightly acid throughout.

The A or Ap horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 2 to 6. Mottles in shades of gray, brown, and red may be present.

The Bh horizon has hue of 5YR to 10YR, value of 2 or 3, and chroma of 1 to 4. Mottles in shades of gray and brown may be present.

Woodington Series

The Woodington series consists of poorly drained, moderately permeable soils that formed in loamy Coastal Plain sediments on stream terraces and upland flats on the higher elevations. Slope ranges from 0 to 1 percent. These soils are coarse-loamy, siliceous, thermic Typic Paleaquults.

The Woodington soils in Horry County are a taxadjunct to the Woodington series because they are Ochraquults. This difference does not significantly alter the use, management, and behavior of these soils.

Woodington soils are geographically associated with the Goldsboro, Lynchburg, Pocomoke, Osier, and Coxville soils. The Goldsboro and Lynchburg soils are on slightly higher elevations than the Woodington soils and have a lower seasonal water table. The Pocomoke soils are on lower elevations and have an umbric epipedon. The Coxville soils are on similar landscapes and have a clayey control section. The Osier soils are on similar landscapes and have less than 15 percent clay in the control section.

Typical pedon of Woodington fine sandy loam, about 3 miles northwest of Green Sea, about 1.8 miles west from Green Sea along South Carolina Highway 9, about 2 miles north on South Carolina Highway 142, about 600 feet east on South Carolina Secondary Highway 306, and about 1,000 feet southeast on dirt road, 500 feet west of road; Map 9:

A—0 to 7 inches; very dark gray (10YR 3/1) fine sandy loam; weak fine granular structure; very friable; many fine and medium roots; few fine pores; strongly acid; clear wavy boundary.

E—7 to 14 inches; light gray (10YR 7/1) fne sandy loam; few medium distinct yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure;

very friable; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Btg1—14 to 31 inches; light gray (10YR 7/1) sandy loam; common medium distinct yellowish brown (10YR 5/8) and few fine prominent red mottles; weak fine subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Btg2—31 to 47 inches; light gray (10YR 7/1) sandy clay loam with thin strata of sandy loam; many coarse distinct yellowish brown (10YR 5/8) and common medium prominent red (2.5YR 5/8) mottles; weak fine subangular blocky structure; friable; few faint clay films on faces of peds; few fine roots; strongly acid; gradual wavy boundary.

BCg—47 to 58 inches; light gray (10YR 7/1) stratified sandy clay loam and clay loam; many coarse distinct yellowish brown (10YR 5/8) and common coarse prominent red (2.5YR 4/8) mottles; weak medium subangular blocky structure; friable; few fine roots; strongly acid; gradual wavy boundary.

Cg—58 to 84 inches; mottled light gray (10YR 7/1), gray (10YR 5/1), yellowish brown (10YR 5/6), and red (2.5YR 4/8) stratified sandy clay loam and sandy loam; massive; friable; few fine roots; strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout, except in areas where the soil has been limed.

The A horizon has hue of 10YR, value of or 3, and chroma of 1 or 2. It is sandy loam or fine sandy loam.

The E horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Some pedons have few mottles in shades of brown. The E horizon is sandy loam or fine sandy loam.

The Btg horizon has hue of 10YR, value of 5 to 7, and chroma of 1 or 2. Mottles in shades of brown, yellow, and red are in most pedons. The Btg horizon is sandy loam in the upper part and ranges to sandy clay loam in the lower part. In most pedons, the lower part of the Btg horizon is stratified.

The BCg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It has mottles in shades of brown, yellow, and red, or it is mottled in shades of gray, brown, yellow, and red. The BCg horizon is dominantly sandy, but it has stratified layers ranging from sandy to clayey.

The Cg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2. It has mottles in shades of yellow and red, or it is mottled in shades of gray, brown, yellow, and red. The Cg horizon has strata that range from sandy to clayey.

Yauhannah Series

The Yauhannah series consists of moderately well drained, moderately permeable soils that formed in loamy Coastal Plain sediments on broad interstream divides on the lower elevations in the county. Slope is dominantly less than 1 percent, but it ranges up to 2 percent. These soils are fine-loamy, siliceous, thermic Aquic Hapludults.

Yauhannah soils are geographically associated with the Chisolm, Blanton, Eulonia, Yemassee, Bladen, Ogeechee, and Hobcaw soils. The Chisolm and Blanton soils are on higher elevations than the Yauhannah soils and have thicker horizons. The Eulonia and Yemassee soils are on similar landscapes. The Eulonia soils have a clayey control section, and the Yemassee soils are Aquults. The Bladen, Ogeechee, and Hobcaw soils are on lower elevations and are Aquults.

Typical pedon of Yauhannah fine sandy loam, 0 to 2 percent slopes, about 3.2 miles northwest of Little River on South Carolina Secondary Highway 111 to Brooksville, about 500 feet northwest of Brooksville on South Carolina Secondary 111, 300 feet southwest of highway; Map 48:

Ap—0 to 8 inches; brown (10YR 4/3) fine sandy loam; weak medium subangular structure; very friable; few fine and medium roots; slightly acid; clear smooth boundary.

Bt1—8 to 16 inches; yellowish brown (10YR 5/6) sandy clay lam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; few fine pores; few pockets of dark grayish brown (10YR 4/2) Ap material; strongly acid; gradual wavy boundary.

Bt2—16 to 23 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent red (2.5YR 4/6), and common medium distinct light yellowish brown (10YR 6/4) mottles; few distinct clay films on faces of peds; few fine roots; few fine pores; few streaks of dark grayish brown (10YR 4/2) material; strongly acid; gradual wavy boundary.

Bt3—23 to 31 inches; yellowish brown (10YR 5/6) sandy clay loam; common medium prominent red (2.5YR 4/6), and common medium distinct light gray (10YR 7/1) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; few fine pores; strongly acid; gradual wavy boundary.

Bt4—31 to 40 inches; mottled yellowish brown (10YR 5/6), light gray (10YR 7/1), and red (2.5YR 4/6) sandy clay loam; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; very strongly acid; gradual wavy boundary.

BC—40 to 48 inches; mottled yellowish brown (10YR 5/6), light gray (10YR 7/1), and red (2.5YR 4/6) sandy loam; weak medium subangular blocky structure; very friable; very strongly acid; gradual wavy boundary.

C—48 to 72 inches; mottled brownish yellow (10YR 6/6) and light gray (10YR 7/1) sand; single grained; loose; strongly acid.

The thickness of the solum ranges from 40 to 60 inches. Reaction ranges from very strongly acid to medium acid throughout, except in areas where the soil has been limed.

The A or Ap horizon has hue of 10YR, value of 4 or 5, and chroma of 1 to 3. It is loamy sand, fine sandy loam, or loamy fine sand.

The E horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. It is loamy sand.

The BE horizon, where present, has hue of 10YR, value of 5, and chroma of 6. It is sandy loam.

The Bt horizon has hue of 10YR, value of 5 or 6, and chroma of 4 to 8. There are few to common mottles in varying shades of red, brown, and gray. Mottles of chroma 2 or less are in the upper 24 inches of the Bt horizon.

The BC horizon has hue of 10YR, value of 5 to 7, and chroma of 1 to 6. It has few to many mottles in varying shades of gray, brown, or red, or it is mottled in gray, brown, or red.

The C horizon is mottled in varying shades of gray, brown, yellow, and red, or it is gray and has mottles in shades of gray, brown, and red. The C horizon is sand or loamy sand.

Yemassee Series

The Yemassee series consists of somewhat poorly drained, moderately permeable soils that formed in loamy Coastal Plain sediments on broad, nearly level areas on elevations less than 42 feet. Slope ranges from 0 to 2 percent. These soils are fine-loamy, siliceous, thermic Aeric Ochraquults.

Yemassee soils are geographically associated with the Yauhannah, Ogeechee, and Bladen soils. The Yauhannah soils are on higher elevations than the Yemassee soils and are Udults. The Ogeechee and Bladen soils are on lower elevations and are not aeric.

Typical pedon of Yemassee loamy fine sand, about 3.5 miles southwest of Socastee on South Carolina Primary Highway 544, about 1.5 miles northwest on dirt road, 200 feet southwest of the road; Map 86:

A—0 to 7 inches; black (10YR 2/1) loamy fine sand; weak medium granular structure; very friable; common fine and medium roots; very strongly acid; abrupt smooth boundary.

E—7 to 14 inches; light yellowish brown (10YR 6/4) loamy fine sand; few fine faint light brownish gray and strong brown mottles; weak medium subangular blocky structure; very friable; few fine and medium roots; common fine and medium pores; very strongly acid; clear smooth boundary.

Btg1—14 to 28 inches; gray (10YR 6/1) sandy clay loam; common medium distinct yellowish brown (10YR 5/8) and few medium prominent yellowish red (5YR 5/8) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; common fine and few large pores; few fine flakes of mica; few thin vertical streaks and pockets of white sand; very strongly acid; gradual wavy boundary.

Btg2—28 to 46 inches; mottled gray (10YR 6/1) and yellowish brown (10YR 5/8) sandy clay loam; common medium prominent red (2.5YR 4/8) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine roots; common fine and medium pores; few fine flakes of mica; few thin vertical streaks and pockets of white sand; very strongly acid; gradual wavy boundary.

BCg—46 to 56 inches; light brownish gray (10YR 6/2) sandy loam; common medium distinct yellowish brown (10YR 5/8) and few medium prominent yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; few fine pores; few to common thin vertical streaks and pockets and strata of white fine sand; few fine flakes of mica; very strongly acid; gradual wavy boundary.

Cg—56 to 72 inches; light brownish gray (10YR 6/2) loamy sand that has strata of sandy clay loam and clay loam; common medium distinct brownish yellow (10YR 6/8) mottles; weak medium granular structure; few fine pores; few fine flakes of mica; few to common thin vertical streaks and pockets of white sand; very strongly acid.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from extremely acid to strongly acid throughout, except in areas where the soil has been limed. Few to many fine flakes of mica are in the Btg and Cg horizons of most pedons. Few to common thin vertical streaks and pockets of light gray or white sand or fine sand are in the Btg and Cg horizons of most pedons.

The A horizon has hue of 10YR, value of 2 to 5, and chroma of 1 or 2. It is loamy fine sand.

The E horizon has hue of 10YR, value of 5 or 6, and chroma of 3 or 4. Some pedons have mottles in shades of gray or brown. The E horizon is loamy fine sand.

The Btg horizon has hue of 10YR, value of 5 or 6, and chroma of 1 or 2, and mottles of higher chroma, or it may have mottles of high and low chroma. The Btg horizon is dominantly sandy clay loam, but it ranges to clay loam in the lower part.

The BCg horizon has hue of 10YR, value of 6, and chroma of 1 or 2. It has mottles of higher chroma and, in some pedons, mottles of high and low chroma. The BCg horizon is dominantly sandy loam and has pockets and strata of finer and coarser textures.

The Cg horizon has hue of 10YR, value of 6, and chroma of 1 or 2. It has mottles that are of higher chroma or that are white. Some pedons are coarsely mottled with high or low chroma. The Cg horizon is dominantly sand or loamy sand and has strata of finer textures, but it ranges to sandy loam or clay loam and has pockets and strata of finer and coarser textures.

Yonges Series

The Yonges series consists of poorly drained, moderately slowly permeable soils that formed in loamy Coastal Plain sediments on low, nearly level areas and along small streams and swamps on lower elevations. Slope is dominantly less than 1 percent. These soils are fine-loamy, mixed, thermic Typic Ochraqualfs.

Yonges soils are geographically associated with the Eulonia, Wahee, Meggett, Bladen, and Brookman soils. The Eulonia and Wahee soils are on higher elevations than the Yonges soils and are Ultisols. The Meggett and Bladen soils are on similar landscapes. The Meggett and Bladen soils have a clayey control section. The Brookman soils are on slightly lower elevations and have an umbric epipedon.

Typical pedon of Yonges fine sandy loam, about 1.3 miles west of Wampee on South Carolina Primary Highway 90, about 1.5 miles southeast on dirt road to junction of dirt roads, about 1.1 miles southwest of junction, 1,300 feet east on a narrow woods road, 200 feet south of road, in a cultivated field; Map 64:

Ap—0 to 8 inches; very dark grayish brown (10YR 3/2) fine sandy loam; weak fine granular structure; very friable; few fine and medium roots; medium acid; clear smooth boundary.

BA—8 to 16 inches; dark grayish brown (10YR 4/2) finesandy loam; few medium distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; friable; few fine roots; slightly acid; gradual wavy boundary.

Btg1—16 to 30 inches; gray (10YR 5/1) sandy loam; common medium distinct yellowish brown (10YR 5/6, 5/4) mottles; moderate medium subangular blocky structure; friable; few distinct clay films on faces of peds; common fine pores; neutral; gradual wavy boundary.

Btg2—30 to 40 inches; gray (10YR 5/1) sandy clay loam; few medium distinct yellowish brown (10YR 5/4) and common medium subangular blocky structure; friable; few distinct clay films on faces of peds; few fine pores; few thin lenses and strata of sand; mildly alkaline; gradual smooth boundary.

BCg—40 to 52 inches; mottled light brownish gray (10YR 6/2) and gray (10YR 5/1) sandy loam; few medium distinct yellowish brown (10YR 5/4) mottles; weak medium subangular blocky structure; friable; few fine pores; mildly alkaline; gradual smooth boundary.

Cg—52 to 68 inches; olive gray (5Y 5/2) sandy loam; massive; friable; common fragments of shell; moderately alkaline.

The thickness of the solum ranges from 40 to more than 60 inches. Reaction ranges from strongly acid to mildly alkaline in the A horizon, from strongly acid to moderately alkaline in the upper part of the B horizon, and from slightly acid to moderately alkaline in the lower part of the B horizon and in the C horizon. Few pockets or thin strata of clean sand are in the lower part of the B horizon of most pedons. Fragments of shell range from few to common in the lower part of the B horizon and in the C horizon of most pedons.

The Ap or A horizon has hue of 10YR, value of 3 or 4, and chroma of 1 or 2. It is fine sandy loam or loamy fine sand.

The E horizon, where present, has hue of 10YR, value of 5 or 6, and chroma of 2. It is loamy fine sand or fine sandy loam.

The BA horizon has hue of 10YR, value of 4 or 5, and chroma of 1 or 2, with higher chroma mottles. It is sandy loam, or fine sandy loam.

The Btg horizon has hue of 10YR, value of 4 to 6, and chroma of 1 or 2, with mottles in varying shades of brown and gray. It may be mixed with varying shades of gray. Greenish gray coatings are on the faces of peds in some pedons. It is sandy loam, sandy clay loam, or clay loam.

The BCg horizon has hue of 10YR, value of 4 to 7, and chroma of 1 or 2, and has mottles in varying shades of brown, gray, or olive gray. It is sandy loam or loamy sand.

The Cg horizon has hue of 10YR to 5BG, value of 4 to 7, and chroma of 1 or 2. Mottles in varying shades of brown or gray are in some pedons. The Cg horizon is sandy loam, loamy sand, or sand.

Formation of the Soils

In the paragraphs that follow, the factors of soil formation are described and related to the soils in the county. The processes of soil horizon differentiation are also described.

Factors of Soil Formation

Soil is the natural medium for the growth of plants. It is the product of soil-forming processes acting on accumulated geologic material. The five important factors in soil formation are parent material, climate, living organisms (plants and animals), relief, and time.

Climate and living organisms are the active forces of 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. The relative importance of each factor differs from place to place. In some places, a single factor exerts a dominant influence on the soil that is formed, but in general all five factors interact to determine the kind of soil that forms at any given place.

Although soil formation is complex, a clearer understanding of the soil-forming processes may be gained by considering each of the five factors separately. It must be remembered, however, that each of the five factors is affected by and also affects each of the others.

Parent Material

Parent material is the unconsolidated material in which a soil forms. It determines the mineral and chemical composition of the soil. The parent materials in the soils of Horry County are marine or fluvial deposits, which contain varying amounts of sand, silt, and clay (fig. 9).

All of the soils in the county were deposited or formed during the Pleistocene, or glacial, epoch. The terraces in Horry County, in sequence from the lowest to the highest elevations, are Pamlico, Talbot, Penholoway, Wicomico, and Sunderland Terraces *(3)*.

The Pamlico Terrace ranges from sea level to 25 feet above sea level. This terrace makes up about 25 percent of the county. It runs southeast from the Intercoastal Waterway to the Atlantic Ocean and along the flood plains of the Waccamaw River, Bull Creek, and the Little Pee Dee River. The soils on this terrace are younger than most of the soils at the higher elevations. The clayey soils have mixed minerology. Among the clayey soils on this terrace are the Bladen, Brookman, Meggett, and Wahee soils. Other loamy soils that have siliceous mineralogy include the Chisolm, Hobcaw, Ogeechee, Yauhannah, and Yemassee soils.

The Talbot Terrace ranges from 25 to 42 feet above sea level. This terrace makes up about 20 percent of the county. It runs northwest from the Intracoastal Waterway to the Waccamaw River flood plains, from the North Carolina State boundary to South Carolina Highway 544 and takes in the communities of Brooksville, Wampee, and Nixonville. Northwest of the Waccamaw River and adjacent to its flood plains is an area underlain by the Talbot Terrace. The communities of Red Bluff, Shell, and Hickory Grove are in this area. The soils on this terrace are generally similar to those on the Pamlico Terrace.

The Penholoway Terrace ranges from 42 to 70 feet above sea level. This terrace makes up about 20 percent of the county. In Horry County, this terrace forms a narrow band in the central part of the county and adjacent to the upper Little Pee Dee River flood plains to the North Carolina State boundary. The communities of Longs, Aynor, and Causey are in this area. Lake Swamp is also in this area. The more common soils on this terrace are Pocomoke, Echaw, Centenary, and Kenansville soils.

The Wicomico Terrace ranges from about 70 to 100 feet above sea level, and the Sunderland Terrace from 100 to 170 feet above sea level. A small number of remnant scarps more than 100 feet in elevation are also present, but they are hard to recognize in the field. These two terraces, which make up about 35 percent of the county, are in the upper northern part of the county. The communities of Loris, Bayboro, Finklea, and Floyd are in this area. Soils on this terrace are more highly developed than those on the lower terraces, and they have either siliceous or kaolinitic mineralogy. Some of the more common soils in this area include the Norfolk, Suffolk, Goldsboro, Lynchburg, and Woodington soils.

Climate

The climate in Horry County is temperate. Rainfall is well distributed throughout the year. The climate is fairly uniform throughout the county. Therefore, climate does not account for significant differences among the soils.

Precipitation and temperature affect the physical, chemical, and biological activity in the soil. The amount of water that percolates through the soil depends on the amount of rainfall, the length of the frost-free season,

Figure 9.—In some areas of Bladen fine sandy loam, sand suitable for mining is below a depth of 10 feet.

relief, and the permeability of the soil material. Water dissolves minerals, aids chemical and biological activity, and transports the dissolved mineral and organic material through the soil profile. The abundant rainfall in Horry County promotes leaching of soluble bases and the translocation of less soluble, fine-textured soil material downward through the soil profile.

Warm, humid conditions, such as those in Horry County, speed the weathering of the parent material and cause an increase in the growth and activity of living organisms. Thus, in Horry County, the high rainfall, warm temperatures, and long frost-free season have directly affected the soils and the other soil-forming factors.

Living Organisms

The kind and number of plants and animals that live in and on the soil are determined mainly by the climate and, to a lesser extent, by the parent material, relief, and age of the soil.

Bacteria, fungi, and other micro-organisms are indispensable in soil formation. They hasten the weathering of minerals and the decomposing of organic matter. Larger plants alter the soil microclimate, furnish organic matter, and transfer chemical elements from the subsoil to the surface soil.

Most of the fungi, bacteria, and other micro-organisms are in the upper few inches of soil. The activity of earthworms and other small invertebrates is chiefly in the A horizon and the upper part of the B horizon, where these organisms slowly and continuously mix the soil material. Bacteria and fungi decompose organic matter and release nutrients for plant use.

Animals play a secondary role in soil formation, but their influence is great. Plant-eating animals help to return plant material to the soil. Burrowing animals help to mix and aerate the soil material.

In Horry County, the native vegetation on the better drained soils is mainly loblolly pine, longleaf pine, oak, and hickory. In the wetter areas, it is mainly sweetgum, blackgum, yellow-poplar, maple, ash, tupelo, and cypress. Large trees influence soil formation by bringing nutrients up from deep within the soil, by bringing soil

material up from varying depths when trees are blown over, and by providing large openings that are filled by material from above as large roots decay.

Relief

Relief influences soil formation because of its effect on moisture, temperature, and erosion. Because of differences in relief, different kinds of soil can form from similar parent material.

There are three general landscapes in Horry County that affect the formation of soils. These landscapes are described as follows:

1. Nearly level to gently sloping areas that are moderately dissected by streams. The soils in these areas generally are well drained and deep.
2. Broad, nearly level, slightly dissected areas between streams. Most of the soils are yellow to gray in color, and many are distinctly mottled. They are deep and range from moderately well drained to poorly drained.
3. Nearly level areas on stream bottoms and low terraces. The soils in these areas are young, are predominantly gray, and have poorly defined genetic layers.

Time

The length of time required for a soil to develop depends largely on the intensity of other soil-forming factors. The soils in Horry County range from immature to mature. On the higher elevations on the uplands, the soils generally have well-developed horizons that are easily recognized. However, where the parent material is very sandy, little horizonation has taken place; and where the relief is very low and the soils are permanently saturated, horizons are only moderately distinct. On the first bottoms of streams, the soil material has not been in place long enough for soil horizons to form.

Processes of Soil Horizon Differentiation

The differentiation of horizons is the result of many soil-forming processes. These include the accumulation of organic matter; the leaching of soluble salts; the reduction and translocation of iron; the formation of soil structure; physical weathering, for example, freezing and thawing; and the chemical weathering of primary minerals or rocks.

Some of these processes are continually taking place in all soils, but the number of active processes and the degree of their activity vary from one soil to another.

Most soils have four major horizons, which are called the A, E, B, and C horizons *(6)*. These horizons can be subdivided by the use of subscripts and letters that indicate changes within a horizon. An example is the Bt horizon, which represents a layer within the B horizon that has translocated clay.

The A horizon is the surface layer. The layer that has the largest accumulation of organic matter is called the A horizon. If the soils have been cleared and plowed, the plow layer is called the Ap horizon. Yemassee and Bladen soils, for example, have a distinctive, dark-colored A or Ap horizon.

The E horizon is the layer of maximum leaching, or eluviation, of clay and iron. The E horizon forms just below the surface layer. Generally the E horizon is the lightest colored horizon in the soil. It is well expressed in Chisolm and Blanton soils.

The B horizon lies below the A and E horizon. It is commonly called the subsoil. It is the horizon of maximum accumulation, or illuviation, of clay and of iron, aluminum, and other compounds. Norfolk, Yauhannah, and Eulonia soils have a well expressed B horizon.

The C horizon is below the B horizon. In some soils, however, there is no B horizon, and the C horizon lies directly below the A horizon. This is the case in the Newhan and Rutlege soils. The C horizon consists of material that is little altered by the soil-forming processes but that may be modified by weathering.

Well drained and moderately well drained soils in Horry County have a yellowish brown or reddish subsoil. These colors are mainly caused by thin coatings of iron oxide on the sand, silt, and clay particles. A well drained soil does not have gray mottles, chroma of 2 or less, within a depth of at least 30 inches. Among the well drained soils in this county are Norfolk, Suffolk, and Chisolm soils. Moderately well drained soils are wet for short periods and generally do not have gray mottles within a depth of about 15 to 20 inches. Yauhannah, Goldsboro, and Eulonia soils are moderately well drained soils.

The reduction and transfer of iron is associated with the wetter, more poorly drained soils. This process is called gleying. In poorly drained and very poorly drained soils, such as the Bladen and Hobcaw soils, the subsoil and underlying material are gray or grayish. These colors result from the reduction and transfer of iron. Somewhat poorly drained soils have yellowish brown and gray mottles, which indicate the segregation of iron. Yemassee and Wahee soils are among the somewhat poorly drained soils in Horry County.

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Glossary

Association, soil. A group of soils geographically associated in a characteristic repeating pattern and defined and delineated as a single map unit.

Available water capacity (available moisture capacity). The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as—

	Inches
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.

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.

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.

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.

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.

Deferred grazing. Postponing grazing or resting grazingland for a prescribed period.

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, such as fire, that exposes the surface.

Excess fines (in tables). Excess silt and clay are in the soil. The soil is not a source of gravel or sand for construction purposes.

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.

Flood plain. A nearly level alluvial plain that borders a stream and is subject to flooding unless protected artificially.

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 accumulation of clay, sesquioxides, humus, or a combination of these; prismatic or blocky structure; redder or browner colors than those in the A horizon; or 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.

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.

Infiltration. The downward entry of water into the immediate surface of soil or other material. This contrasts with percolation, which is movement of water through soil layers or material.

Irrigation. Application of water to soils to assist in production of crops. A method of irrigation is—*Sprinkler.*—Water is sprayed over the soil surface through pipes or nozzles from a pressure system.

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.

Mineral soil. Soil that is mainly mineral material and low in organic material. Its bulk density is more than that of organic soil.

Minimum tillage. Only the tillage essential to crop production and prevention of soil damage.

Miscellaneous area. An area that has little or no natural soil and supports little or no vegetation.

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).

Muck. Dark, finely divided, well decomposed organic soil material. (See Sapric soil material.)

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.)

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.

Percs slowly (in tables). The slow movement of water through the soil adversely affects 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). Subsurface tunnels or pipelike cavities are formed 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.

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 the 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—

	pH
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

Relief. The elevations or inequalities of a land surface, considered collectively.

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.

Sapric soil material (muck). The most highly decomposed of all organic soil material. Muck has the least amount of plant fiber, the highest bulk density, and the lowest water content at saturation of all organic soil material.

Seepage (in tables). The movement of water through the soil adversely affects the specified use.

Series, 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.

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.

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.

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.

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.

Solum. The upper part of a soil profile, above the C horizon, in which the processes of soil formation are active. The solum in soil consists of the A, E, and B horizons. Generally, the characteristics of the material in these horizons are unlike those of the underlying material. The living roots and plant and animal activities are largely confined to the solum.

Structure, soil. The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are—*platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular. Structureless* soils are either *single grained* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

Subsoil. Technically, the B horizon; roughly, the part of the solum below plow depth.

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 organic matter content 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 (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."

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.

Upland (geology). Land at a higher elevation, in general, than the alluvial plain or stream terrace; land above the lowlands along streams.

Tables

TABLE 1.--TEMPERATURE AND PRECIPITATION

[Recorded in the period 1951-78 at Conway, South Carolina]

Month	Temperature						Precipitation				
	Average daily maximum	Average daily minimum	Average	2 years in 10 will have-- Maximum temperature higher than--	2 years in 10 will have-- Minimum temperature lower than--	Average number of growing degree days*	Average	2 years in 10 will have-- Less than--	2 years in 10 will have-- More than--	Average number of days with 0.10 inch or more	Average snowfall
	°F	°F	°F	°F	°F	Units	In	In	In		In
January----	56.8	33.7	45.3	79	16	92	3.67	2.13	5.03	8	.3
February---	59.8	35.3	47.6	81	18	81	3.51	1.81	4.99	7	.8
March------	67.2	42.6	54.9	87	26	206	4.17	2.32	5.80	7	.1
April------	76.0	50.9	63.5	92	34	405	2.94	1.13	4.46	5	.0
May--------	83.0	59.4	71.3	97	42	660	4.53	2.39	6.39	7	.0
June-------	87.9	66.4	77.2	100	52	816	5.73	2.43	8.52	8	.0
July-------	90.5	70.2	80.4	100	60	942	6.22	3.53	8.59	10	.0
August-----	89.6	69.8	79.7	99	60	921	5.96	3.86	7.86	10	.0
September--	84.8	64.6	74.7	96	49	741	5.36	2.88	7.53	7	.0
October----	76.3	52.7	64.5	90	32	450	3.23	1.00	5.03	5	.0
November---	67.6	42.2	55.0	85	24	177	2.41	1.14	3.49	4	.0
December---	59.3	35.5	47.4	79	18	90	3.33	1.66	4.77	6	.0
Yearly:											
Average--	74.9	51.9	63.5	---	---	---	---	---	---	---	---
Extreme--	---	---	---	101	14	---	---	---	---	---	---
Total----	---	---	---	---	---	5,581	51.06	42.80	58.94	84	1.2

*A growing degree day is a unit of heat available for plant growth. It can be calculated by adding the maximum and minimum daily temperatures, dividing the sum by 2, and subtracting the temperature below which growth is minimal for the principal crops in the area (50° F).

TABLE 2.--FREEZE DATES IN SPRING AND FALL

[Recorded in the period 1951-78
at Conway, South Carolina]

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 4	March 24	April 4
2 years in 10 later than--	February 24	March 17	March 29
5 years in 10 later than--	February 10	March 2	March 17
First freezing temperature in fall:			
1 year in 10 earlier than--	November 24	November 3	October 30
2 years in 10 earlier than--	November 29	November 10	November 3
5 years in 10 earlier than--	December 11	November 22	November 11

TABLE 3.--GROWING SEASON

[Recorded in the period 1951-78
at Conway, South Carolina]

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	276	234	216
8 years in 10	285	244	224
5 years in 10	303	265	238
2 years in 10	321	286	252
1 year in 10	330	296	260

TABLE 4.--ACREAGE AND PROPORTIONATE EXTENT OF THE SOILS

Map symbol	Soil name	Acres	Percent
Bc	Beaches	1,540	0.2
Bd	Bladen fine sandy loam	32,295	4.4
BnA	Blanton sand, 0 to 6 percent slopes	13,815	1.9
Bo	Bohicket silty clay loam	2,705	0.4
Br	Brookman loam	4,490	0.6
Ce	Centenary fine sand	20,955	2.8
ChB	Chisolm fine sand, 0 to 6 percent slopes	10,475	1.4
Co	Coxville fine sandy loam	6,600	0.9
DuA	Duplin loamy fine sand, 0 to 2 percent slopes	2,835	0.4
Ec	Echaw sand	18,910	2.6
EmB	Emporia loamy fine sand, 2 to 6 percent slopes	5,530	0.8
EuA	Eulonia loamy fine sand, 0 to 2 percent slopes	28,755	3.9
EuB	Eulonia loamy fine sand, 2 to 6 percent slopes	2,795	0.4
GoA	Goldsboro loamy fine sand, 0 to 2 percent slopes	32,705	4.4
Ho	Hobcaw fine sandy loam	11,615	1.6
Hy	Hobonny muck	19,015	2.6
Jo	Johnston loam	51,125	6.9
KeB	Kenansville fine sand, 0 to 6 percent slopes	28,060	3.8
LaB	Lakeland sand, 0 to 6 percent slopes	15,650	2.1
Le	Leon fine sand	33,975	4.6
Ln	Lynchburg loamy fine sand	12,040	1.6
Ly	Lynn Haven sand	23,285	3.2
Me	Meggett loam	34,330	4.7
NaB	Nankin fine sandy loam, 2 to 6 percent slopes	3,025	0.4
NeA	Nansemond loamy fine sand, 0 to 2 percent slopes	35,435	4.8
NhB	Newhan fine sand, 0 to 6 percent slopes	2,930	0.4
NoA	Norfolk loamy fine sand, 0 to 2 percent slopes	9,330	1.3
Og	Ogeechee loamy fine sand	35,350	4.8
Os	Osier loamy sand	4,380	0.6
Po	Pocomoke fine sandy loam	38,220	5.2
RmB	Rimini sand, 0 to 6 percent slopes	2,200	0.3
Ru	Rutlege loamy sand	18,255	2.5
SfA	Suffolk loamy fine sand, 0 to 2 percent slopes	8,300	1.1
SfB	Suffolk loamy fine sand, 2 to 6 percent slopes	2,360	0.3
SmA	Summerton fine sandy loam, 0 to 2 percent slopes	1,195	0.2
Ud	Udorthents and Udipsamments, well drained	4,655	0.6
Wa	Wahee fine sandy loam	15,430	2.1
We	Witherbee sand	4,395	0.6
Wo	Woodington fine sandy loam	40,735	5.5
YaA	Yauhannah fine sandy loam, 0 to 2 percent slopes	41,155	5.6
Ye	Yemassee loamy fine sand	15,885	2.2
Yo	Yonges fine sandy loam	29,730	4.0
	Water	9,535	1.3
	Total	736,000	100.0

TABLE 5.--LAND CAPABILITY CLASSES AND 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]

Map symbol and soil name	Land capability	Corn	Soybeans	Tobacco	Wheat	Oats	Bahiagrass	Improved bermudagrass
		Bu	Bu	Lbs	Bu	Bu	AUM*	AUM*
Bc**--- Beaches	VIIIw	---	---	---	---	---	---	---
Bd--- Bladen	Vw	---	---	---	---	---	---	---
BnA--- Blanton	IIIs	60	25	2,000	---	---	6.5	8.0
Bo--- Bohicket	VIIIw	---	---	---	---	---	---	---
Br--- Brookman	IIIw	80	35	---	---	60	9.0	---
Ce--- Centenary	IIIs	65	20	2,000	---	---	7.5	7.5
ChB--- Chisolm	IIs	100	30	2,400	---	50	8.0	10.0
Co--- Coxville	IIIw	110	40	---	50	70	---	---
DuA--- Duplin	IIw	110	50	2,800	60	---	---	---
Ec--- Echaw	IIIs	70	30	2,200	---	---	7.5	7.5
EmB--- Emporia	IIe	100	30	2,900	50	---	---	---
EuA--- Eulonia	IIw	100	40	2,600	---	75	9.5	9.5
EuB--- Eulonia	IIe	90	35	2,500	---	70	9.0	10.0
GoA--- Goldsboro	IIw	125	45	3,000	60	---	---	---
Ho--- Hobcaw	VIw	---	---	---	---	---	---	---
Hy--- Hobonny	VIIw	---	---	---	---	---	---	---
Jo--- Johnston	VIIw	---	---	---	---	---	---	---
KeB--- Kenansville	IIs	85	25	2,200	---	---	---	---
LaB--- Lakeland	IVs	55	20	1,700	---	20	7.0	7.0

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Tobacco	Wheat	Oats	Bahiagrass	Improved bermudagrass
		Bu	Bu	Lbs	Bu	Bu	AUM*	AUM*
Le---------- Leon	IVw	50	---	---	---	---	7.5	---
Ln---------- Lynchburg	IIw	115	45	2,800	---	75	10.0	---
Ly---------- Lynn Haven	IVw	70	---	---	---	---	7.5	---
Me---------- Meggett	VIw	---	---	---	---	---	---	---
NaB---------- Nankin	IIe	75	30	2,200	---	---	7.0	9.0
NeA---------- Nansemond	IIw	110	35	2,600	40	---	---	---
NhB---------- Newhan	VIIIs	---	---	---	---	---	---	---
NoA---------- Norfolk	I	110	40	3,000	60	---	---	---
Og---------- Ogeechee	IIIw	100	45	---	---	---	9.0	---
Os---------- Osier	Vw	---	---	---	---	---	5.0	---
Po---------- Pocomoke	VIw	---	---	---	---	---	---	---
RmB---------- Rimini	VIs	---	---	---	---	---	---	---
Ru---------- Rutlege	VIw	---	---	---	---	---	---	---
SfA---------- Suffolk	I	115	30	2,600	40	---	---	---
SfB---------- Suffolk	IIe	110	30	2,200	40	---	---	---
SmA---------- Summerton	I	100	40	2,200	---	---	9.0	10.0
Ud---------- Udorthents and Udipsamments	VIIs	---	---	---	---	---	---	---
Wa---------- Wahee	IIw	110	45	1,800	---	70	8.0	---
We---------- Witherbee	IIIw	70	25	2,200	30	30	10.0	10.0
Wo---------- Woodington	IIIw	100	35	---	---	---	---	---

See footnote at end of table.

TABLE 5.--LAND CAPABILITY CLASSES AND YIELDS PER ACRE OF CROPS AND PASTURE--Continued

Map symbol and soil name	Land capability	Corn	Soybeans	Tobacco	Wheat	Oats	Bahiagrass	Improved bermuda-grass
		Bu	Bu	Lbs	Bu	Bu	AUM*	AUM*
YaA---------- Yauhannah	IIw	125	45	2,900	---	---	9.0	11.0
Ye---------- Yemassee	IIw	120	45	2,600	---	---	11.0	12.0
Yo---------- Yonges	IIIw	110	40	---	---	---	12.0	---

* 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 6.--CAPABILITY CLASSES AND SUBCLASSES

[Miscellaneous areas are excluded. Absence of an entry indicates no acreage]

Class	Total acreage	Major management concerns (Subclass)		
		Erosion (e)	Wetness (w)	Soil problem (s)
		Acres	Acres	Acres
I	18,825	---	---	---
II	236,485	13,710	184,240	38,535
III	174,980	---	121,300	53,680
IV	72,910	---	57,260	15,650
V	36,675	---	36,675	---
VI	104,620	---	102,420	2,200
VII	70,140	---	70,140	---
VIII	7,175	---	4,245	2,930

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]

Map symbol and soil name	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
Bd Bladen	2w	Slight	Severe	Severe	Loblolly pine Slash pine Sweetgum	94 91 90	Loblolly pine, slash pine, American sycamore, water oak.
BnA Blanton	3s	Slight	Moderate	Moderate	Slash pine Loblolly pine Longleaf pine Bluejack oak Turkey oak Southern red oak Live oak	90 80 70 --- --- --- ---	Slash pine, loblolly pine.
Br Brookman	2w	Slight	Severe	Severe	Baldcypress Loblolly pine Southern red oak Slash pine Sweetgum White oak Yellow-poplar	--- 95 --- 95 100 --- ---	Loblolly pine, slash pine, sweetgum, water tupelo.
Ce Centenary	3s	Slight	Moderate	Moderate	Slash pine Loblolly pine Longleaf pine	85 85 72	Slash pine, loblolly pine.
ChB Chisolm	2s	Slight	Moderate	Moderate	Loblolly pine Slash pine Longleaf pine Southern red oak Hickory	90 90 78 --- ---	Slash pine, longleaf pine.
Co Coxville	2w	Slight	Severe	Moderate	Loblolly pine Longleaf pine Sweetgum Blackgum Water oak Willow oak Water tupelo Elm Hickory	90 --- --- --- --- --- --- --- ---	Loblolly pine.
DuA Duplin	2w	Slight	Moderate	Moderate	Loblolly pine Slash pine Sweetgum Blackgum Southern red oak White oak Yellow-poplar	90 90 --- --- --- --- 100	Loblolly pine, slash pine, yellow-poplar, American sycamore, sweetgum.
Ec Echaw	3s	Slight	Moderate	Slight	Longleaf pine Loblolly pine Slash pine	68 85 80	Longleaf pine, loblolly pine, slash pine, shortleaf pine.
EmB Emporia	3s	Slight	Slight	Moderate	Loblolly pine Southern red oak	75 70	Loblolly pine, sweetgum.

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
EuA, EuB---------- Eulonia	2w	Slight	Moderate	Moderate	Loblolly pine-------	90	Loblolly pine, slash pine, American sycamore, sweetgum, yellow-poplar.
					Slash pine----------	88	
					Water oak----------	90	
					Sweetgum-----------	90	
					Blackgum-----------	---	
					Southern red oak----	---	
					Longleaf pine-------	85	
					Hickory------------	---	
GoA---------- Goldsboro	2w	Slight	Moderate	Slight	Loblolly pine-------	90	Loblolly pine, slash pine, yellow-poplar, American sycamore, sweetgum.
					Slash pine----------	93	
					Longleaf pine-------	77	
					Sweetgum-----------	90	
					Southern red oak----	---	
					White oak----------	---	
Ho---------- Hobcaw	4w	Slight	Severe	Severe	Baldcypress---------	---	Water tupelo, sweetgum.
					Sweetgum-----------	---	
					Blackgum-----------	---	
					Water oak----------	---	
					Swamp tupelo--------	---	
					Water tupelo--------	---	
Jo---------- Johnston	4w	Slight	Severe	Severe	Water tupelo--------	---	Baldcypress, American sycamore, sweetgum, green ash.
					Swamp tupelo--------	---	
					Water oak----------	---	
					Pond pine----------	---	
					Baldcypress---------	---	
KeB---------- Kenansville	3s	Slight	Moderate	Moderate	Loblolly pine-------	80	Loblolly pine.
					Longleaf pine-------	65	
LaB---------- Lakeland	4s	Slight	Moderate	Moderate	Slash pine----------	75	Slash pine, longleaf pine.
					Loblolly pine-------	75	
					Longleaf pine-------	60	
					Turkey oak----------	---	
					Blackjack oak-------	---	
					Post oak-----------	---	
Le---------- Leon	4w	Slight	Moderate	Moderate	Slash pine----------	70	Slash pine.
					Longleaf pine-------	65	
Ln---------- Lynchburg	2w	Slight	Moderate	Slight	Slash pine----------	91	Slash pine, loblolly pine, American sycamore, sweetgum.
					Loblolly pine-------	86	
					Longleaf pine-------	74	
					Yellow-poplar-------	92	
					Sweetgum-----------	90	
					Southern red oak----	---	
					White oak----------	---	
					Blackgum-----------	---	
Ly---------- Lynn Haven	3w	Slight	Moderate	Moderate	Slash pine----------	90	Slash pine, loblolly pine.
					Loblolly pine-------	80	
					Longleaf pine-------	70	
					Pond pine----------	70	
Me---------- Meggett	1w	Slight	Severe	Severe	Slash pine----------	100	Slash pine, loblolly pine.
					Loblolly pine-------	100	
					Pond pine----------	75	

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
NaB---------- Nankin	3o	Slight	Slight	Slight	Loblolly pine-------	80	Loblolly pine, slash pine.
					Slash pine----------	80	
					Longleaf pine-------	70	
NeA---------- Nansemond	2s	Slight	Moderate	Moderate	Loblolly pine-------	88	Loblolly pine, yellow-poplar, black walnut, sweetgum.
					Sweetgum-----------	90	
					Shortleaf pine------	77	
					Yellow-poplar-------	90	
					White oak----------	---	
NoA---------- Norfolk	2o	Slight	Slight	Slight	Loblolly pine-------	86	Slash pine, loblolly pine.
					Longleaf pine-------	68	
					Slash pine----------	86	
Og---------- Ogeechee	2w	Slight	Severe	Moderate	Loblolly pine-------	90	Loblolly pine, slash pine, sweetgum.
					Slash pine----------	90	
					Pond pine-----------	70	
Os---------- Osier	3w	Slight	Severe	Severe	Slash pine----------	85	Slash pine, loblolly pine.
					Loblolly pine-------	87	
					Longleaf pine-------	69	
Po---------- Pocomoke	2w	Slight	Severe	Severe	Loblolly pine-------	90	Loblolly pine, sweetgum.
					Pin oak-------------	85	
					Sweetgum-----------	90	
RmB---------- Rimini	5s	Slight	Severe	Severe	Loblolly pine-------	65	Slash pine, longleaf pine, sand pine.
					Slash pine----------	65	
					Longleaf pine-------	55	
Ru---------- Rutlege	4w	Slight	Severe	Severe	Sweetgum-----------	90	Baldcypress.
					Pin Oak-------------	85	
SfA, SfB---------- Suffolk	3s	Slight	Slight	Moderate	Loblolly pine-------	82	Loblolly pine.
					Shortleaf pine------	72	
					Southern red oak----	70	
					Loblolly pine-------	82	
					Shortleaf pine------	72	
					Southern red oak----	70	
SmA---------- Summerton	3o	Slight	Slight	Slight	Loblolly pine-------	80	Loblolly pine, slash pine.
					Slash pine----------	80	
					Longleaf pine-------	65	
Wa---------- Wahee	2w	Slight	Moderate	Moderate	Loblolly pine-------	86	Loblolly pine, slash pine, sweetgum, American sycamore, water oak.
					Slash pine----------	86	
					Sweetgum-----------	90	
					Blackgum-----------	---	
					Water oak----------	---	
					Swamp chestnut oak--	---	
					Willow oak----------	---	
					Southern red oak----	---	
We---------- Witherbee	2w	Slight	Moderate	Slight	Longleaf pine-------	72	Loblolly pine, longleaf pine, slash pine, shortleaf pine.
					Loblolly pine-------	90	
					Slash pine----------	90	
					Water oak----------	---	
					Post oak-----------	---	

TABLE 7.--WOODLAND MANAGEMENT AND PRODUCTIVITY--Continued

Map symbol and soil name	Ordination symbol	Management concerns			Potential productivity		Trees to plant
		Erosion hazard	Equipment limitation	Seedling mortality	Common trees	Site index	
Wo---------- Woodington	3w	Slight	Severe	Severe	Slash pine----------	---	Slash pine, loblolly pine, American sycamore, water tupelo, water oak, sweetgum.
					Loblolly pine-------	83	
					Sweetgum----------	---	
					White oak----------	---	
					Southern red oak----	---	
					Water tupelo--------	---	
YaA---------- Yauhannah	2w	Slight	Moderate	Slight	Loblolly pine-------	90	Loblolly pine, slash pine, yellow-poplar, sweetgum, American sycamore.
					Slash pine----------	90	
					Sweetgum----------	90	
					Southern red oak----	80	
					White oak----------	80	
					Yellow-poplar-------	100	
					Longleaf pine-------	80	
Ye---------- Yemassee	2w	Slight	Moderate	Slight	Loblolly pine-------	90	Slash pine, loblolly pine, American sycamore, yellow-poplar.
					Slash pine----------	88	
					Sweetgum----------	95	
					Southern red oak----	---	
					White oak----------	---	
					Yellow-poplar-------	100	
					Longleaf pine-------	80	
					Blackgum----------	---	
					Hickory----------	---	
Yo---------- Yonges	1w	Slight	Severe	Severe	Loblolly pine-------	105	Loblolly pine, slash pine, sweetgum, American sycamore, water tupelo.
					Sweetgum----------	100	
					Water oak----------	100	

* 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]

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Bc.* Beaches					
Bd---------- Bladen	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
BnA---------- Blanton	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Bo---------- Bohicket	Severe: flooding, ponding, percs slowly.	Severe: ponding, excess salt, flooding.	Severe: ponding, flooding.	Severe: ponding, flooding.	Severe: excess salt, excess sulfur, ponding.
Br---------- Brookman	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ce---------- Centenary	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
ChB---------- Chisolm	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
Co---------- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
DuA---------- Duplin	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Moderate: wetness, percs slowly.	Slight----------	Slight.
Ec---------- Echaw	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
EmB---------- Emporia	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight----------	Moderate: droughty.
EuA---------- Eulonia	Moderate: percs slowly, wetness.	Moderate: wetness, percs slowly.	Moderate: percs slowly, wetness.	Moderate: wetness.	Moderate: wetness.
EuB---------- Eulonia	Moderate: percs slowly, wetness.	Moderate: wetness, percs slowly.	Moderate: slope, wetness, percs slowly.	Moderate: wetness.	Moderate: wetness.
GoA---------- Goldsboro	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Slight----------	Slight.
Ho---------- Hobcaw	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
Hy---------- Hobonny	Severe: flooding, ponding, excess humus.	Severe: flooding, ponding, excess humus.	Severe: ponding, flooding, excess humus.	Severe: ponding, excess humus.	Severe: ponding, flooding, excess humus.
Jo---------- Johnston	Severe: flooding, ponding.	Severe: ponding.	Severe: ponding, flooding.	Severe: ponding.	Severe: ponding, flooding.
KeB---------- Kenansville	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty.
LaB---------- Lakeland	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Moderate: droughty, too sandy.
Le---------- Leon	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
Ln---------- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ly---------- Lynn Haven	Severe: wetness, too sandy.	Severe: wetness, too sandy.	Severe: too sandy, wetness.	Severe: wetness, too sandy.	Severe: wetness, droughty.
Me---------- Meggett	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, flooding.
NaB---------- Nankin	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: slope, percs slowly.	Slight----------	Slight.
NeA---------- Nansemond	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
NhB---------- Newhan	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
NoA---------- Norfolk	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight----------	Slight.
Og---------- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Os---------- Osier	Severe: flooding, wetness.	Severe: wetness.	Severe: wetness, flooding.	Severe: wetness.	Severe: wetness, droughty, flooding.
Po---------- Pocomoke	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
RmB---------- Rimini	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: too sandy.	Severe: droughty.
Ru---------- Rutlege	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.

See footnote at end of table.

TABLE 8.--RECREATIONAL DEVELOPMENT--Continued

Map symbol and soil name	Camp areas	Picnic areas	Playgrounds	Paths and trails	Golf fairways
SfA---------- Suffolk	Slight----------	Slight----------	Slight----------	Slight----------	Moderate: droughty.
SfB---------- Suffolk	Slight----------	Slight----------	Moderate: slope.	Slight----------	Moderate: droughty.
SmA---------- Summerton	Moderate: percs slowly.	Moderate: percs slowly.	Moderate: percs slowly.	Slight----------	Slight.
Ud.* Udorthents Udipsamments					
Wa---------- Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
We---------- Witherbee	Severe: wetness, too sandy.	Severe: too sandy.	Severe: too sandy, wetness.	Severe: too sandy.	Severe: droughty.
Wo---------- Woodington	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
YaA---------- Yauhannah	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Ye---------- Yemassee	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
Yo---------- Yonges	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]

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Bc.* Beaches										
Bd---------- Bladen	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
BnA---------- Blanton	Poor	Fair	Fair	Fair	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Bo---------- Bohicket	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
Br---------- Brookman	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair	Fair.
Ce---------- Centenary	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
ChB---------- Chisolm	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Co---------- Coxville	Good	Good	Good	Good	Good	Poor	Fair	Good	Good	Poor.
DuA---------- Duplin	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Ec---------- Echaw	Poor	Fair	Good	Fair	Fair	Poor	Very poor.	Fair	Fair	Very poor.
EmB---------- Emporia	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
EuA, EuB---------- Eulonia	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
GoA---------- Goldsboro	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
Ho---------- Hobcaw	Very poor.	Very poor.	Very poor.	Fair	Fair	Good	Good	Very poor.	Fair	Good.
Hy---------- Hobonny	Very poor.	Very poor.	Very poor.	Very poor.	Very poor.	Good	Good	Very poor.	Very poor.	Good.
Jo---------- Johnston	Very poor.	Poor	Poor	Poor	Poor	Good	Good	Poor	Poor	Good.
KeB---------- Kenansville	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
LaB---------- Lakeland	Poor	Fair	Fair	Poor	Fair	Very poor.	Very poor.	Fair	Fair	Very poor.
Le---------- Leon	Poor	Fair	Good	Poor	Fair	Fair	Poor	Fair	Fair	Poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Ln---------- Lynchburg	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Ly---------- Lynn Haven	Poor	Fair	Fair	Poor	Poor	Fair	Fair	Fair	Poor	Fair.
Me---------- Meggett	Poor	Fair	Fair	Fair	Good	Good	Good	Fair	Good	Good.
NaB---------- Nankin	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
NeA---------- Nansemond	Poor	Fair	Good	Good	Good	Poor	Poor	Fair	Good	Poor.
NhB---------- Newhan	Very poor.	Poor	Poor	Very poor.	Very poor.	Very poor.	Very poor.	Poor	Very poor.	Very poor.
NoA---------- Norfolk	Good	Good	Good	Good	Good	Poor	Very poor.	Good	Good	Very poor.
Og---------- Ogeechee	Poor	Fair	Fair	Fair	Fair	Good	Good	Fair	Fair	Good.
Os---------- Osier	Very poor.	Poor	Fair	Fair	Fair	Fair	Good	Poor	Fair	Fair.
Po---------- Pocomoke	Very poor.	Poor	Poor	Poor	Poor	Good	Fair	Poor	Poor	Good.
RmB---------- Rimini	Very poor.	Very poor.	Poor	Poor	Poor	Very poor.	Very poor.	Very poor.	Poor	Very poor.
Ru---------- Rutlege	Very poor.	Poor	Poor	Poor	Poor	Fair	Good	Poor	Poor	Fair.
SfA, SfB---------- Suffolk	Poor	Fair	Good	Good	Good	Poor	Very poor.	Fair	Good	Very poor.
SmA---------- Summerton	Good	Good	Good	Good	Good	Very poor.	Very poor.	Good	Good	Very poor.
Ud*: Udorthents. Udipsamments.										
Wa---------- Wahee	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
We---------- Witherbee	Poor	Fair	Fair	Fair	Fair	Fair	Very poor.	Fair	Fair	Poor.
Wo---------- Woodington	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.
YaA---------- Yauhannah	Good	Good	Good	Good	Good	Poor	Poor	Good	Good	Poor.

See footnote at end of table.

TABLE 9.--WILDLIFE HABITAT--Continued

Map symbol and soil name	Potential for habitat elements							Potential as habitat for--		
	Grain and seed crops	Grasses and legumes	Wild herbaceous plants	Hardwood trees	Coniferous plants	Wetland plants	Shallow water areas	Openland wildlife	Woodland wildlife	Wetland wildlife
Ye---------- Yemassee	Fair	Good	Good	Good	Good	Fair	Fair	Good	Good	Fair.
Yo---------- Yonges	Fair	Fair	Fair	Good	Good	Fair	Fair	Fair	Good	Fair.

* 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. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Bc.* Beaches						
Bd---------- Bladen	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: low strength, ponding.	Severe: ponding.
BnA---------- Blanton	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
Bo---------- Bohicket	Severe: ponding.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: flooding, ponding, shrink-swell.	Severe: low strength, ponding, flooding.	Severe: excess salt, excess sulfur, ponding.
Br---------- Brookman	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
Ce---------- Centenary	Severe: cutbanks cave, wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Severe: droughty.
ChB---------- Chisolm	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
Co---------- Coxville	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
DuA---------- Duplin	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: wetness.	Moderate: wetness, shrink-swell.	Severe: low strength.	Slight.
Ec---------- Echaw	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
EmB---------- Emporia	Moderate: wetness.	Slight---------	Moderate: wetness, shrink-swell.	Moderate: slope.	Moderate: low strength.	Moderate: droughty.
EuA---------- Eulonia	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: low strength, wetness.	Moderate: wetness.
EuB---------- Eulonia	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness, slope.	Moderate: low strength, wetness.	Moderate: wetness.
GoA---------- Goldsboro	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Slight.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
Ho---------- Hobcaw	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
Hy---------- Hobonny	Severe: excess humus, ponding.	Severe: flooding, low strength, ponding.	Severe: flooding, low strength, ponding.	Severe: flooding, low strength, ponding.	Severe: ponding, flooding.	Severe: ponding, flooding, excess humus.
Jo---------- Johnston	Severe: cutbanks cave, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: flooding, ponding.	Severe: ponding, flooding.	Severe: ponding, flooding.
KeB---------- Kenansville	Severe: cutbanks cave.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Moderate: droughty.
LaB---------- Lakeland	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty, too sandy.
Le---------- Leon	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
Ln---------- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Ly---------- Lynn Haven	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness, droughty.
Me---------- Meggett	Severe: wetness, too clayey.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: flooding, wetness, shrink-swell.	Severe: shrink-swell, wetness, flooding.	Severe: wetness, flooding.
NaB---------- Nankin	Moderate: too clayey.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Slight.
NeA---------- Nansemond	Severe: wetness, cutbanks cave.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness, droughty.
NhB---------- Newhan	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Severe: droughty.
NoA---------- Norfolk	Moderate: wetness.	Slight---------	Moderate: wetness.	Slight---------	Slight---------	Slight.
Og---------- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
Os---------- Osier	Severe: cutbanks cave, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, wetness.	Severe: wetness, droughty, flooding.
Po---------- Pocomoke	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.

See footnote at end of table.

TABLE 10.--BUILDING SITE DEVELOPMENT--Continued

Map symbol and soil name	Shallow excavations	Dwellings without basements	Dwellings with basements	Small commercial buildings	Local roads and streets	Lawns and landscaping
RmB---------- Rimini	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Severe: droughty.
Ru---------- Rutlege	Severe: cutbanks cave, ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.	Severe: ponding.
SfA---------- Suffolk	Severe: cutbanks cave.	Slight---------	Slight---------	Slight---------	Slight---------	Moderate: droughty.
SfB---------- Suffolk	Severe: cutbanks cave.	Slight---------	Slight---------	Moderate: slope.	Slight---------	Moderate: droughty.
SmA---------- Summerton	Moderate: too clayey.	Slight---------	Slight---------	Slight---------	Severe: low strength.	Slight.
Ud.* Udorthents Udipsamments						
Wa---------- Wahee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: low strength, wetness.	Severe: wetness.
We---------- Witherbee	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Severe: droughty.
Wo---------- Woodington	Severe: cutbanks cave, wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.
YaA---------- Yauhannah	Severe: wetness.	Moderate: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.	Moderate: wetness.
Ye---------- Yemassee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Moderate: wetness.	Moderate: wetness.
Yo---------- Yonges	Severe: wetness.	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 11.--SANITARY FACILITIES

[Some terms that describe restrictive soil features are defined in the Glossary. See text for definitions of "slight," "good," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Bc.* Beaches					
Bd---- Bladen	Severe: ponding, percs slowly.	Severe: ponding.	Severe: ponding, too clayey.	Severe: ponding.	Poor: too clayey, hard to pack, ponding.
BnA---- Blanton	Moderate: wetness.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: too sandy, seepage.
Bo---- Bohicket	Severe: flooding, ponding, percs slowly.	Severe: flooding, ponding.	Severe: flooding, ponding, too clayey.	Severe: flooding, ponding.	Poor: too clayey, hard to pack, ponding.
Br---- Brookman	Severe: wetness, percs slowly.	Slight----	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
Ce---- Centenary	Severe: wetness, poor filter.	Severe: seepage.	Severe: seepage, wetness, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
ChB---- Chisolm	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Good.
Co---- Coxville	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: wetness.
DuA---- Duplin	Severe: wetness, percs slowly.	Slight----	Severe: wetness.	Severe: wetness.	Fair: too clayey, hard to pack, wetness.
Ec---- Echaw	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy.
EmB---- Emporia	Severe: wetness, percs slowly.	Severe: seepage, wetness.	Moderate: wetness, too clayey.	Slight----	Fair: too clayey, wetness.
EuA, EuB---- Eulonia	Severe: percs slowly, wetness.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
GoA---------- Goldsboro	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Fair: wetness.
Ho---------- Hobcaw	Severe: ponding.	Severe: seepage, ponding.	Severe: ponding.	Severe: ponding, seepage.	Poor: ponding.
Hy---------- Hobonny	Severe: flooding, ponding.	Severe: flooding, excess humus, ponding.	Severe: flooding, excess humus, ponding.	Severe: flooding, ponding.	Poor: ponding, excess humus.
Jo---------- Johnston	Severe: flooding, ponding, poor filter.	Severe: seepage, flooding, ponding.	Severe: flooding, seepage, ponding.	Severe: flooding, seepage, ponding.	Poor: seepage, ponding.
KeB---------- Kenansville	Moderate: wetness.	Severe: seepage.	Severe: seepage, wetness.	Severe: seepage.	Fair: too sandy.
LaB---------- Lakeland	Slight----------	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Le---------- Leon	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Ln---------- Lynchburg	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.
Ly---------- Lynn Haven	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Me---------- Meggett	Severe: flooding, wetness, percs slowly.	Severe: flooding, wetness.	Severe: flooding, wetness, too clayey.	Severe: flooding, wetness.	Poor: too clayey, hard to pack, wetness.
NaB---------- Nankin	Severe: percs slowly.	Moderate: seepage, slope.	Moderate: too clayey.	Slight----------	Fair: too clayey.
NeA---------- Nansemond	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Fair: too sandy, wetness.
NhB---------- Newhan	Severe: poor filter.	Severe: seepage.	Severe: too sandy.	Severe: seepage.	Poor: seepage, too sandy.
NoA---------- Norfolk	Severe: percs slowly.	Severe: seepage, wetness.	Moderate: too clayey, wetness.	Slight----------	Fair: too clayey, wetness.
Og---------- Ogeechee	Severe: wetness.	Severe: wetness.	Severe: wetness.	Severe: wetness.	Poor: wetness.

See footnote at end of table.

TABLE 11.--SANITARY FACILITIES--Continued

Map symbol and soil name	Septic tank absorption fields	Sewage lagoon areas	Trench sanitary landfill	Area sanitary landfill	Daily cover for landfill
Os Osier	Severe: flooding, wetness.	Severe: seepage, flooding, wetness.	Severe: flooding, wetness.	Severe: flooding, seepage.	Poor: seepage, too sandy, wetness.
Po Pocomoke	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: too sandy, wetness.
RmB Rimini	Severe: poor filter.	Severe: seepage.	Severe: seepage, too sandy.	Severe: seepage.	Poor: seepage, too sandy.
Ru Rutlege	Severe: ponding, poor filter.	Severe: seepage, ponding.	Severe: seepage, ponding, too sandy.	Severe: seepage, ponding.	Poor: too sandy, ponding.
SfA, SfB Suffolk	Slight	Severe: seepage.	Severe: seepage.	Slight	Poor: thin layer.
SmA Summerton	Severe: percs slowly.	Slight	Moderate: too clayey.	Slight	Fair: too clayey, hard to pack.
Ud.* Udorthents Udipsamments					
Wa Wahee	Severe: wetness, percs slowly.	Severe: wetness.	Severe: wetness, too clayey.	Severe: wetness.	Poor: too clayey, hard to pack, wetness.
We Witherbee	Severe: wetness, poor filter.	Severe: seepage, wetness.	Severe: seepage, wetness, too sandy.	Severe: seepage, wetness.	Poor: seepage, too sandy, wetness.
Wo Woodington	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Poor: wetness.
YaA Yauhannah	Severe: wetness.	Severe: seepage, wetness.	Severe: seepage, wetness.	Severe: wetness.	Fair: wetness.
Ye Yemassee	Severe: wetness.	Severe: seepage, wetness.	Severe: wetness.	Severe: seepage, wetness.	Poor: wetness.
Yo Yonges	Severe: wetness, percs slowly.	Severe: wetness, seepage.	Severe: wetness.	Severe: wetness.	Poor: 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," and other terms. Absence of an entry indicates that the soil was not rated. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Bc.* Beaches				
Bd---- Bladen	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
BnA---- Blanton	Good----	Probable----	Improbable: too sandy.	Poor: too sandy, small stones.
Bo---- Bohicket	Poor: low strength, wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: excess salt, wetness.
Br---- Brookman	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
Ce---- Centenary	Good----	Probable----	Improbable: too sandy.	Poor: too sandy.
ChB---- Chisolm	Good----	Probable----	Improbable: too sandy.	Poor: too sandy.
Co---- Coxville	Poor: wetness, low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
DuA---- Duplin	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Ec---- Echaw	Fair: wetness.	Probable----	Improbable: too sandy.	Poor: too sandy.
EmB---- Emporia	Fair: shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
EuA, EuB---- Eulonia	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
GoA---- Goldsboro	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
Ho---- Hobcaw	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Hy---- Hobonny	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness, excess humus.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Jo Johnston	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
KeB Kenansville	Good	Improbable: excess fines.	Improbable: excess fines.	Good.
LaB Lakeland	Good	Probable	Improbable: too sandy.	Poor: too sandy.
Le Leon	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Ln Lynchburg	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Ly Lynn Haven	Poor: wetness.	Probable	Improbable: too sandy.	Poor: too sandy, wetness.
Me Meggett	Poor: wetness, shrink-swell.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
NaB Nankin	Good	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
NeA Nansemond	Fair: wetness.	Probable	Improbable: too sandy.	Fair: too sandy.
NhB Newhan	Good	Probable	Improbable: too sandy.	Poor: too sandy.
NoA Norfolk	Good	Improbable: excess fines.	Improbable: excess fines.	Fair: too sandy.
Og Ogeechee	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: wetness.
Os Osier	Poor: wetness.	Probable	Improbable: too sandy.	Poor: wetness.
Po Pocomoke	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: small stones, wetness.
RmB Rimini	Good	Probable	Improbable: too sandy.	Poor: too sandy.
Ru Rutlege	Poor: wetness.	Improbable: excess fines.	Improbable: too sandy.	Poor: wetness.
SfA, SfB Suffolk	Good	Probable	Improbable: too sandy.	Fair: small stones.
SmA Summerton	Poor: low strength.	Improbable: excess fines.	Improbable: excess fines.	Poor: too clayey.

See footnote at end of table.

TABLE 12.--CONSTRUCTION MATERIALS--Continued

Map symbol and soil name	Roadfill	Sand	Gravel	Topsoil
Ud.* Udorthents Udipsamments				
Wa---------- Wahee	Poor: low strength, wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.
We---------- Witherbee	Moderate: wetness.	Probable----------	Improbable: too sandy.	Poor: too sandy.
Wo---------- Woodington	Poor: wetness.	Probable----------	Improbable: too sandy.	Poor: wetness.
YaA---------- Yauhannah	Fair: wetness.	Probable----------	Improbable: too sandy.	Good.
Ye---------- Yemassee	Fair: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer.
Yo---------- Yonges	Poor: wetness.	Improbable: excess fines.	Improbable: excess fines.	Poor: thin layer, wetness.

* 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. The information in this table indicates the dominant soil condition but does not eliminate the need for onsite investigation]

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
Bc.* Beaches						
Bd---------- Bladen	Slight---------	Severe: ponding.	Slight---------	Percs slowly, ponding.	Percs slowly, ponding.	Wetness, percs slowly.
BnA---------- Blanton	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Droughty.
Bo---------- Bohicket	Slight---------	Severe: hard to pack, ponding, excess salt.	Severe: slow refill.	Ponding, percs slowly, flooding.	Ponding, percs slowly.	Wetness, excess salt, percs slowly.
Br---------- Brookman	Moderate: seepage.	Severe: hard to pack, wetness.	Moderate: slow refill.	Favorable------	Wetness, percs slowly.	Wetness.
Ce---------- Centenary	Severe: seepage.	Severe: seepage.	Severe: cutbanks cave.	Cutbanks cave	Droughty, fast intake, soil blowing.	Droughty.
ChB---------- Chisolm	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Deep to water	Droughty, fast intake, slope.	Droughty.
Co---------- Coxville	Slight---------	Severe: wetness.	Severe: slow refill.	Favorable------	Wetness--------	Wetness.
DuA---------- Duplin	Slight---------	Moderate: piping, hard to pack, wetness.	Severe: slow refill.	Favorable------	Wetness, fast intake.	Favorable.
Ec---------- Echaw	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Droughty.
EmB---------- Emporia	Moderate: seepage, slope.	Moderate: thin layer, piping.	Severe: no water.	Deep to water	Fast intake, soil blowing, slope.	Droughty, percs slowly.
EuA---------- Eulonia	Moderate: seepage.	Moderate: wetness.	Moderate: deep to water.	Favorable------	Wetness, fast intake, soil blowing.	Favorable.
EuB---------- Eulonia	Moderate: seepage.	Moderate: wetness.	Moderate: deep to water.	Slope----------	Wetness, soil blowing, slope.	Favorable.
GoA---------- Goldsboro	Moderate: seepage.	Moderate: wetness.	Moderate: deep to water.	Favorable------	Wetness, fast intake.	Favorable.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
Ho---------- Hobcaw	Moderate: seepage.	Severe: piping, ponding.	Moderate: slow refill.	Ponding--------	Ponding, soil blowing.	Wetness.
Hy---------- Hobonny	Moderate: seepage.	Severe: excess humus, ponding.	Moderate: slow refill.	Flooding, ponding, subsides.	Ponding, soil blowing.	Wetness.
Jo---------- Johnston	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, flooding, cutbanks cave.	Ponding, flooding.	Wetness.
KeB---------- Kenansville	Severe: seepage.	Moderate: seepage.	Severe: cutbanks cave.	Deep to water	Fast intake, droughty.	Droughty.
LaB---------- Lakeland	Severe: seepage.	Severe: seepage.	Severe: no water.	Deep to water	Droughty, fast intake, soil blowing.	Droughty.
Le---------- Leon	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
Ln---------- Lynchburg	Moderate: seepage.	Severe: piping, wetness.	Moderate: slow refill.	Favorable------	Wetness, fast intake.	Wetness.
Ly---------- Lynn Haven	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
Me---------- Meggett	Moderate: seepage.	Severe: hard to pack, wetness.	Severe: slow refill.	Percs slowly, flooding.	Wetness, percs slowly.	Wetness, percs slowly.
NaB---------- Nankin	Moderate: seepage, slope.	Severe: thin layer.	Severe: no water.	Deep to water	Slope----------	Favorable.
NeA---------- Nansemond	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Droughty.
NhB---------- Newhan	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Droughty.
NoA---------- Norfolk	Moderate: seepage.	Slight---------	Severe: deep to water.	Deep to water	Fast intake----	Favorable.
Og---------- Ogeechee	Moderate: seepage.	Severe: wetness.	Favorable------	Favorable------	Wetness, fast intake.	Wetness.

See footnote at end of table.

TABLE 13.--WATER MANAGEMENT--Continued

Map symbol and soil name	Limitations for--			Features affecting--		
	Pond reservoir areas	Embankments, dikes, and levees	Aquifer-fed excavated ponds	Drainage	Irrigation	Grassed waterways
Os---- Osier	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Flooding, cutbanks cave.	Wetness, flooding, droughty.	Wetness, droughty.
Po---- Pocomoke	Severe: seepage.	Severe: seepage, piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness----	Wetness.
RmB---- Rimini	Severe: seepage.	Severe: seepage, piping.	Severe: no water.	Deep to water	Droughty, fast intake, slope.	Droughty.
Ru---- Rutlege	Severe: seepage.	Severe: seepage, piping, ponding.	Severe: cutbanks cave.	Ponding, cutbanks cave.	Ponding, droughty.	Wetness, droughty.
SfA---- Suffolk	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Droughty, soil blowing, fast intake.	Droughty.
SfB---- Suffolk	Severe: seepage.	Severe: thin layer.	Severe: no water.	Deep to water	Droughty, soil blowing, slope.	Droughty.
SmA---- Summerton	Severe: slope.	Severe: hard to pack.	Severe: no water.	Deep to water	Soil blowing---	Favorable.
Ud.* Udorthents Udipsamments						
Wa---- Wahee	Slight----	Severe: wetness.	Severe: slow refill.	Percs slowly---	Wetness, soil blowing, percs slowly.	Wetness, percs slowly.
We---- Witherbee	Severe: seepage.	Severe: seepage, piping.	Severe: cutbanks cave.	Cutbanks cave	Wetness, droughty, fast intake.	Wetness, droughty.
Wo---- Woodington	Severe: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness----	Wetness.
YaA---- Yauhannah	Moderate: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Favorable----	Wetness----	Favorable.
Ye---- Yemassee	Moderate: seepage.	Severe: piping, wetness.	Severe: cutbanks cave.	Cutbanks cave	Wetness, fast intake, soil blowing.	Wetness.
Yo---- Yonges	Moderate: seepage.	Severe: piping, wetness.	Severe: slow refill.	Favorable----	Wetness, soil blowing.	Wetness.

* 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. Absence of an entry indicates that data were not estimated]

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Bc.* Beaches										
Bd	0-6	Fine sandy loam	SM	A-2, A-4	100	97-100	60-85	20-50	---	NP
Bladen	6-42	Clay, sandy clay	CL, CH	A-7, A-6,	100	99-100	75-100	55-85	40-67	19-45
	42-62	Clay, sandy clay, clay loam.	CL, CH, SC	A-4, A-6, A-7	100	89-99	75-95	45-75	25-60	8-35
BnA	0-58	Sand	SP-SM	A-3, A-2-4	100	100	65-100	5-12	---	NP
Blanton	58-63	Sandy loam, loamy sand, loamy coarse sand.	SM	A-2-4	100	100	65-96	13-30	<25	NP-3
	63-75	Sandy clay loam, sandy loam, fine sandy loam.	SC, SM-SC, SM	A-4, A-2-4 A-2-6, A-6	100	100	69-96	25-50	12-45	3-22
Bo	0-12	Silty clay loam	CH, MH	A-7	100	99-100	90-100	80-100	60-100	15-60
Bohicket	12-72	Silty clay, clay, sandy clay.	CH, MH	A-7	100	99-100	80-100	70-95	50-100	16-60
Br	0-10	Loam	CL, ML, CL-ML	A-6, A-4, A-8	100	95-100	75-100	51-81	25-40	6-20
Brookman	10-46	Sandy clay, clay	CH, CL	A-7, A-6	100	98-100	85-100	55-91	37-65	18-41
	46-68	Sandy clay, clay, sandy clay loam.	CL, CH,SC, SM-SC	A-6, A-7, A-2-4	100	90-100	70-100	32-90	23-55	7-35
Ce	0-68	Fine sand	SP, SP-SM	A-3	100	100	60-90	4-10	---	NP
Centenary	68-80	Sand, fine sand, loamy sand.	SP-SM, SP, SM	A-3, A-2-4	100	100	65-90	4-20	---	NP
ChB	0-24	Fine sand	SP-SM, SM	A-2, A-3	100	98-100	75-98	5-20	---	NP
Chisolm	24-46	Sandy clay loam	SM-SC, SC, CL, CL-ML	A-4, A-6	100	98-100	75-98	36-55	20-35	4-15
	46-58	Sandy loam, fine sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2, A-4, A-6	100	98-100	65-98	25-50	15-35	2-15
	58-80	Fine sandy loam, loamy sand, sand.	SM, SP-SM	A-2, A-3	100	98-100	60-98	10-20	<30	NP-7
Co	0-8	Fine sandy loam	SM, ML, CL-ML, CL	A-4, A-6, A-7	100	100	85-97	46-75	20-46	3-15
Coxville	8-72	Clay loam, sandy clay, clay.	CL, CH	A-6, A-7	100	100	85-98	50-85	30-55	12-35
DuA	0-17		SM, SM-SC	A-2, A-4	100	100	67-98	20-49	<26	NP-7
Duplin	17-70	Sandy clay, clay loam, clay.	CL, CH, SC	A-6, A-7	100	98-100	80-100	45-79	24-54	13-35
Ec	0-36	Sand	SP, SP-SM	A-3	100	100	50-80	4-10	---	NP
Echaw	36-72	Loamy sand, fine sand, sand.	SM	A-2, A-3	100	100	50-75	5-30	---	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
EmB---------- Emporia	0-5	Loamy fine sand	SM, SM-SC	A-2, A-1	90-100	80-100	40-85	15-35	<18	NP-7
	5-54	Sandy clay loam, sandy loam, clay loam.	SC, CL	A-2, A-4, A-6, A-7	90-100	80-100	45-95	25-70	20-50	8-30
	54-68	Stratified sandy loam to clay loam.	SM, SC, ML CL	A-1, A-2, A-4, A-6	70-100	55-100	30-90	20-60	<40	NP-25
EuA, EuB---------- Eulonia	0-12	Loamy fine sand	SM, SM-SC	A-2	100	95-100	50-96	18-35	<20	NP-4
	12-40	Sandy clay, clay, clay loam.	SC, CL	A-6, A-7, A-4	100	95-100	70-99	45-80	25-45	8-20
	40-80	Sandy clay loam, sandy loam.	SC, SM, SM-SC	A-2, A-4, A-6	100	90-100	60-100	18-50	15-35	3-15
GoA---------- Goldsboro	0-7	Loamy fine sand	SM, SM-SC, SC	A-2, A-4, A-6	90-100	75-100	50-100	15-45	<25	NP-14
	7-31	Sandy clay loam, sandy loam.	SM-SC, SC, CL-ML, CL	A-2, A-4, A-6	98-100	95-100	60-100	25-55	16-37	4-18
	31-72	Sandy clay loam, clay loam, sandy clay.	SC, CL, CL-ML, CH	A-4, A-6, A-7-6	95-100	90-100	65-95	36-70	25-55	6-32
Ho---------- Hobcaw	0-15	Fine sandy loam	SM, ML	A-2, A-4	100	100	70-95	30-65	<35	NP-7
	15-48	Sandy clay loam, clay loam, fine sandy loam.	SM-SC, SC, CL-ML, CL	A-4, A-6, A-7	100	100	75-98	36-70	18-45	NP-22
	48-68	Variable---------	---	---	---	---	---	---	---	---
Hy---------- Hobonny	0-80	Muck----------	Pt	---	---	---	---	---	---	---
Jo---------- Johnston	0-30	Loam----------	ML, SM	A-2, A-4	100	100	60-100	18-65	<35	NP-10
	30-45	Stratified loamy sand to sand.	SM, SP-SM	A-2, A-3	100	100	50-100	5-30	---	NP
	45-70	Stratified fine sandy loam to sandy loam.	SM	A-2, A-4	100	100	50-100	25-49	<35	NP-10
KeB---------- Kenansville	0-28	Fine sand--------	SM	A-1, A-2	100	95-100	45-60	10-25	<25	NP-3
	28-51	Sandy loam, fine sandy loam, sandy clay loam.	SM, SC, SM-SC	A-2, A-4	100	95-100	50-75	20-40	<30	NP-10
	51-70	Sand, loamy sand	SP-SM, SM, SP	A-1, A-2, A-3	100	95-100	40-60	5-30	---	NP
LaB---------- Lakeland	0-50	Sand----------	SP-SM	A-3, A-2-4	90-100	90-100	60-100	5-12	---	NP
	50-82	Sand, fine sand	SP, SP-SM	A-3, A-2-4	90-100	90-100	50-100	1-12	---	NP
Le---------- Leon	0-9	Fine sand--------	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
	9-20	Sand, fine sand, loamy sand.	SM, SP-SM, SP	A-3, A-2-4	100	100	80-100	3-20	---	NP
	20-72	Sand, fine sand	SP, SP-SM	A-3, A-2-4	100	100	80-100	2-12	---	NP
Ln---------- Lynchburg	0-8	Loamy fine sand	SM, SP-SM	A-2	92-100	90-100	60-100	11-35	<25	NP-4
	8-80	Sandy clay loam, sandy loam, clay loam.	SM-SC, SC, CL, CL-ML	A-2, A-4, A-6	92-100	90-100	70-100	25-67	15-40	4-18

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Ly---------- Lynn Haven	0-13	Sand----------	SP, SP-SM, SM	A-3, A-2-4	100	100	80-100	2-14	---	NP
	13-75	Sand, fine sand, loamy sand.	SM, SP-SM	A-3, A-2-4	100	100	70-100	5-20	---	NP
Me---------- Meggett	0-4	Loam----------	ML, CL-ML	A-4	100	90-100	85-100	51-75	<35	NP-10
	4-46	Clay, sandy clay, clay loam.	CH, MH, CL	A-6, A-7	100	90-100	85-100	51-90	30-60	20-30
	46-72	Sandy clay, clay loam, sandy clay loam.	CL, SC, SM	A-4, A-6	90-100	65-100	50-100	40-60	<40	NP-25
NaB---------- Nankin	0-4	Fine sandy loam	SM, SM-SC	A-2, A-4	85-100	85-100	70-90	25-45	<25	NP-4
	4-48	Sandy clay, clay, sandy clay loam.	SC, CL, CL-ML	A-4, A-6, A-7	98-100	95-100	75-95	40-70	25-45	7-20
	48-72	Sandy clay loam, sandy loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	98-100	95-100	70-85	25-55	<30	NP-12
NeA---------- Nansemond	0-12	Loamy fine sand	SM, SM-SC	A-1, A-2, A-4	100	95-100	45-95	15-50	<20	NP-7
	12-32	Fine sandy loam, sandy loam.	SM, SM-SC, SC	A-2, A-4, A-6	100	95-100	60-85	30-50	<25	NP-15
	32-54	Loamy fine sand, loamy sand.	SM, SM-SC	A-2, A-4	100	95-100	45-95	15-50	<25	NP-10
	54-72	Sand, loamy fine sand, loamy sand.	SM, SC, SM-SC, SP-SM	A-1, A-2, A-3, A-4	95-100	75-100	40-95	5-50	<25	NP-7
NhB---------- Newhan	0-80	Fine sand--------	SP	A-3	95-100	95-100	60-75	0-5	---	NP
NoA---------- Norfolk	0-16	Loamy fine sand	SM	A-2, A-4	95-100	92-100	50-95	13-37	<20	NP
	16-56	Sandy loam, sandy clay loam, clay loam.	SC, SM-SC, CL, CL-ML	A-2, A-4, A-6	95-100	91-100	70-96	30-63	20-38	4-15
	56-75	Sandy clay loam, clay loam, sandy clay.	SC, SM-SC, CL, CL-ML	A-4, A-6, A-7-6	100	98-100	65-98	36-72	20-52	4-23
Og---------- Ogeechee	0-10	Loamy fine sand	SM	A-2, A-1	100	95-100	48-70	10-25	---	NP
	10-54	Sandy clay loam, clay loam.	SC, CL	A-6	100	95-100	65-85	40-55	32-40	16-23
	54-60	Sandy clay, sandy clay loam, clay.	SC, CL	A-6, A-7	100	95-100	65-85	43-65	32-46	16-24
	60-72	Sandy clay loam, sandy loam.	SC	A-6, A-2	100	90-100	50-65	25-45	30-40	15-25
Os---------- Osier	0-8	Loamy sand-------	SP-SM,SM	A-2, A-3	100	98-100	60-85	5-22	---	NP
	8-65	Sand, loamy sand, loamy fine sand.	SP-SM, SM	A-2, A-3	100	95-100	65-96	5-20	---	NP
Po---------- Pocomoke	0-11	Fine sandy loam	SM, SC, CL-ML	A-2, A-4	85-100	75-100	40-85	15-55	19-26	3-10
	11-16	Loamy sand, sand	SM, SP-SM	A-2, A-3	80-100	65-100	30-75	4-30	<22	NP-8
	16-72	Sandy clay loam, sandy loam, sand.	SM, SC, CL	A-2, A-4, A-6	80-100	65-100	30-90	4-55	<38	NP-15
RmB---------- Rimini	0-65	Sand----------	SP, SP-SM	A-3	100	98-100	60-98	2-5	---	NP
	65-72	Sand, fine sand	SP, SP-SM	A-3	100	98-100	75-100	3-10	---	NP

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Ru	0-12	Loamy sand	SM, SP-SM	A-2, A-3	95-100	95-100	50-80	5-35	---	NP
Rutlege	12-72	Sand, loamy sand, loamy fine sand.	SP-SM, SP, SM	A-2, A-3	95-100	95-100	50-80	2-25	---	NP
SfA, SfB	0-14	Loamy fine sand	SM, SM-SC	A-1, A-2, A-4	95-100	90-100	40-85	15-40	<18	NP-6
Suffolk	14-44	Sandy clay loam, clay loam, sandy loam.	SC, CL	A-2, A-6	95-100	90-100	50-95	25-75	20-40	10-25
	44-56	Loamy fine sand, fine sandy loam, gravelly sand.	SP, SM, SM-SC	A-1, A-2, A-3, A-4	75-100	60-100	30-80	3-50	<18	NP-7
SmA	0-6	Fine sandy loam	SM, ML	A-2, A-4	100	95-100	75-95	30-60	<35	NP-7
Summerton	6-61	Sandy clay, clay loam, clay.	CL, ML, CH MH	A-6, A-7	100	98-100	90-100	55-81	35-71	11-35
Ud.* Udorthents Udipsamments										
Wa	0-11	Fine sandy loam	SM, SM-SC	A-2, A-4	100	95-100	50-98	30-50	<28	NP-7
Wahee	11-56	Clay, clay loam, silty clay.	CL, CH	A-6, A-7	100	100	85-100	51-90	38-70	18-42
	56-65	Variable	---	---	---	---	---	---	---	---
We	0-22	Sand	SP-SM, SM	A-3, A-2	100	100	80-100	5-15	---	NP
Witherbee	22-80	Fine sand, sand, loamy fine sand.	SP-SM, SP, SM	A-3, A-2	100	100	80-100	3-15	---	NP
Wo	0-14	Fine sandy loam	SM	A-2, A-4	100	95-100	50-100	20-50	<25	NP-3
Woodington	14-58	Sandy loam, fine sandy loam.	SM	A-2, A-4	100	95-100	50-100	20-50	<25	NP-3
	58-84	Sandy loam, loamy sand, loamy fine sand.	SM, SP-SM	A-2, A-4	100	95-100	50-100	10-50	<25	NP-3
YaA	0-8	Fine sandy loam	SM, SM-SC	A-2, A-4	100	95-100	75-100	25-50	<25	NP-7
Yauhannah	8-40	Sandy clay loam, clay loam, sandy loam.	SC, CL, SM-SC, CL-ML	A-2, A-4, A-6	100	95-100	75-100	25-55	<35	NP-16
	40-48	Fine sandy loam, sandy loam, sandy clay loam.	SM, SM-SC, SC	A-2, A-4	100	95-100	75-100	25-50	25-50	NP-25
	48-72	Sandy loam, loamy fine sand, fine sand.	SM, SM-SC, SP-SM	A-2, A-4	100	100	75-100	10-45	<28	NP-6
Ye	0-14	Loamy fine sand	SM	A-2-4	100	100	75-100	15-35	<25	NP-4
Yemassee	14-46	Sandy clay loam, clay loam, fine sandy loam.	CL, SC, CL-ML, SM-SC	A-2, A-4, A-6	100	100	75-100	30-70	16-40	4-20
	46-56	Sandy clay loam, fine sandy loam, sandy clay.	SC, SM, CL-ML, SM-SC	A-2, A-4, A-6	100	100	75-100	25-55	<35	NP-15
	56-72	Variable	---	---	---	---	---	---	---	---

See footnote at end of table.

TABLE 14.--ENGINEERING INDEX PROPERTIES--Continued

Map symbol and soil name	Depth	USDA texture	Classification		Percentage passing sieve number--				Liquid limit	Plasticity index
			Unified	AASHTO	4	10	40	200		
	In								Pct	
Yo---------- Yonges	0-16	Fine sandy loam	SM, SM-SC, ML	A-4	100	100	70-85	40-55	<30	NP-7
	16-68	Sandy clay loam, clay loam, sandy clay.	CL-ML, CL, SC, SM-SC	A-4, A-6, A-7	100	100	95-100	40-70	20-45	6-28

* 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 "Organic matter" apply only to the surface layer. Absence of an entry indicates that data were not available or were not estimated]

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Organic matter
									K	T	
	In	Pct	G/cm	In/hr	In/in	pH	mmhos/cm				Pct
Bc.* Beaches											
Bd	0-6	10-20	1.35-1.45	0.6-2.0	0.10-0.13	3.6-5.5	<2	Low	0.24	5	1-4
Bladen	6-42	35-55	1.65-1.75	0.06-0.2	0.12-0.16	3.6-5.5	<2	Moderate	----		
	42-62	35-70	1.60-1.70	0.06-0.2	0.12-0.16	3.6-5.5	<2	Moderate	----		
BnA	0-58	1-7	1.30-1.60	6.0-20	0.03-0.07	4.5-6.0	<2	Low	0.10	5	.5-1
Blanton	58-63	10-18	1.53-1.65	2.0-6.0	0.10-0.15	4.5-5.5	<2	Low	0.15		
	63-75	12-30	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	<2	Low	0.20		
Bo	0-12	30-60	1.20-1.40	0.06-0.2	0.02-0.06	6.1-8.4	>8	High	0.28	5	5-25
Bohicket	12-72	35-60	1.30-1.60	<0.06	0.02-0.06	6.1-8.4	>8	High	0.24		
Br	0-10	30-58	1.20-1.45	0.6-2.0	0.15-0.20	5.1-6.5	<2	Low	0.24	4	10-23
Brookman	10-46	15-25	1.40-1.60	0.6-2.0	0.18-0.22	5.1-6.5	<2	Moderate	0.28		
	46-68	35-55	1.45-1.65	0.06-0.2	0.12-0.16	5.1-7.8	<2	Moderate	0.24		
Ce	0-68	1-8	1.40-1.60	6.0-20	0.03-0.08	4.5-6.5	<2	Low	0.10	5	<1
Centenary	68-80	2-8	1.40-1.60	6.0-20	0.03-0.05	4.5-6.0	<2	Low	0.10		
ChB	0-24	2-10	1.40-1.70	6.0-20	0.03-0.05	4.5-6.0	<2	Low	0.10	5	<1
Chisolm	24-46	18-35	1.30-1.50	0.6-2.0	0.10-0.15	4.5-6.0	<2	Low	0.15		
	46-58	15-35	1.30-1.50	0.6-6.0	0.08-0.15	4.5-6.0	<2	Low	0.15		
	58-80	2-20	1.40-1.70	6.0-20	0.03-0.08	4.5-5.5	<2	Low	0.15		
Co	0-8	5-27	1.45-1.65	0.6-2.0	0.12-0.17	3.6-6.0	<2	Low	0.24	5	2-4
Coxville	8-72	35-60	1.25-1.45	0.2-0.6	0.14-0.18	3.6-5.5	<2	Moderate	0.32		
DuA	0-17	4-18	1.45-1.65	2.0-6.0	0.10-0.15	5.1-7.3	<2	Low	0.24	5	.5-2
Duplin	17-70	35-60	1.25-1.40	0.2-0.6	0.13-0.18	4.5-5.5	<2	Moderate	0.28		
Ec	0-36	1-8	1.40-1.60	2.0-20	0.03-0.08	4.5-6.0	<2	Low	0.10	5	<1
Echaw	36-72	2-10	1.40-1.60	6.0-20	0.05-0.10	4.5-6.0	<2	Low	0.10		
EmB	0-5	5-10	1.30-1.40	6.0-20	0.05-0.10	4.5-6.0	<2	Low	0.28	4	.5-3
Emporia	5-54	18-35	1.35-1.45	0.2-2.0	0.10-0.18	4.5-6.0	<2	Low	0.28		
	54-68	5-40	1.45-1.60	0.06-2.0	0.08-0.18	4.5-6.0	<2	Moderate	0.20		
EuA, EuB	0-12	5-15	1.50-1.60	6.0-20	0.06-0.09	4.5-6.5	<2	Low	0.15	5	.5-2
Eulonia	12-40	35-45	1.50-1.70	0.2-0.6	0.12-0.16	4.5-6.0	<2	Low	0.24		
	40-80	15-35	1.50-1.70	0.6-2.0	0.10-0.14	4.5-6.0	<2	Low	0.20		
GoA	0-7	5-15	1.40-1.60	2.0-6.0	0.08-0.12	4.5-6.6	<2	Low	0.20	5	.5-2
Goldsboro	7-31	18-30	1.30-1.50	0.6-2.0	0.11-0.15	4.5-5.5	<2	Low	0.24		
	31-72	20-45	1.30-1.40	0.2-2.0	0.11-0.15	4.5-5.5	<2	Low	0.24		
Ho	0-15	5-20	1.20-1.50	2.0-6.0	0.10-0.16	4.5-6.5	<2	Low	0.17	5	2-9
Hobcaw	15-48	18-35	1.30-1.60	0.6-2.0	0.12-0.18	4.5-6.5	<2	Low	0.24		
	48-68	---	---	---	---	---	---	---	----		
Hy	0-80	---	0.20-0.65	0.6-6.0	0.20-0.25	4.5-5.5	<2	Low	----	---	20-60
Hobonny											

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Organic matter
									K	T	
	In	Pct	G/cm	In/hr	In/in	pH	mmhos/cm				Pct
Jo	0-30	5-18	1.30-1.55	2.0-6.0	0.10-0.20	4.5-5.5	<2	Low	0.20	5	3-8
Johnston	30-45	2-12	1.55-1.65	6.0-20	0.02-0.07	4.5-5.5	<2	Low	0.17		
	45-70	5-20	1.45-1.65	6.0-20	0.06-0.12	4.5-5.5	<2	Low	0.17		
KeB	0-28	3-10	1.5-1.7	6.0-20	0.04-0.10	4.5-6.0	<2	Low	0.15	5	.5-2
Kenansville	28-51	5-18	1.3-1.5	2.0-6.0	0.10-0.15	4.5-6.0	<2	Low	0.15		
	51-70	1-10	1.5-1.7	6.0-20	<0.05	4.5-6.0	<2	Low	----		
LaB	0-50	2-8	1.35-1.65	6.0-20	0.05-0.09	4.5-6.0	<2	Low	0.10	5	<1
Lakeland	50-82	1-6	1.50-1.60	6.0-20	0.02-0.08	4.5-6.0	<2	Low	0.10		
Le	0-9	1-6	1.40-1.65	6.0-20	0.02-0.05	3.6-5.5	<2	Low	0.10	5	.5-4
Leon	9-20	2-8	1.50-1.70	0.6-6.0	0.05-0.10	3.6-5.5	<2	Low	0.15		
	20-72	1-6	1.40-1.65	0.6-6.0	0.02-0.05	3.6-6.0	<2	Low	0.10		
Ln	0-8	2-10	1.40-1.70	6.0-20	0.07-0.10	3.6-6.5	<2	Low	0.15	5	.5-5
Lynchburg	8-80	18-35	1.30-1.50	0.6-2.0	0.12-0.16	3.6-5.5	<2	Low	0.20		
Ly	0-13	1-4	1.35-1.60	6.0-20	0.05-0.10	3.6-5.5	<2	Low	0.10	5	1-4
Lynn Haven	13-75	2-8	1.40-1.55	0.6-6.0	0.10-0.20	3.6-5.5	<2	Low	0.15		
Me	0-4	15-25	1.20-1.40	0.6-2.0	0.15-0.20	4.5-6.5	<2	Low	0.28	5	2-8
Meggett	4-46	35-60	1.50-1.75	0.06-0.2	0.13-0.18	6.1-8.4	<2	High	0.32		
	46-72	25-50	1.40-1.60	0.2-2.0	0.12-0.16	6.1-8.4	<2	Moderate	0.28		
NaB	0-4	7-20	1.45-1.55	2.0-6.0	0.08-0.12	4.5-6.0	<2	Low	0.28	3	.5-1
Nankin	4-48	35-50	1.60-1.70	0.2-0.6	0.11-0.16	4.5-5.5	<2	Low	0.24		
	48-68	15-35	1.60-1.70	0.6-2.0	0.10-0.15	4.5-5.5	<2	Low	0.24		
NeA	0-12	4-10	1.20-1.45	2.0-20	0.05-0.10	3.6-6.0	<2	Low	0.15	3	.5-1
Nansemond	12-32	10-18	1.25-1.45	2.0-6.0	0.10-0.16	3.6-5.5	<2	Low	0.17		
	32-54	4-12	1.30-1.55	2.0-6.0	0.06-0.11	3.6-5.5	<2	Low	0.15		
	54-72	2-12	1.35-1.55	6.0-20	0.02-0.10	3.6-5.5	<2	Low	0.15		
NhB	0-80	<5	1.30-1.70	>20	<0.05	6.6-7.8	<2	Low	0.10	5	---
Newhan											
NoA	0-16	2-8	1.55-1.75	6.0-20	0.06-0.11	4.5-6.0	<2	Low	0.20	5	.5-2
Norfolk	16-56	18-35	1.35-1.45	0.6-2.0	0.10-0.15	4.5-5.5	<2	Low	0.24		
	56-75	20-40	1.30-1.40	0.06-2.0	0.10-0.15	4.5-5.5	<2	Low	0.24		
Og	0-10	5-10	1.40-1.50	2.0-6.0	0.03-0.05	4.5-5.5	<2	Low	0.10	5	1-2
Ogeechee	10-54	20-35	1.55-1.65	0.6-2.0	0.08-0.14	4.5-5.5	<2	Low	0.15		
	54-60	30-45	1.60-1.70	0.6-2.0	0.10-0.14	4.5-5.5	<2	Low	0.15		
	60-72	15-30	1.55-1.65	0.6-2.0	0.10-0.14	4.5-5.5	<2	Low	0.15		
Os	0-8	1-10	1.35-1.60	6.0-20	0.03-0.10	3.6-6.0	<2	Low	0.10	5	---
Osier	8-65	1-10	1.40-1.60	6.0-20	0.03-0.10	3.6-6.0	<2	Low	0.10		
Po	0-11	7-18	1.35-1.50	0.6-2.0	0.12-0.20	3.6-5.5	<2	Low	0.28	3	2-9
Pocomoke	11-16	5-18	1.40-1.60	2.0-6.0	0.06-0.10	3.6-5.5	<2	Low	0.20		
	16-72	5-30	1.40-1.60	0.6-6.0	0.06-0.18	3.6-5.5	<2	Low	0.20		
RmB	0-65	<3	1.40-1.60	>20	0.02-0.05	3.6-5.5	<2	Low	0.10	5	<1
Rimini	65-72	1-5	1.50-1.70	6.0-20	0.03-0.07	3.6-5.5	<2	Low	0.10		
Ru	0-12	<10	1.35-1.60	6.0-20	0.06-0.10	3.6-5.5	<2	Low	0.17	5	3-15
Rutlege	12-72	<10	1.40-1.60	6.0-20	0.04-0.08	3.6-5.5	<2	Low	0.17		

See footnote at end of table.

TABLE 15.--PHYSICAL AND CHEMICAL PROPERTIES OF THE SOILS--Continued

Map symbol and soil name	Depth	Clay	Moist bulk density	Permeability	Available water capacity	Soil reaction	Salinity	Shrink-swell potential	Erosion factors		Organic matter
									K	T	
	In	Pct	G/cm	In/hr	In/in	pH	mmhos/cm				Pct
SfA, SfB---------	0-14	4-10	1.40-1.50	2.0-20	0.05-0.10	3.6-6.5	<2	Low---------	0.24	4	.5-1
Suffolk	14-44	10-33	1.40-1.50	0.6-2.0	0.10-0.15	3.6-5.5	<2	Low---------	0.24		
	44-56	4-10	1.40-1.50	2.0-20	0.04-0.10	3.6-5.5	<2	Low---------	0.17		
SmA---------	0-6	10-18	1.40-1.60	0.6-6.0	0.09-0.12	4.5-6.5	<2	Low---------	0.28	5	<1
Summerton	6-61	35-70	1.30-1.50	0.2-0.6	0.10-0.14	4.5-5.5	<2	Low---------	0.28		
Ud.*											
Udorthents											
Udipsamments											
Wa----------	0-11	5-20	1.30-1.60	0.6-2.0	0.10-0.15	4.5-6.0	<2	Low---------	0.24	5	.5-5
Wahee	11-56	35-55	1.40-1.60	0.06-0.2	0.12-0.20	3.6-5.5	<2	Moderate----	0.28		
	56-65	---	---	0.2-0.6	0.12-0.20	3.6-5.5	<2	Moderate----	0.28		
We----------	0-22	1-5	1.35-1.60	>20	0.05-0.08	4.5-6.5	<2	Low---------	0.10	5	.5-2
Witherbee	22-80	1-8	1.40-1.70	6.0-20	0.03-0.08	4.5-6.5	<2	Low---------	0.10		
Wo----------	0-14	5-18	1.45-1.65	2.0-6.0	0.10-0.15	3.6-6.0	<2	Low---------	0.20	5	2-4
Woodington	14-58	5-18	1.45-1.65	2.0-6.0	0.10-0.15	3.6-5.5	<2	Low---------	0.20		
	58-84	3-18	1.45-1.65	2.0-20	0.06-0.15	3.6-5.5	<2	Low---------	0.10		
YaA---------	0-8	10-20	1.30-1.60	2.0-6.0	0.10-0.15	4.5-6.5	<2	Low---------	0.20	5	.5-4
Yauhannah	8-40	18-35	1.30-1.50	0.6-2.0	0.11-0.16	4.5-6.0	<2	Low---------	0.24		
	40-48	10-30	1.30-1.50	2.0-6.0	0.10-0.15	4.5-6.0	<2	Low---------	0.24		
	48-72	5-15	1.30-1.60	2.0-20	0.06-0.12	4.5-6.0	<2	Low---------	0.17		
Ye----------	0-14	5-15	1.40-1.60	6.0-20	0.06-0.11	3.6-6.0	<2	Low---------	0.15	5	.5-4
Yemassee	14-46	18-35	1.30-1.50	0.6-2.0	0.11-0.18	3.6-5.5	<2	Low---------	0.20		
	46-56	12-40	1.30-1.50	0.6-2.0	0.11-0.17	3.6-5.5	<2	Low---------	0.20		
	56-72	---	---	---	---	---	---	----------	----		
Yo----------	0-16	10-20	1.30-1.60	0.6-2.0	0.11-0.15	5.1-7.8	<2	Low---------	0.20	5	1-5
Yonges	16-68	18-35	1.30-1.60	0.2-0.6	0.13-0.18	5.1-8.4	<2	Low---------	0.17		

* 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 more than. Absence of an entry indicates that the feature is not a concern or that data were not estimated]

Map symbol and soil name	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
Bc.* Beaches									
Bd** Bladen	D	None	---	---	+1-1.0	Apparent	Dec-May	High	High.
BnA Blanton	A	None	---	---	5.0-6.0	Perched	Dec-Mar	High	High.
Bo** Bohicket	D	Frequent	Very brief	Jan-Dec	+3-0	Apparent	Jan-Dec	High	High.
Br Brookman	D	None	---	---	0-1.0	Apparent	Nov-May	Moderate	Moderate.
Ce Centenary	B	None	---	---	3.5-5.0	Apparent	Dec-Mar	Moderate	High.
ChB Chisolm	A	None	---	---	3.5-5.0	Apparent	Jan-Mar	Low	High.
Co Coxville	D	None	---	---	0-1.5	Apparent	Nov-Apr	High	High.
DuA Duplin	C	None	---	---	2.0-3.0	Apparent	Dec-Apr	High	High.
Ec Echaw	B	None	---	---	2.5-5.0	Apparent	Nov-Apr	Low	High.
EmB Emporia	C	None	---	---	3.0-4.5	Perched	Nov-Apr	Moderate	High.
EuA, EuB Eulonia	C	None	---	---	1.5-3.5	Apparent	Dec-May	Moderate	High.
GoA Goldsboro	B	None	---	---	2.0-3.0	Apparent	Dec-Apr	Moderate	High.
Ho** Hobcaw	D	None	---	---	+1-1.0	Apparent	Nov-Apr	High	High.
Hy** Hobonny	D	Frequent	Very long	Jan-Dec	+1-0	Apparent	Jan-Dec	High	High.
Jo** Johnston	D	Frequent	Brief to long.	Nov-Jul	+1-1.5	Apparent	Nov-Jun	High	High.
KeB Kenansville	A	None	---	---	4.0-6.0	Apparent	Dec-Apr	Low	High.
LaB Lakeland	A	None	---	---	>6.0	---	---	Low	Moderate.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
Le---------- Leon	B/D	None--------	---	---	0-1.0	Apparent	Jun-Feb	High-----	High.
Ln---------- Lynchburg	C	None--------	---	---	0.5-1.5	Apparent	Nov-Apr	High-----	High.
Ly---------- Lynn Haven	B/D	None--------	---	---	0-1.0	Apparent	Jun-Feb	High-----	High.
Me---------- Meggett	D	Frequent----	Long------	Dec-Apr	0-1.0	Apparent	Nov-Apr	High-----	Moderate.
NaB---------- Nankin	C	None--------	---	---	>6.0	---	---	High-----	High.
NeA---------- Nansemond	C	None--------	---	---	1.5-2.5	Apparent	Dec-Apr	Moderate	High.
NhB---------- Newhan	A	None--------	---	---	>6.0	---	---	High-----	Low.
NoA---------- Norfolk	B	None--------	---	---	3.0-6.0	Apparent	Jan-Mar	Moderate	High.
Og---------- Ogeechee	B/D	None--------	---	---	0-0.5	Apparent	Dec-May	High-----	High.
Os---------- Osier	A/D	Frequent----	Brief-----	Dec-Apr	0-1.0	Apparent	Nov-Mar	High-----	High.
Po---------- Pocomoke	B/D	None--------	---	---	0-0.5	Apparent	Dec-May	High-----	High.
RmB---------- Rimini	A	None--------	---	---	>6.0	---	---	Low------	Low.
Ru**---------- Rutlege	B/D	None--------	---	---	+2-1.0	Apparent	Dec-May	High-----	High.
SfA, SfB---------- Suffolk	B	None--------	---	---	>6.0	---	---	Moderate	High.
SmA---------- Summerton	B	None--------	---	---	>6.0	---	---	High-----	High.
Ud.* Udorthents Udipsamments									
Wa---------- Wahee	D	None--------	---	---	0.5-1.5	Apparent	Dec-Mar	High-----	High.
We---------- Witherbee	A/D	None--------	---	---	1.0-2.0	Apparent	Nov-Apr	Low------	High.
Wo---------- Woodington	B/D	None--------	---	---	0.5-1.0	Apparent	Dec-May	High-----	High.

See footnote at end of table.

TABLE 16.--SOIL AND WATER FEATURES--Continued

Map symbol and soil name	Hydrologic group	Flooding			High water table			Risk of corrosion	
		Frequency	Duration	Months	Depth	Kind	Months	Uncoated steel	Concrete
					Ft				
YaA---------- Yauhannah	B	None--------	---	---	1.5-2.5	Apparent	Dec-Mar	Moderate	High.
Ye---------- Yemassee	C	None--------	---	---	1.0-1.5	Apparent	Dec-Mar	High-----	High.
Yo---------- Yonges	D	None--------	---	---	0-1.0	Apparent	Nov-Apr	High-----	Moderate.

* See description of the map unit for composition and behavior characteristics of the map unit.

** In the "High water table--Depth" column, 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.

TABLE 17.--ENGINEERING INDEX TEST DATA

[All soils except Bladen are the typical pedon for the series. Their location is described in the "Classification of the Soils" section. Dashes indicate data were not available. NP means nonplastic]

Series name, report number, horizon and depth in inches	Classification		Grain-size distribution							Liquid limit	Plasticity index
			Percentage passing sieve--				Percentage smaller than--				
	AASHTO	Unified	No. 4	No. 10	No. 60	No. 200	.02 mm	.005 mm	.002 mm		
										Pct	
Bladen* (S77SC051-7											
Ap--------- 0 to 6	A-2-4(0)	SM	100	100	88	35	---	21	---	---	NP
Btg1-------10 to 24	A-6(10)	CL	100	100	99	66	---	54	---	40	19
Cg---------58 to 72	A-3(0)	SP-SM	100	100	91	6	---	5	---	---	NP
Brookman: (S77SC051-6)											
Ap--------- 0 to 10	A-4(05)	ML	100	100	93	59	---	41	---	32	7
Btg2-------22 to 46	A-7-6(19)	CH	100	100	97	82	---	68	---	54	37
Bcg--------46 to 60	A-2-4(0)	SM-SC	100	100	92	32	---	24	---	23	7
Duplin: (S80SC051-6)											
A---------- 0 to 9	A-2-4(0)	SM	100	100	98	23	---	8	---	---	NP
Bt1--------17 to 28	A-6(10)	CL	100	100	100	68	---	50	---	38	19
Bt2--------28 to 35	A-7-6(17)	CL	100	100	100	79	---	53	---	48	27
Lynchburg: (S80SC051-1)											
Ap--------- 0 to 8	A-2-4(0)	SP-SM	100	99	97	11	---	40	---	---	NP
Btg--------13 to 42	A-6(07)	CL	100	100	99	60	---	37	---	34	16
Bcg--------42 to 58	A-6(06)	CL	100	100	99	56	---	32	---	33	14
Norfolk: (S80SC051-3)											
Ap--------- 0 to 13	A-4(0)	SM	100	100	93	37	---	8	---	---	NP
Bt1--------16 to 39	A-6(04)	CL	100	100	94	52	---	30	---	27	12
Bt2--------39 to 46	A-6(07)	CL	100	100	96	57	---	34	---	34	16
Osier: (S80SC051-8)											
A---------- 0 to 8	A-2-4(0)	SM	100	100	71	22	---	18	---	---	NP
Cg1-------- 8 to 21	A-2-4(0)	SM	100	100	71	17	---	14	---	---	NP
Cg2--------21 to 48	A-3(0)	SP-SM	100	100	76	7	---	5	---	---	NP
Summerton: (S80SC051-12)											
Ap-------- 0 to 6	A-4(04)	ML	100	100	90	54	---	11	---	---	NP
Bt2--------12 to 26	A-7-6(13)	CL	100	100	95	79	---	43	---	43	22
Bt3--------26 to 37	A-7-6(14)	CL	100	100	90	81	---	46	---	46	21
Yemassee: (S77SC-51-3)											
A---------- 0 to 7	A-2-4(0)	SM	100	100	92	25	---	15	---	---	NP
Btg1-------14 to 28	A-6(04)	SC	100	100	95	47	---	37	---	32	14
Btg2--------28 to 46	A-6(07)	CL	100	100	97	51	---	43	---	39	20

* About 5 miles southwest of Socastee, about 1.2 mile southwest of St. James Church and school, about 0.6 mile northwest of South Carolina Hwy. 544, about 400 feet northeast of road; Map 89.

TABLE 18.--CLASSIFICATION OF THE SOILS

Soil name	Family or higher taxonomic class
Bladen	Clayey, mixed, thermic Typic Albaquults
Blanton	Loamy, siliceous, thermic Grossarenic Paleudults
Bohicket	Fine, mixed, nonacid, thermic Typic Sulfaquents
Brookman	Fine, mixed, thermic Typic Umbraqualfs
*Centenary	Sandy, siliceous, thermic Grossarenic Entic Haplohumods
Chisolm	Loamy, siliceous, thermic Arenic Hapludults
Coxville	Clayey, kaolinitic, thermic Typic Paleaquults
Duplin	Clayey, kaolinitic, thermic Aquic Paleudults
Echaw	Sandy, siliceous, thermic Entic Haplohumods
Emporia	Fine-loamy, siliceous, thermic Typic Hapludults
Eulonia	Clayey, mixed, thermic Aquic Hapludults
Goldsboro	Fine-loamy, siliceous, thermic Aquic Paleudults
Hobcaw	Fine-loamy, siliceous, thermic Typic Umbraquults
Hobonny	Euic, thermic Typic Medisaprists
Johnston	Coarse-loamy, siliceous, acid, thermic Cumulic Humaquepts
*Kenansville	Loamy, siliceous, thermic Arenic Hapludults
Lakeland	Thermic, coated Typic Quartzipsamments
Leon	Sandy, siliceous, thermic Aeric Haplaquods
Lynchburg	Fine-loamy, siliceous, thermic Aeric Paleaquults
Lynn Haven	Sandy, siliceous, thermic Typic Haplaquods
*Meggett	Fine, mixed, thermic Typic Albaqualfs
Nankin	Clayey, kaolinitic, thermic Typic Hapludults
Nansemond	Coarse-loamy, siliceous, thermic Aquic Hapludults
Newhan	Thermic, uncoated Typic Quartzipsamments
Norfolk	Fine-loamy, siliceous, thermic Typic Paleudults
Ogeechee	Fine-loamy, siliceous, thermic Typic Ochraquults
Osier	Siliceous, thermic Typic Psammaquents
Pocomoke	Coarse-loamy, siliceous, thermic Typic Umbraquults
Rimini	Sandy, siliceous, thermic Grossarenic Entic Haplohumods
Rutlege	Sandy, siliceous, thermic Typic Humaquepts
*Suffolk	Fine-loamy, siliceous, thermic Typic Hapludults
*Summerton	Clayey, kaolinitic, thermic Typic Paleudults
Udipsamments	Udipsamments
Udorthents	Udorthents
Wahee	Clayey, mixed, thermic Aeric Ochraquults
Witherbee	Sandy, siliceous, thermic Entic Haplaquods
*Woodington	Coarse-loamy, siliceous, thermic Typic Paleaquults
Yauhannah	Fine-loamy, siliceous, thermic Aquic Hapludults
Yemassee	Fine-loamy, siliceous, thermic Aeric Ochraquults
Yonges	Fine-loamy, mixed, thermic Typic Ochraqualfs

* The soil is a taxadjunct to the series. See text for a description of those characteristics of the soil that are outside the range of the series.

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LEGEND

NEARLY LEVEL AND GENTLY SLOPING SOILS THAT HAVE A LOAMY SUBSOIL

1 — Woodington-Goldsboro-Pocomoke: Poorly drained, moderately well drained, and very poorly drained soils that have a loamy or sandy surface layer and a loamy subsoil; on broad, nearly level and slightly concave areas

2 — Nansemond-Pocomoke-Kenansville: Moderately well drained, very poorly drained, and well drained soils that have a sandy or loamy surface layer and a loamy subsoil; on broad, nearly level and gently sloping areas

3 — Goldsboro-Kenansville-Woodington: Moderately well drained, well drained, and poorly drained soils that have a sandy or loamy surface layer and a loamy subsoil; on broad, nearly level and gently sloping areas

NEARLY LEVEL AND GENTLY SLOPING SOILS THAT HAVE A CLAYEY OR LOAMY SUBSOIL

4 — Eulonia-Bladen-Wahee: Moderately well drained, poorly drained, and somewhat poorly drained soils that have a loamy or sandy surface layer and a clayey or loamy subsoil; on nearly level and gently sloping areas

5 — Yauhannah-Ogeechee-Bladen: Moderately well drained and poorly drained soils that have a loamy or sandy surface layer and a loamy or clayey subsoil; on broad, nearly level areas

6 — Yonges-Meggett: Poorly drained soils that have a loamy surface layer and a loamy or clayey subsoil; in drainageways, on flood plains, and on nearly level areas

7 — Brookman-Bladen: Very poorly drained and poorly drained soils that have a loamy surface layer and a clayey subsoil; in broad, nearly level depressions and on flats

NEARLY LEVEL AND GENTLY SLOPING SOILS THAT HAVE A SANDY OR LOAMY SUBSOIL

8 — Pocomoke-Echaw-Centenary: Very poorly drained and moderately well drained soils that have a loamy or sandy surface layer and a loamy or sandy subsoil; in drainageways and on nearly level areas

9 — Lynn Haven-Leon: Poorly drained soils that are sandy throughout; in drainageways and on nearly level areas

10 — Lakeland-Leon-Newhan: Excessively drained and poorly drained soils that are sandy throughout; in drainageways, on broad ridges and slopes, and on dunes

NEARLY LEVEL SOILS IN FLOOD PLAIN AREAS AND DRAINAGEWAYS

11 — Johnston-Rutlege: Poorly drained soils that are loamy or sandy throughout; in drainageways and on flood plains

12 — Hobonny: Poorly drained soils that are organic throughout; on flood plains

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U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
SOUTH CAROLINA AGRICULTURAL EXPERIMENT STATION
SOUTH CAROLINA LAND RESOURCES CONSERVATION COMMISSION

GENERAL SOIL MAP
HORRY COUNTY
SOUTH CAROLINA

Scale 1:253,440

1 0 1 2 3 4 Miles

1 0 4 8 Km

Each area outlined on this map consists of more than one kind of soil. The map is thus meant for general planning rather than a basis for decisions on the use of specific tracts.

SOIL LEGEND

The first capital letter is the initial one of the soil name. The second position is used to further identify the map units and to identify additional mapping units that have the same initial capital letter. The second position is a lower case letter. The third position, if used, is a capital letter and connotes slope class. Symbols without a slope letter are for nearly level soils.

SYMBOL	NAME
Bc	Beaches
Bd	Bladen fine sandy loam
BnA	Blanton sand, 0 to 6 percent slopes
Bo	Bohicket silty clay loam
Br	Brookman loam
Ce	Centenary fine sand
ChB	Chisolm fine sand, 0 to 6 percent slopes
Co	Coxville fine sandy loam
DuA	Duplin loamy fine sand, 0 to 2 percent slopes
Ec	Echaw sand
EmB	Emporia loamy fine sand, 2 to 6 percent slopes
EuA	Eulonia loamy fine sand, 0 to 2 percent slopes
EuB	Eulonia loamy fine sand, 2 to 6 percent slopes
GoA	Goldsboro loamy fine sand, 0 to 2 percent slopes
Ho	Hobcaw fine sandy loam
Hy	Hobonny muck
Jo	Johnston loam
KeB	Kenansville fine sand, 0 to 6 percent slopes
LaB	Lakeland sand, 0 to 6 percent slopes
Le	Leon fine sand
Ln	Lynchburg loamy fine sand
Ly	Lynn Haven sand
Me	Meggett loam
NaB	Nankin fine sandy loam, 2 to 6 percent slopes
NeA	Nansemond loamy fine sand, 0 to 2 percent slopes
NhB	Newhan fine sand, 0 to 6 percent slopes
NoA	Norfolk loamy fine sand, 0 to 2 percent slopes
Og	Ogeechee loamy fine sand
Os	Osier loamy sand
Po	Pocomoke fine sandy loam
RmB	Rimini sand, 0 to 6 percent slopes
Ru	Rutlege loamy sand
SfA	Suffolk loamy fine sand, 0 to 2 percent slopes
SfB	Suffolk loamy fine sand, 2 to 6 percent slopes
SmA	Summerton fine sandy loam, 0 to 2 percent slopes
Ud	Udorthents and Udipsamments, well drained
Wa	Wahee fine sandy loam
We	Witherbee sand
Wo	Woodington fine sandy loam
YaA	Yauhannah fine sandy loam, 0 to 2 percent slopes
Ye	Yemassee loamy fine sand
Yo	Yonges fine sandy loam

CONVENTIONAL AND SPECIAL SYMBOLS LEGEND

CULTURAL FEATURES

BOUNDARIES

- National, state or province
- County or parish
- Minor civil division
- Reservation (national forest or park, state forest or park, and large airport)
- Land grant
- Limit of soil survey (label)
- Field sheet matchline & neatline

AD HOC BOUNDARY (label)

- Small airport, airfield, park, oilfield, cemetery, or flood pool

STATE COORDINATE TICK

LAND DIVISION CORNERS (sections and land grants)

ROADS

- Divided (median shown if scale permits)
- Other roads
- Trail

ROAD EMBLEM & DESIGNATIONS

- Interstate
- Federal
- State
- County, farm or ranch

RAILROAD

POWER TRANSMISSION LINE (normally not shown)

PIPE LINE (normally not shown)

FENCE (normally not shown)

LEVEES

- Without road
- With road
- With railroad

DAMS

- Large (to scale)
- Medium or small

PITS

- Gravel pit
- Mine or quarry

MISCELLANEOUS CULTURAL FEATURES

- Farmstead, house (omit in urban areas)
- Church
- School
- Indian mound (label)
- Located object (label)
- Tank (label)
- Wells, oil or gas
- Windmill
- Kitchen midden

WATER FEATURES

DRAINAGE

- Perennial, double line
- Perennial, single line
- Intermittent
- Drainage end
- Canals or ditches
  - Double-line (label)
  - Drainage and/or irrigation

LAKES, PONDS AND RESERVOIRS

- Perennial
- Intermittent

MISCELLANEOUS WATER FEATURES

- Marsh or swamp
- Spring
- Well, artesian
- Well, irrigation
- Wet spot

SPECIAL SYMBOLS FOR SOIL SURVEY

SOIL DELINEATIONS AND SYMBOLS

ESCARPMENTS

- Bedrock (points down slope)
- Other than bedrock (points down slope)

SHORT STEEP SLOPE

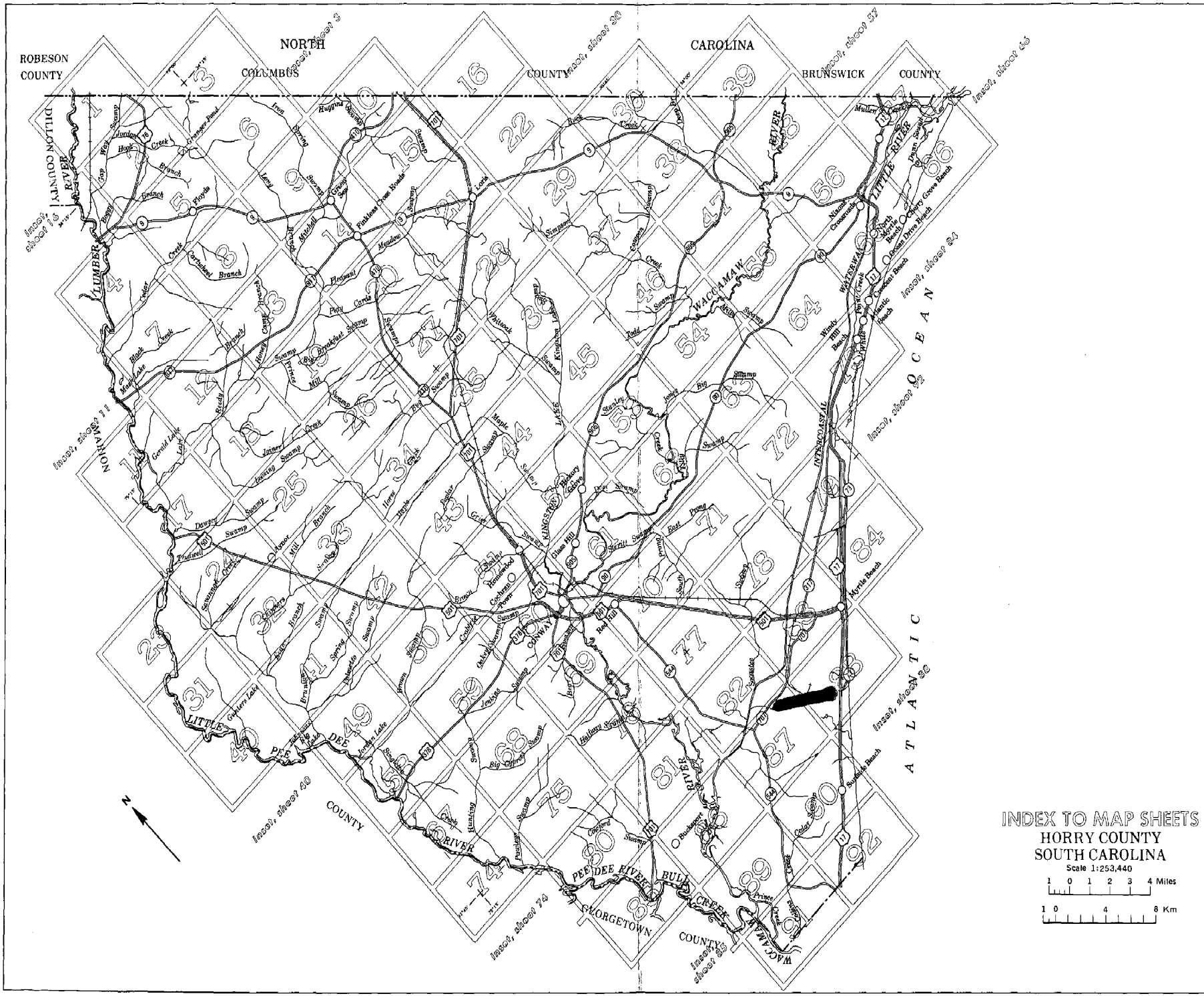
GULLY

DEPRESSION OR SINK

SOIL SAMPLE SITE (normally not shown)

MISCELLANEOUS

- Blowout
- Clay spot
- Gravelly spot
- Gumbo, slick or scabby spot (sodic)
- Dumps and other similar non soil areas
- Prominent hill or peak
- Rock outcrop (includes sandstone and shale)
- Saline spot
- Sandy spot
- Severely eroded spot
- Slide or slip (tips point upslope)
- Stony spot, very stony spot



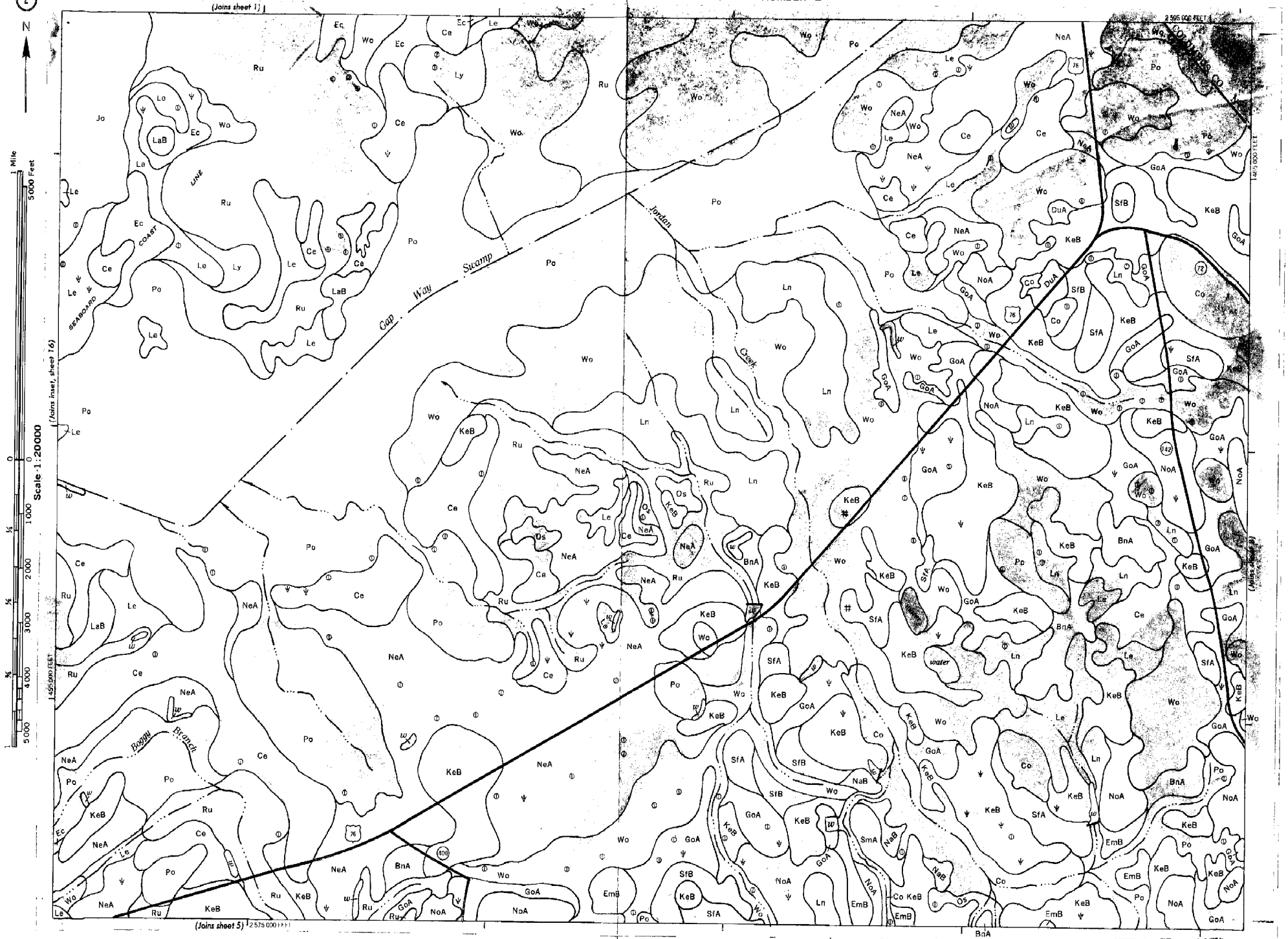
INDEX TO MAP SHEETS
HORRY COUNTY
SOUTH CAROLINA

Scale 1:253,440

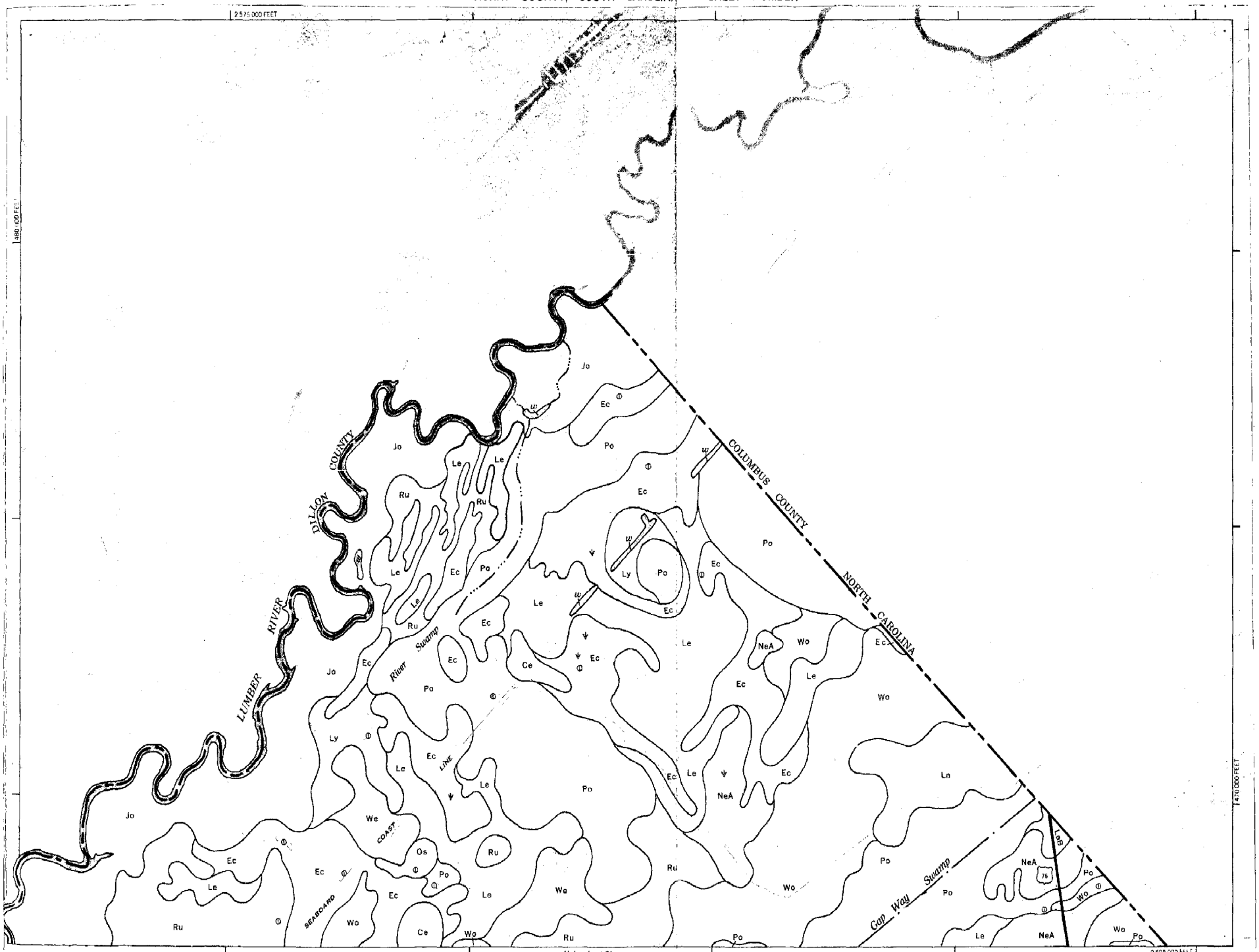
1 0 1 2 3 4 Miles

1 0 4 8 Km

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 2



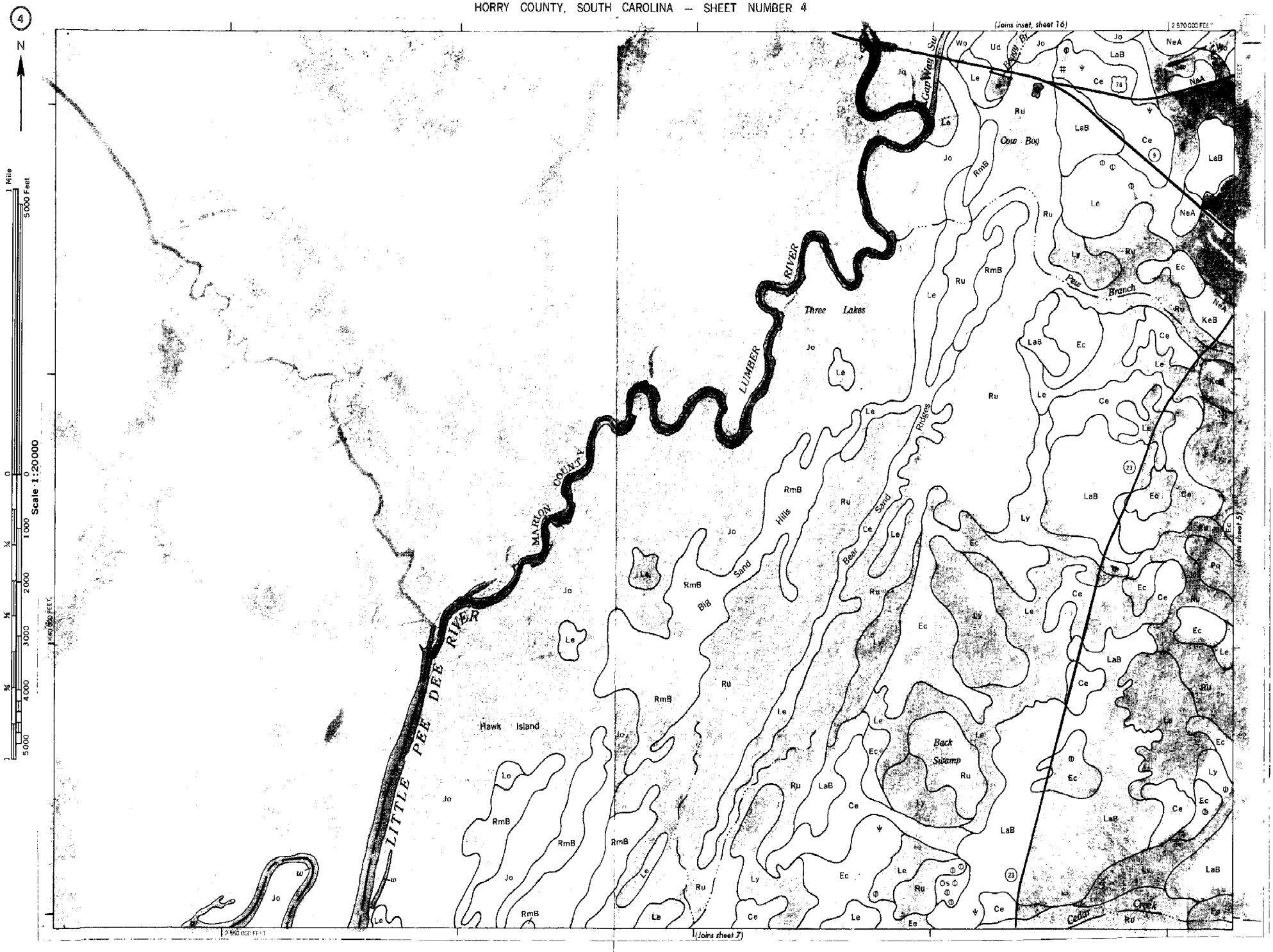
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 1



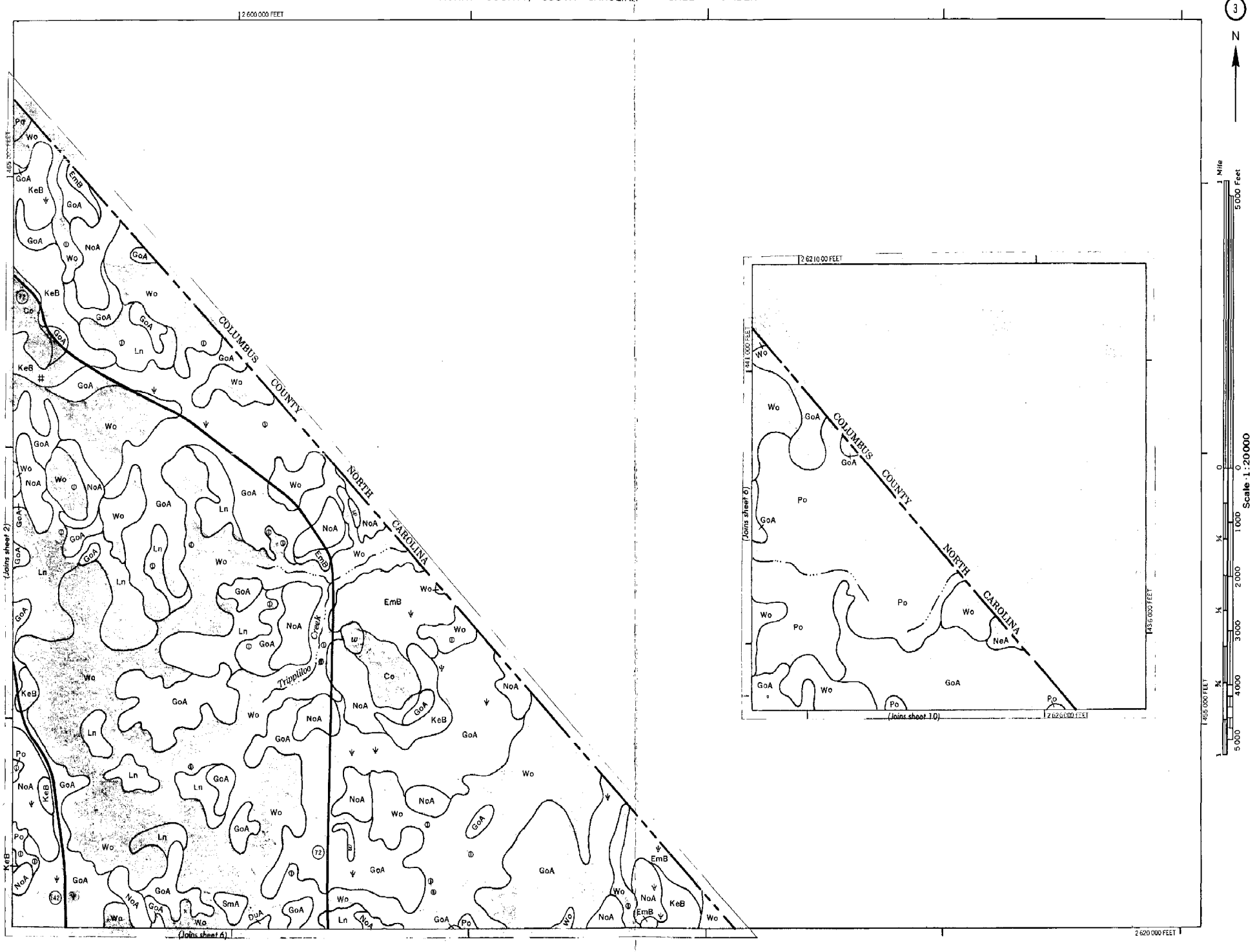
N

Scale 1:20000

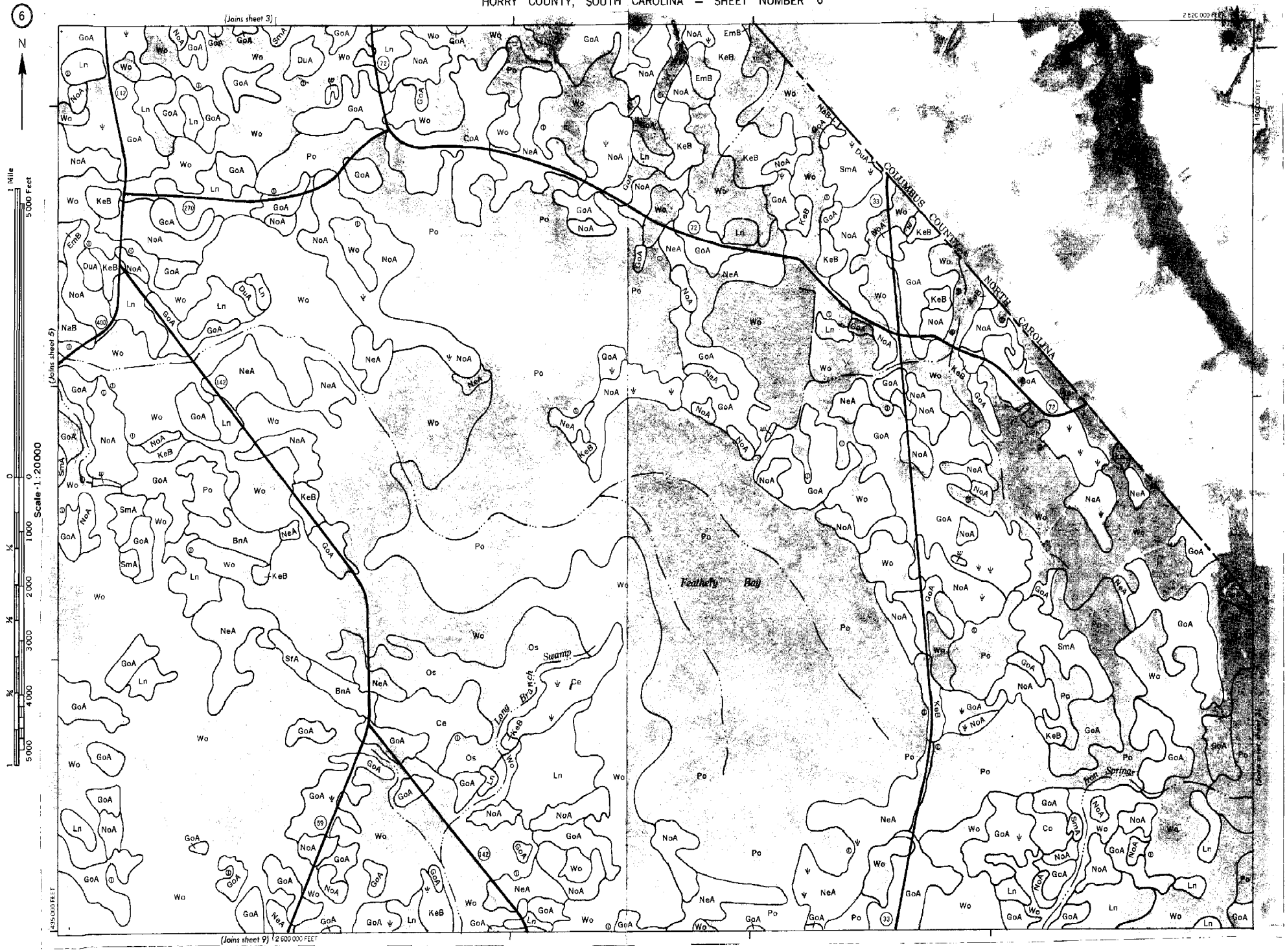
1 Mile 5000 Feet


4
N
1 Mile
5000 Feet
Scale 1:20000
(Joins inset, sheet 16)
2 570 000 FEET
(Joins sheet 7)
(Joins sheet 5)
2 550 000 FEET
LITTLE PEE DEE RIVER
MARION COUNTY
LUMBER RIVER
Three Lakes
Hawk Island
Big Sand Hills
Bear Sand Ridges
Cow Bog
Back Swamp
Pew Branch
Cedar Creek
Gap Way Sw
Boggy Br
Jo
Le
Ru
RmB
Ce
LaB
Ly
Ec
NeA
KeB
Wo
Ud
Os
Po

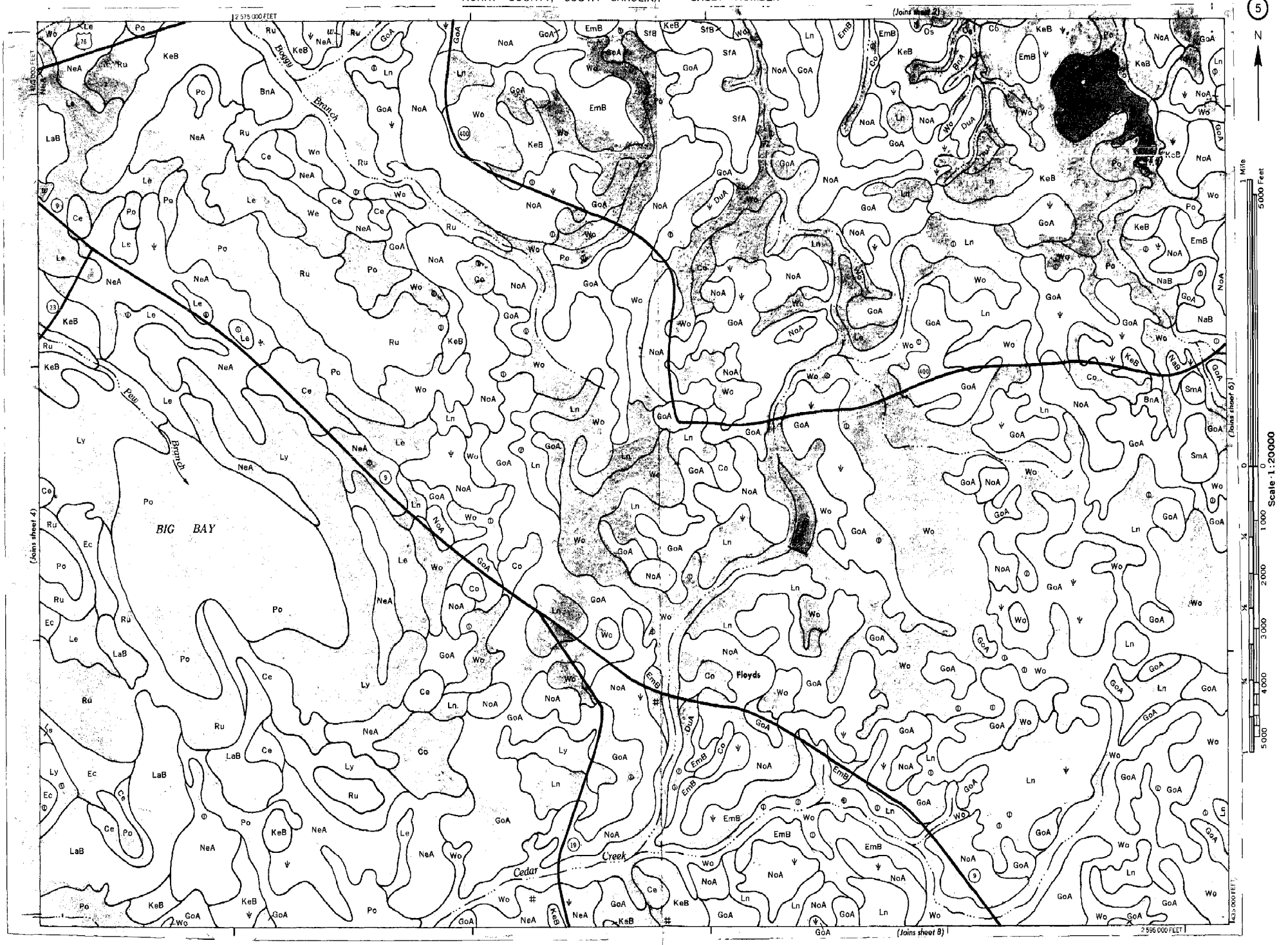
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 3



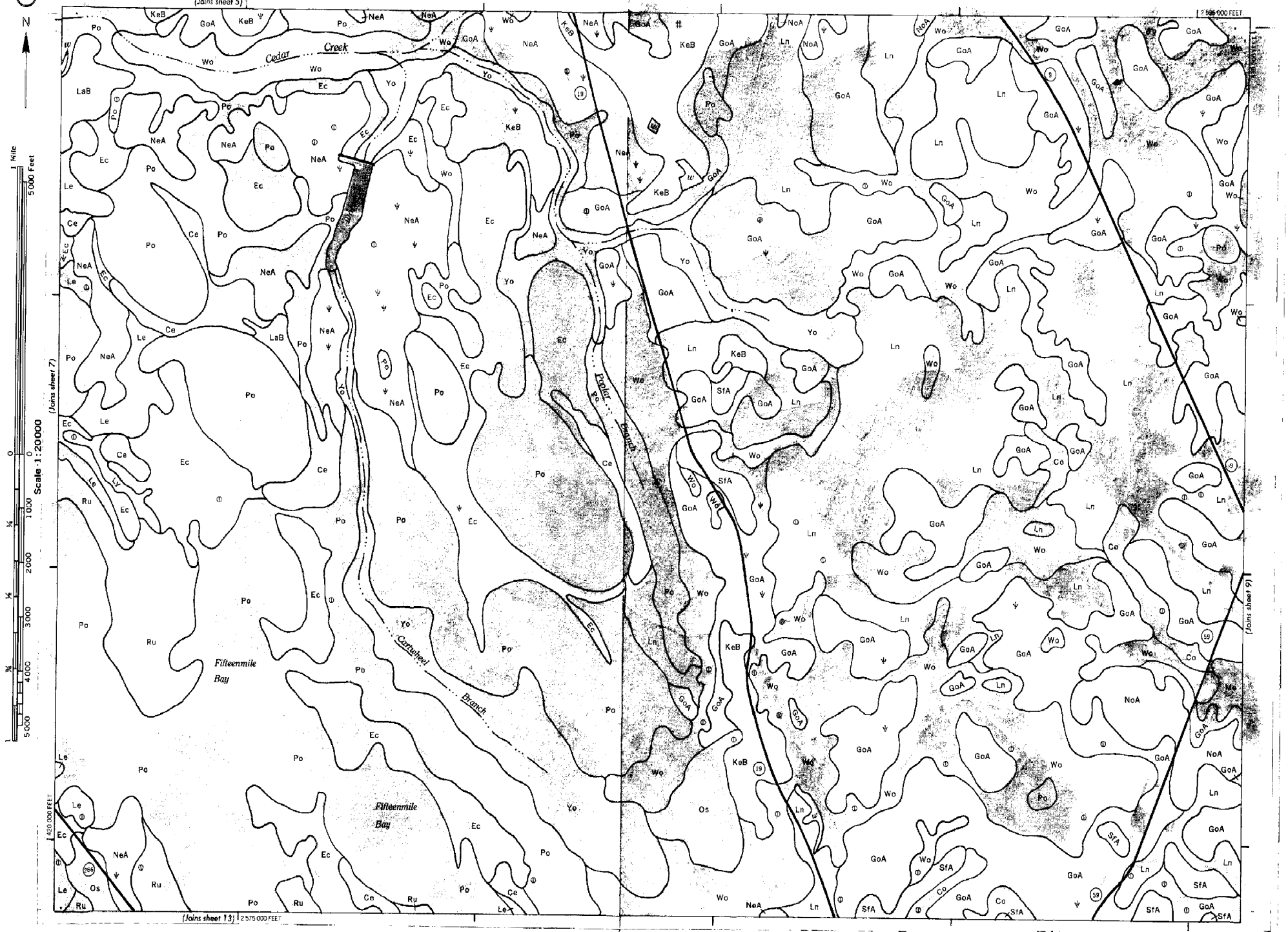
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 6



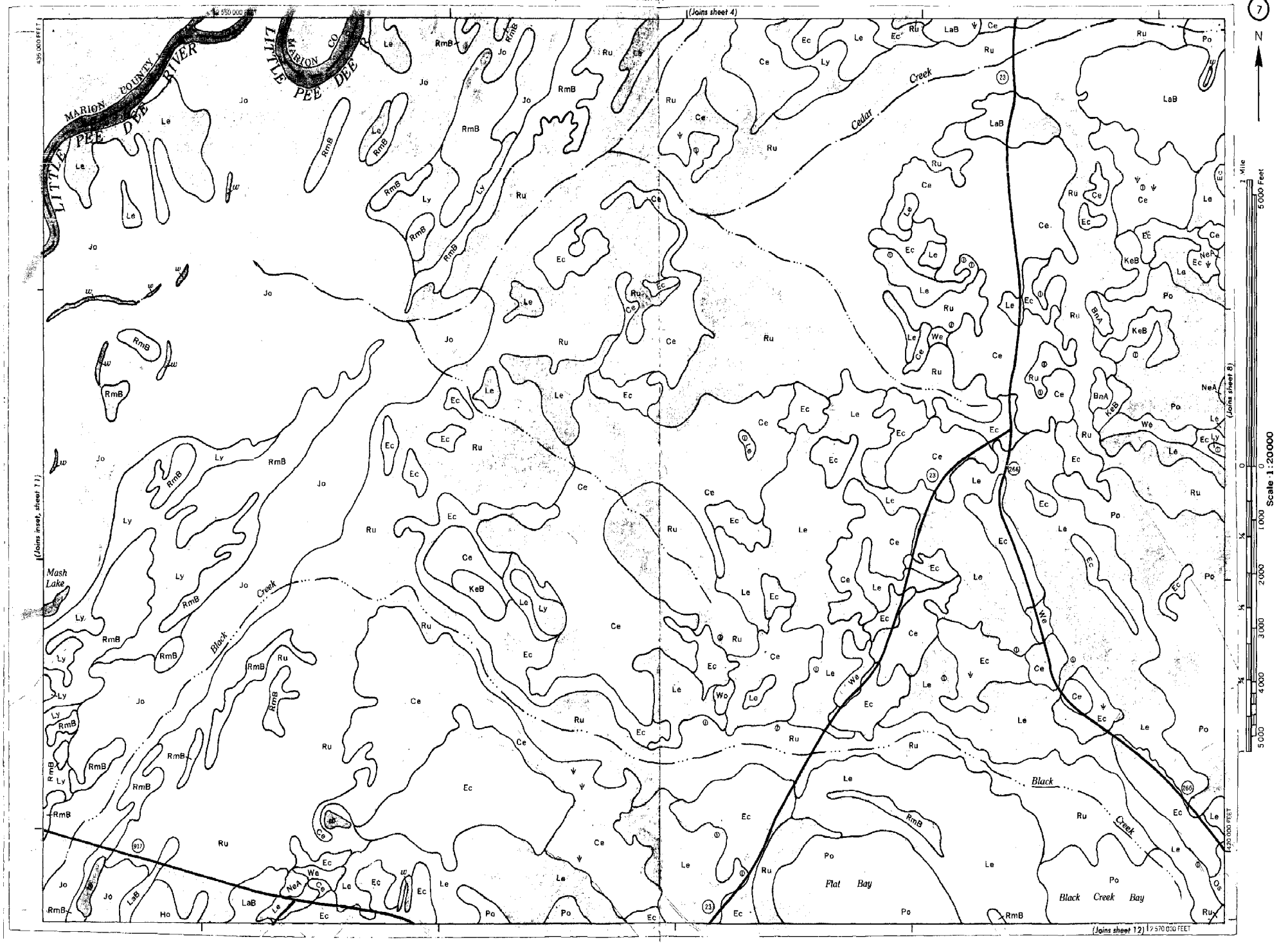
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 5

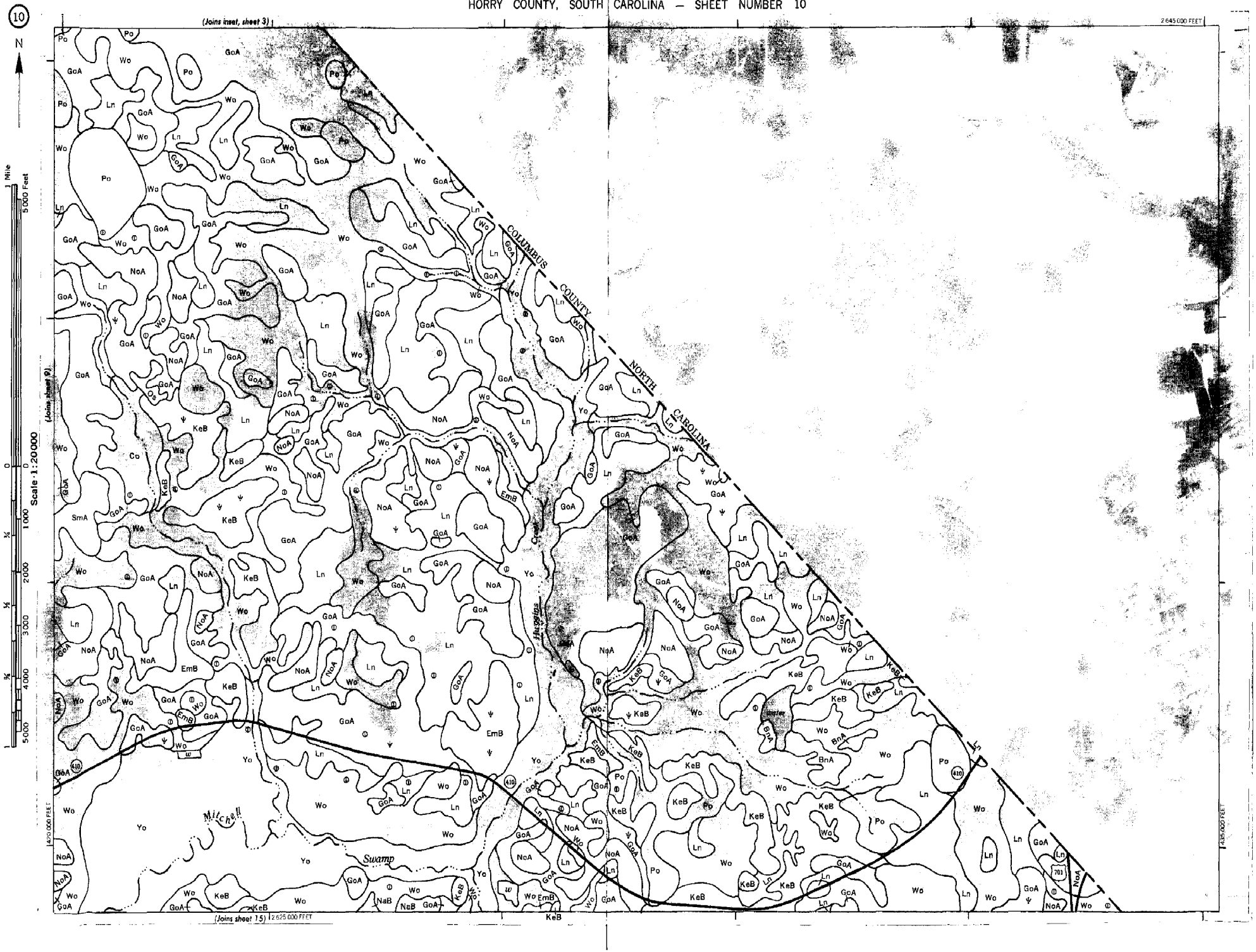


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 8



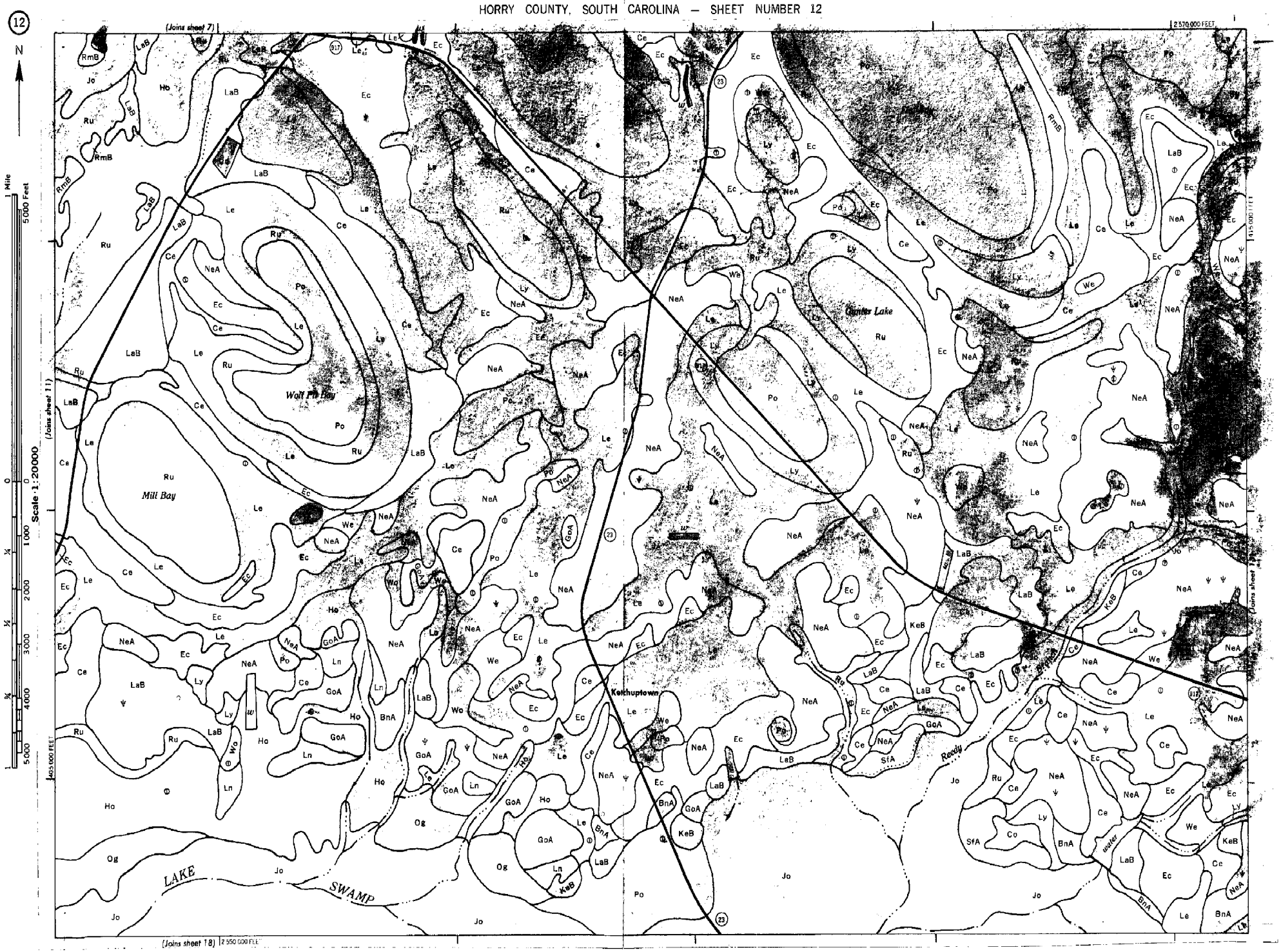
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 7



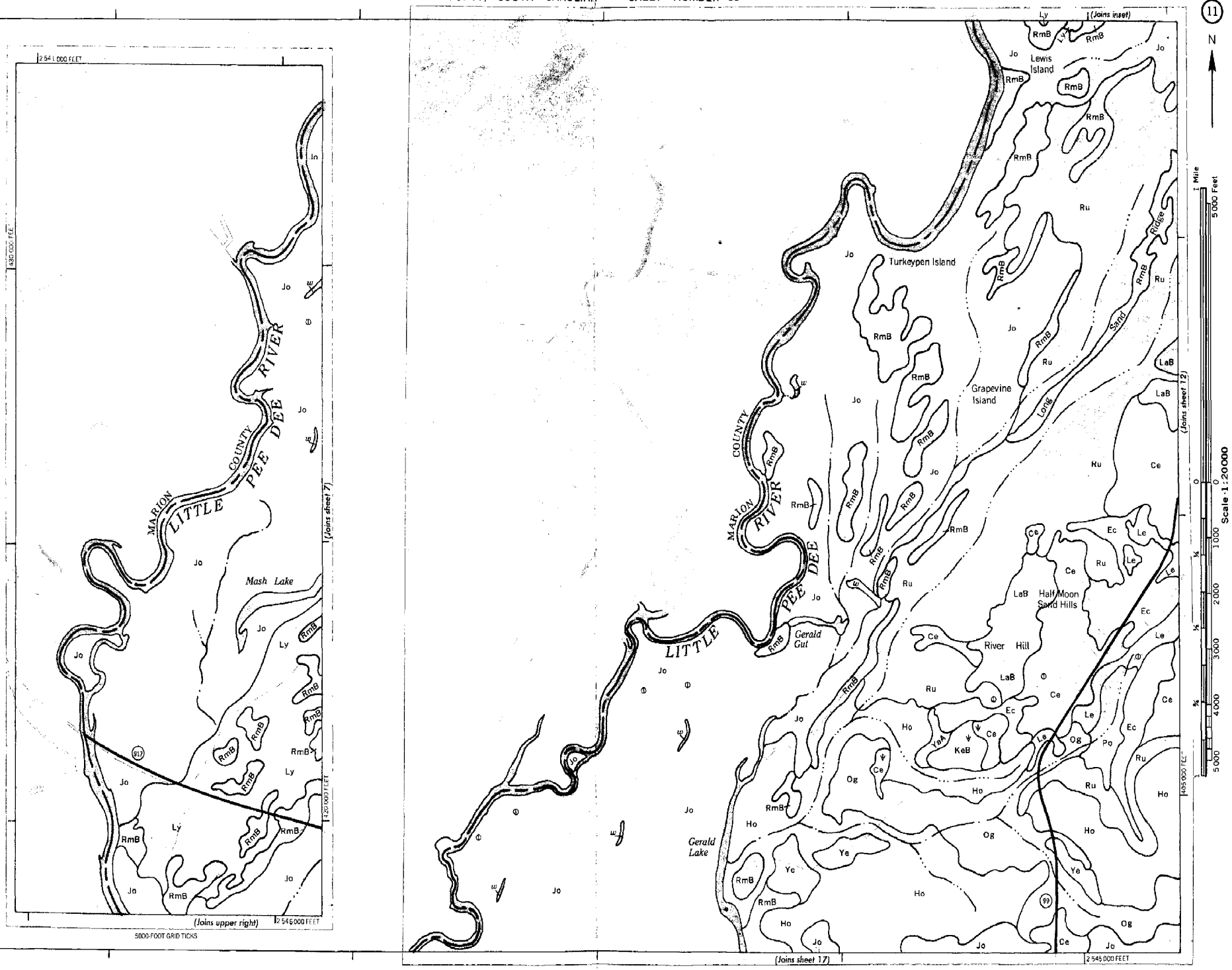

10
N
(Joins inset, sheet 3)
(Joins sheet 9)
(Joins sheet 15)
2 645 000 FEET
2 625 000 FEET
420 000 FEET
435 000 FEET
COLUMBUS COUNTY
NORTH CAROLINA
Huggins Creek
Mitchell Swamp
Scale 1:20000
1 Mile
5000 Feet
0
1000
2000
3000
4000
5000
410
701

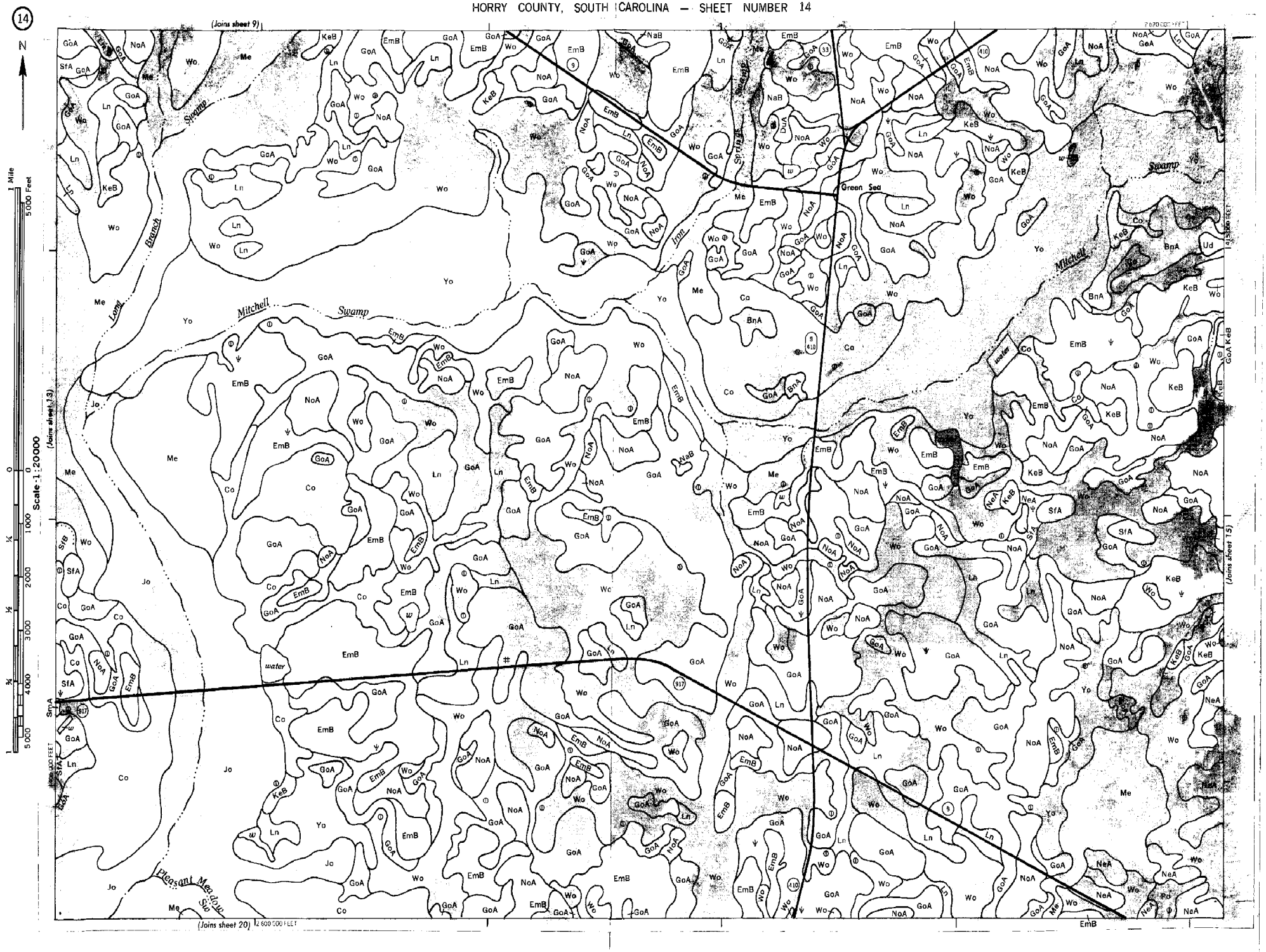
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 9

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 12

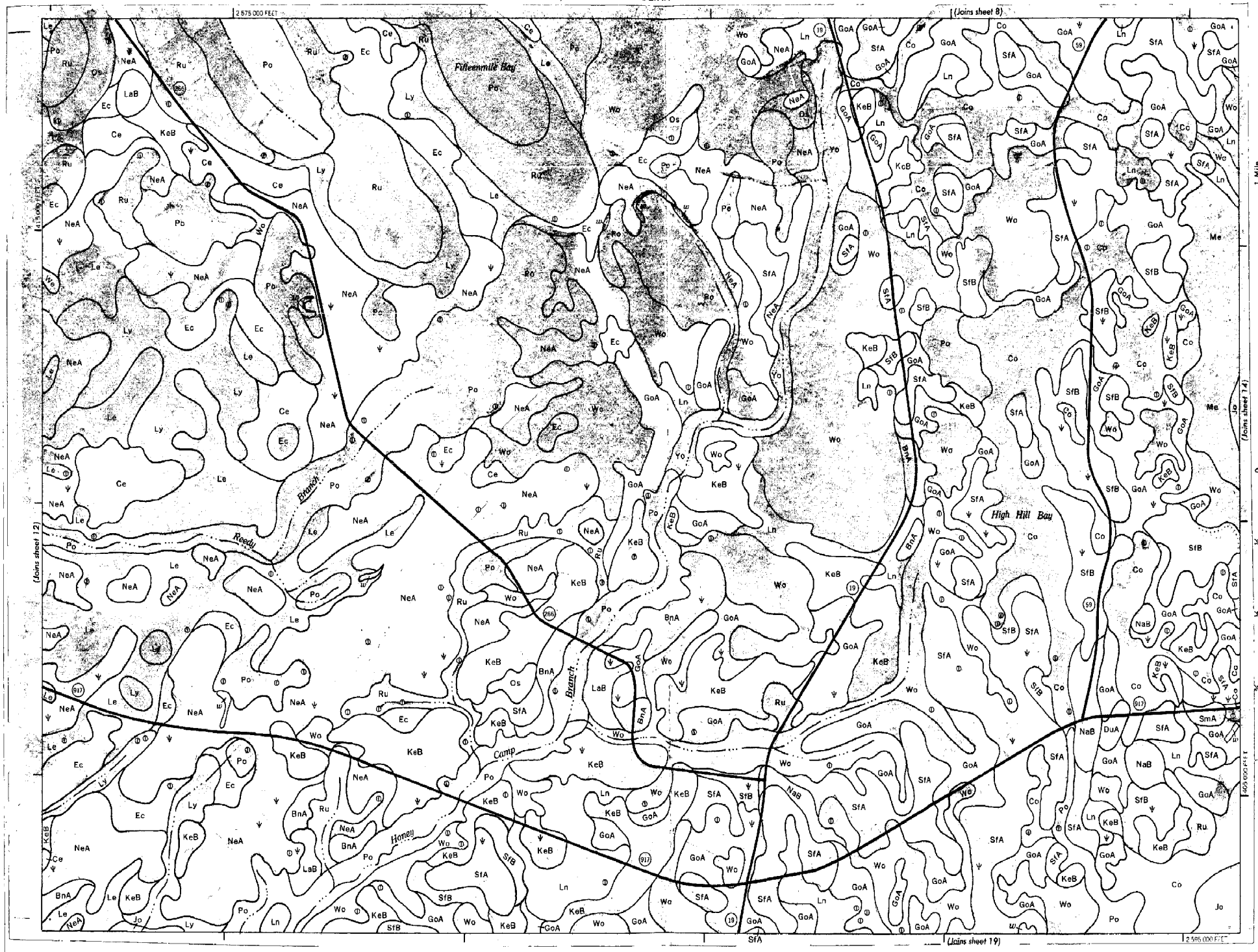


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 11



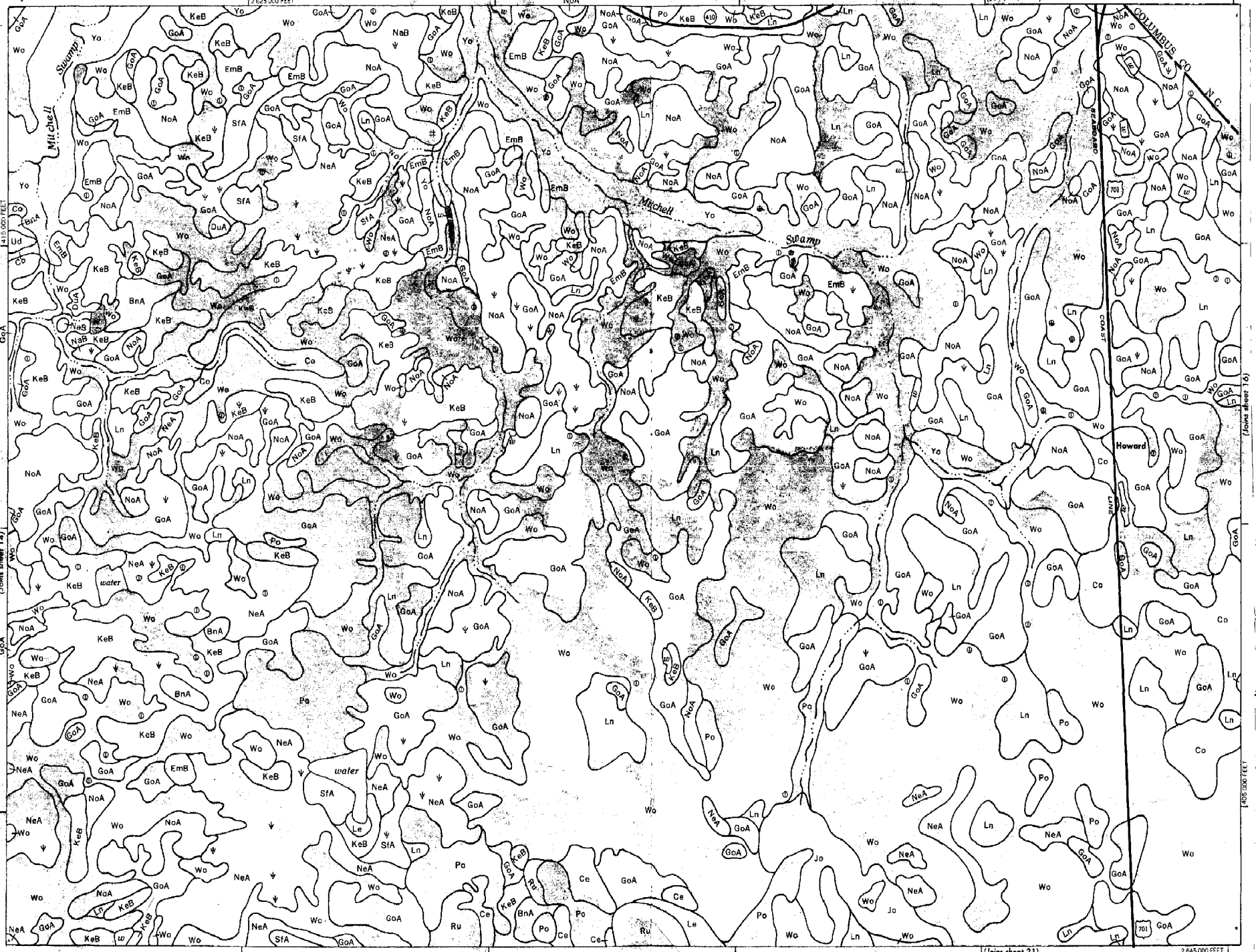

14
N
(Joins sheet 9)
(Joins sheet 13)
(Joins sheet 15)
(Joins sheet 20)
Scale 1:20000
1 Mile
5000 Feet
Green Sea
Mitchell
Swamp
Long Branch
Pleasant Meadow Sub
water

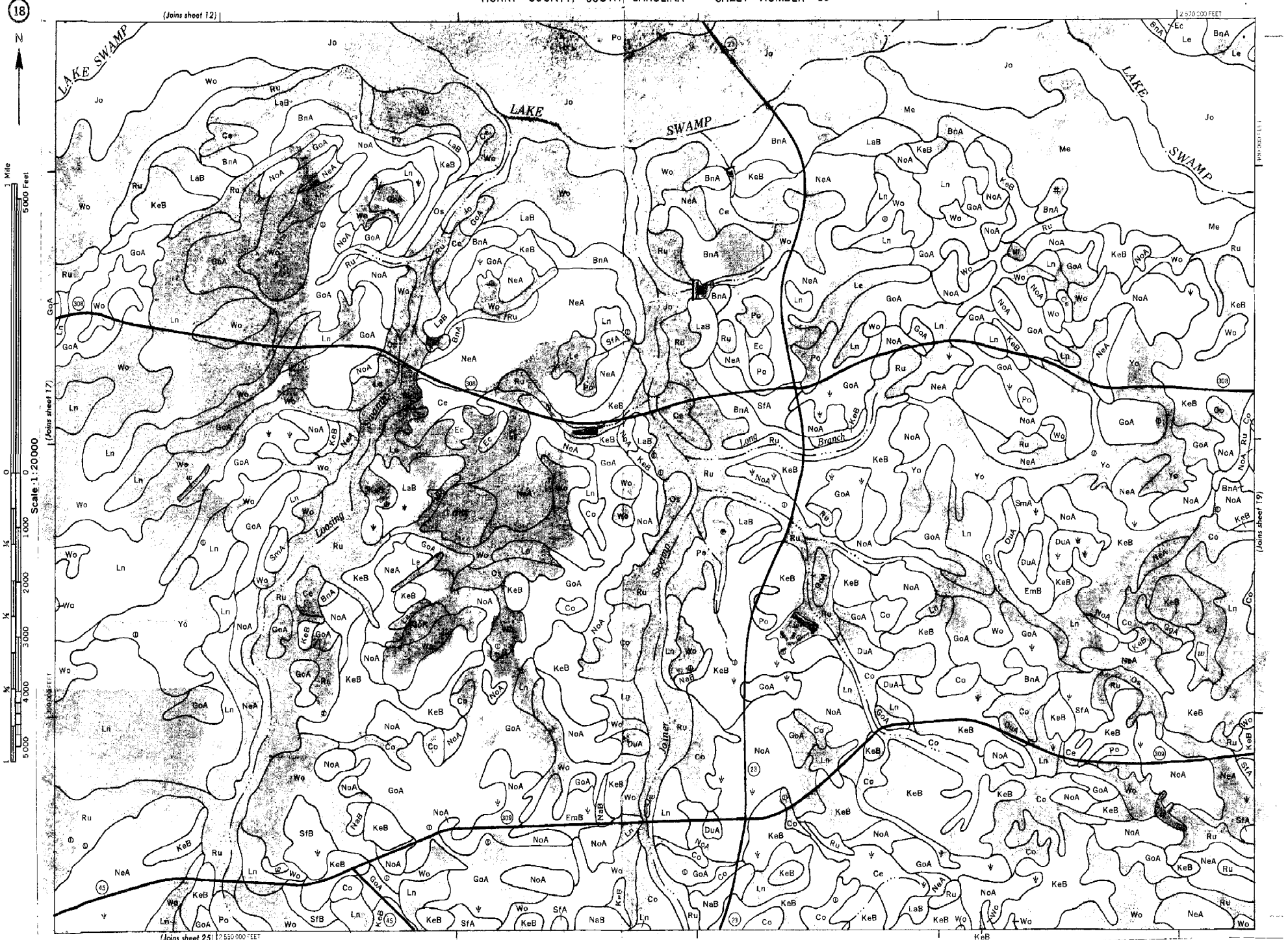
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 13



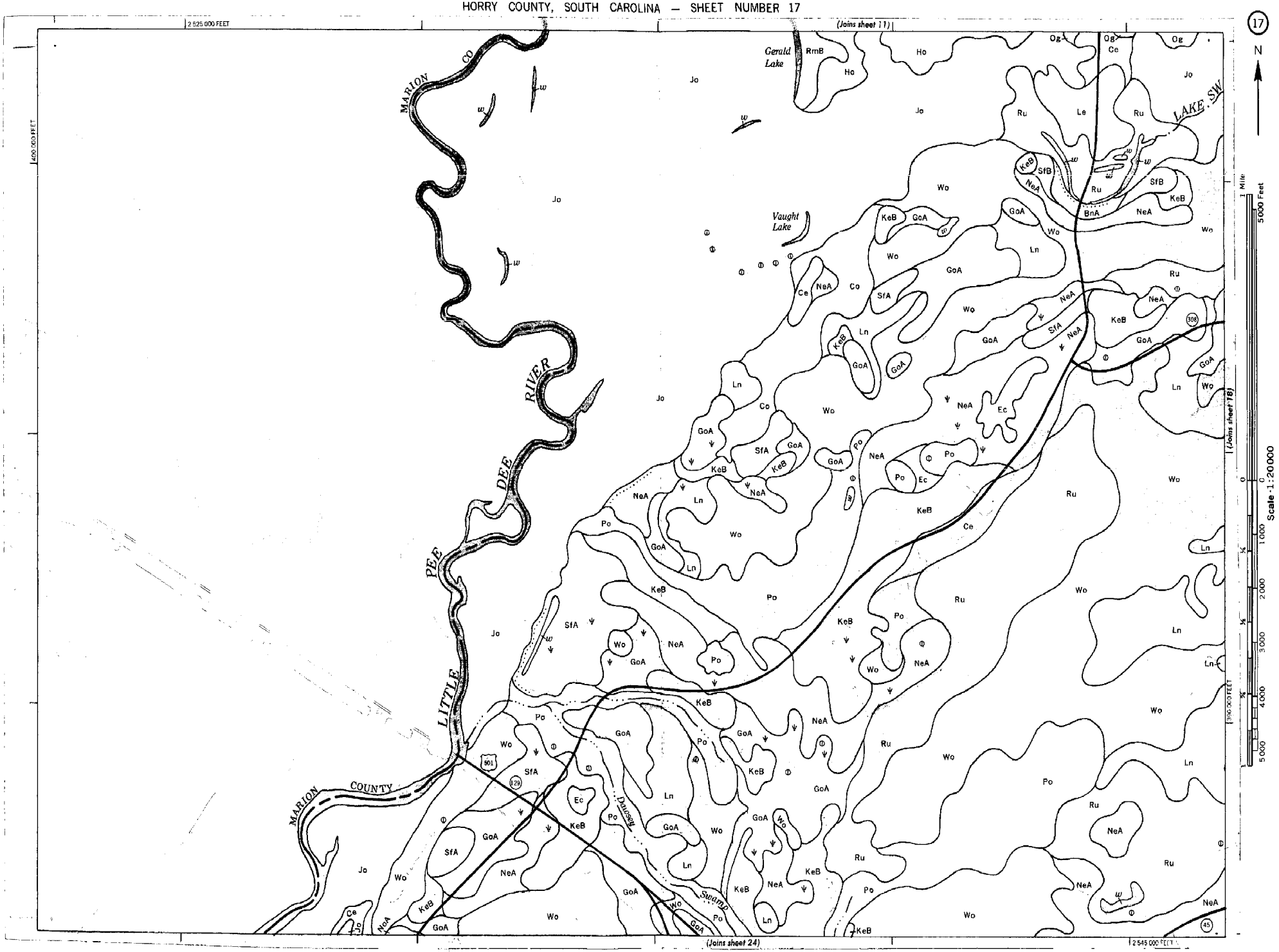
16
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 15)
(Joins sheet 22)
(Joins sheet 1)
(Joins sheet 2)
(Joins sheet 4)
COLUMBUS COUNTY
NORTH CAROLINA
DILLON COUNTY
MARION COUNTY
LUMBER RIVER
SEABOARD COAST LINE
Gap Way Swamp
Boggy Branch
2 645 000 FEET
2 655 000 FEET
2 570 000 FEET
2 565 000 FEET
405 000 FEET
415 000 FEET
465 000 FEET
455 000 FEET

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 15




18
N
(Joins sheet 12)
(Joins sheet 17)
(Joins sheet 19)
(Joins sheet 25)
LAKE SWAMP
LAKE SWAMP
LAKE SWAMP
Loosing Swamp
Long Branch
Joiner Swamp
Scale 1:20000
1 Mile
5000 Feet
2 570 000 FEET
2 550 000 FEET

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 17



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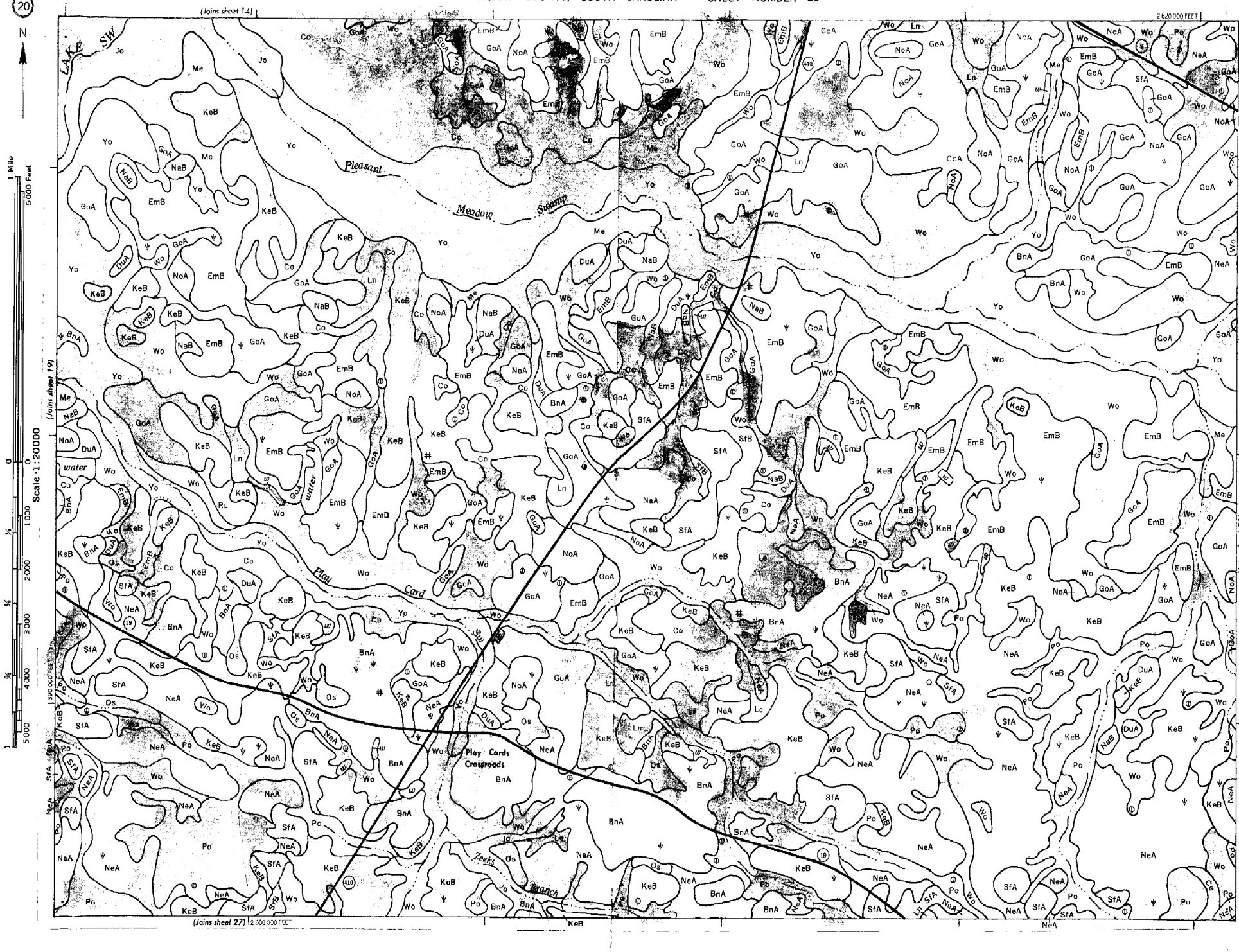
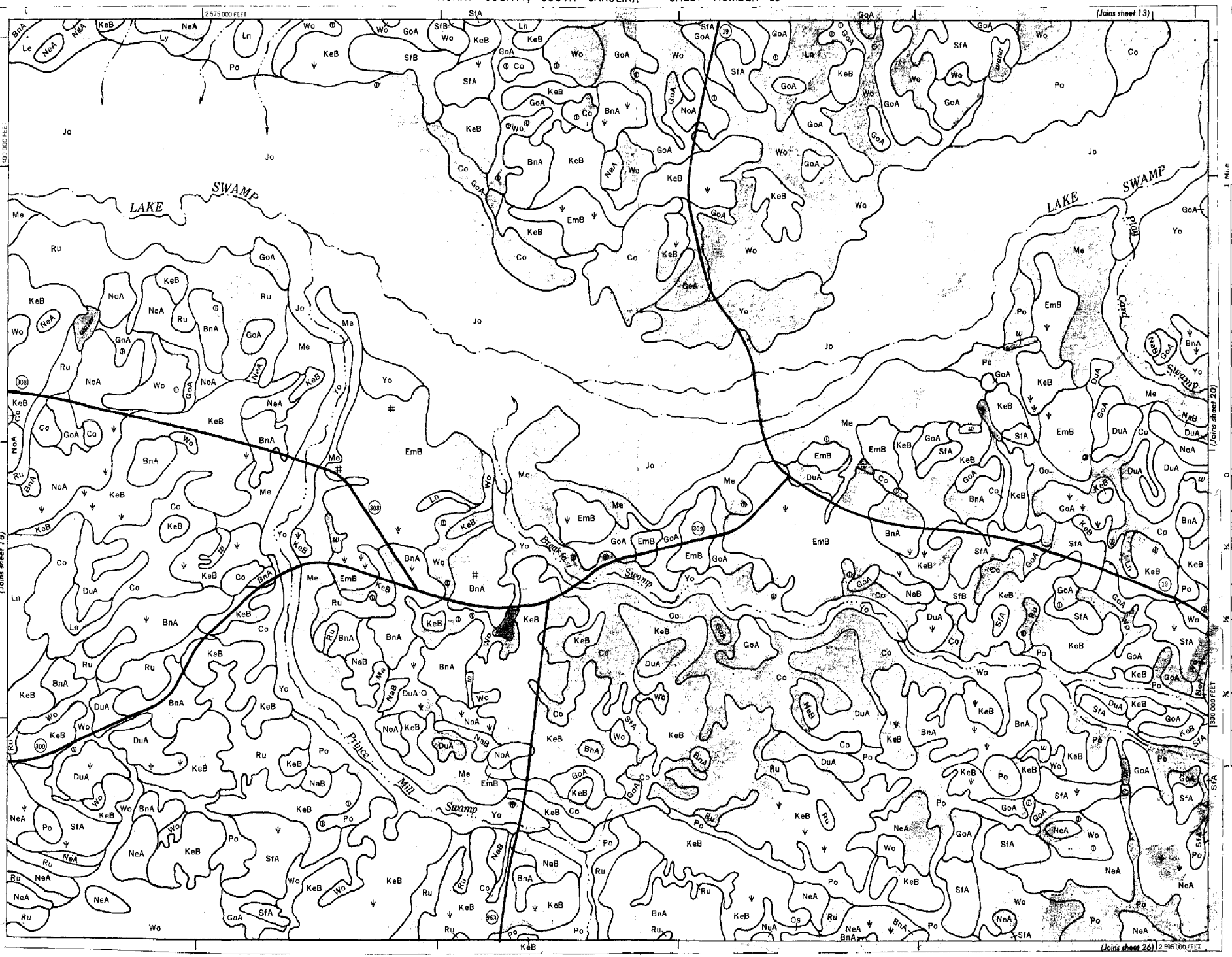
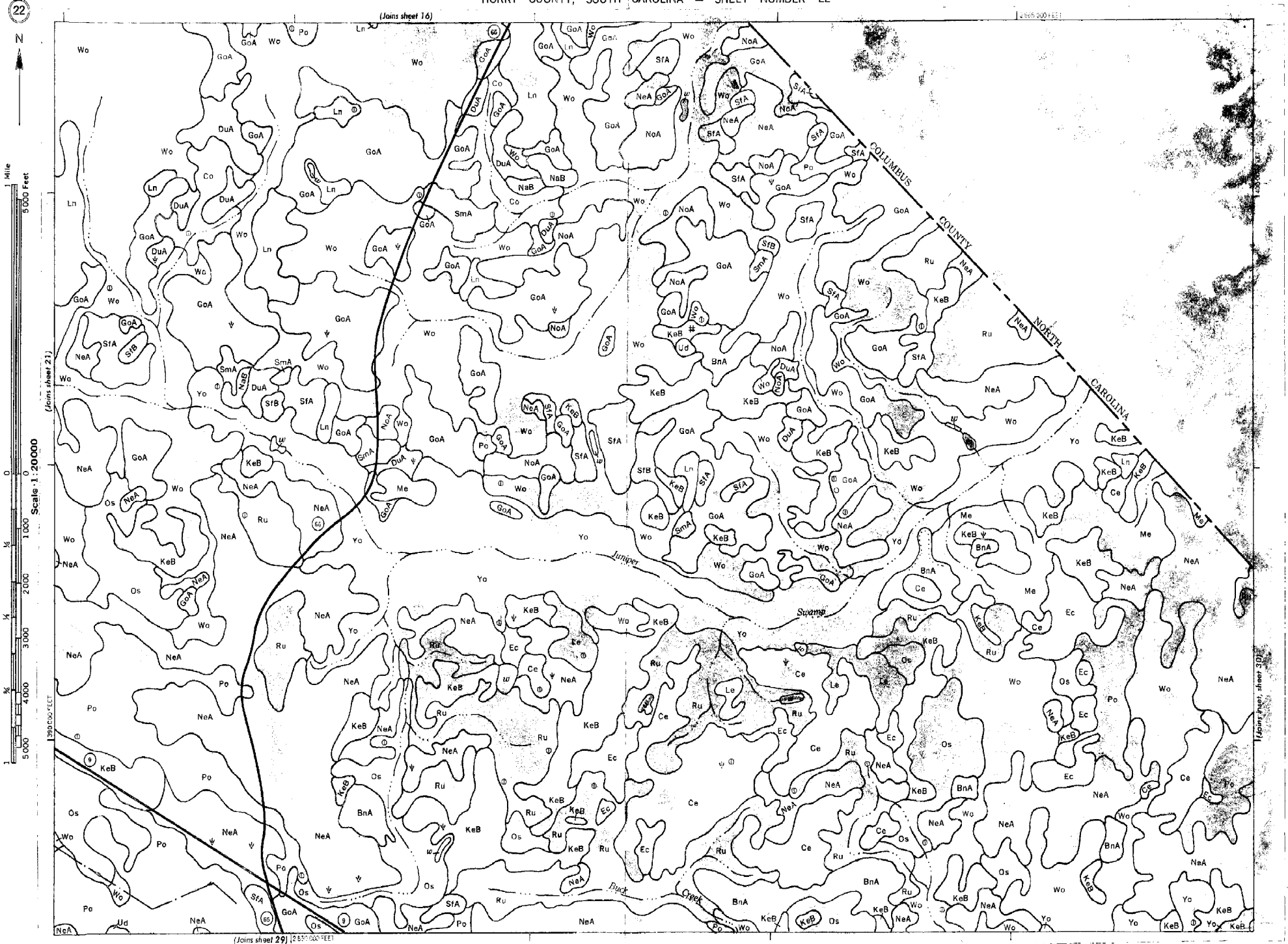


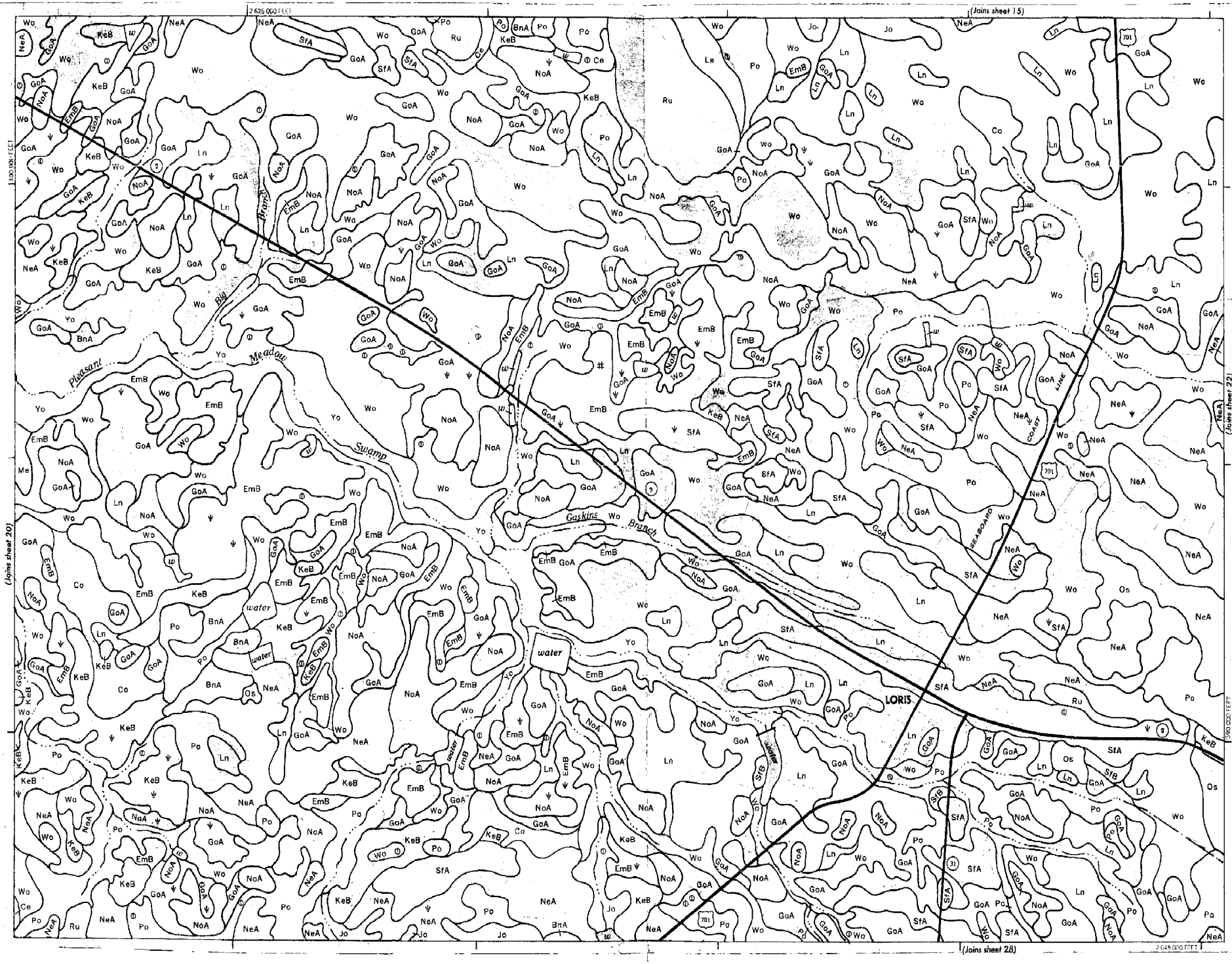
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 19

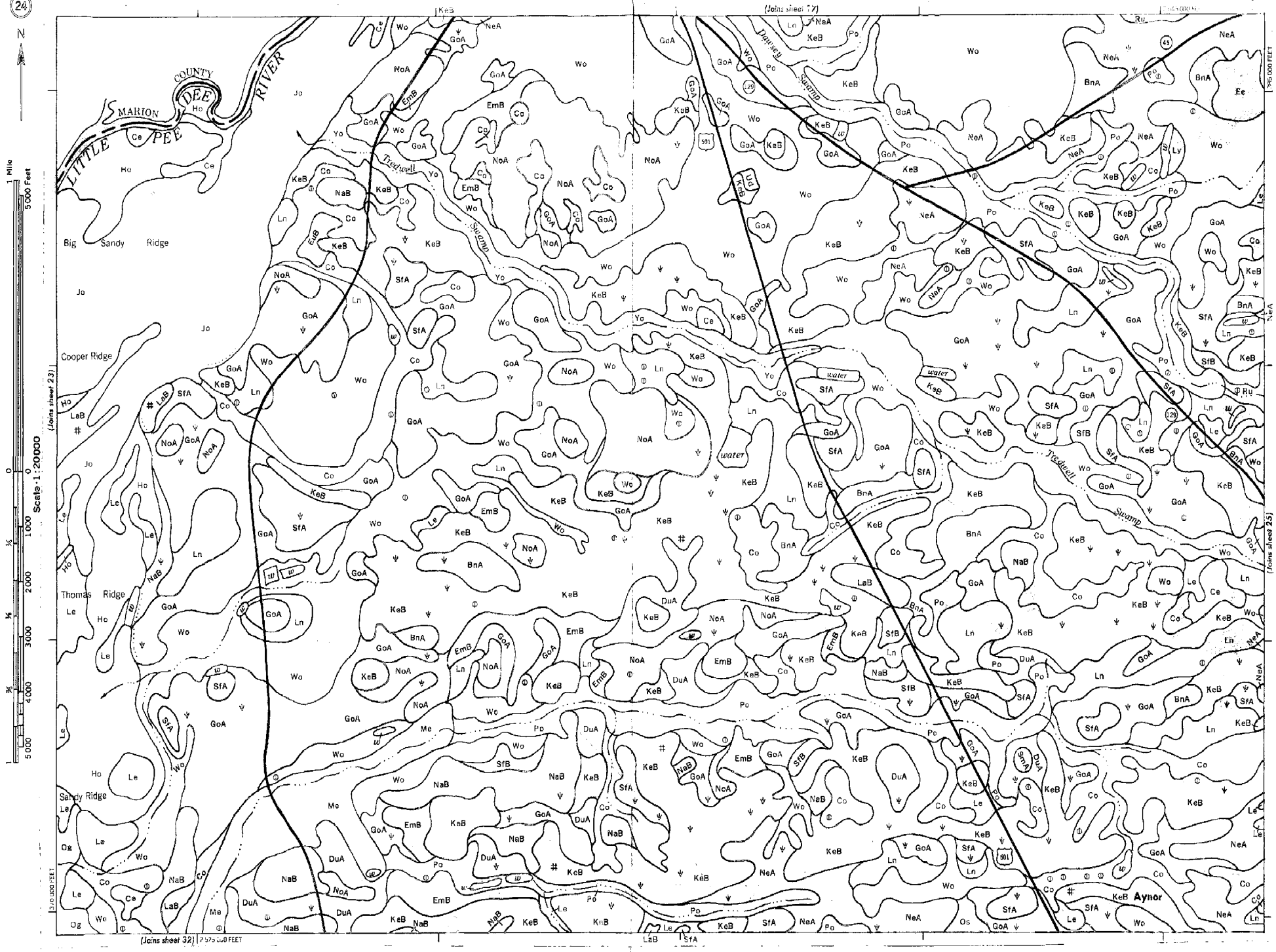


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 22

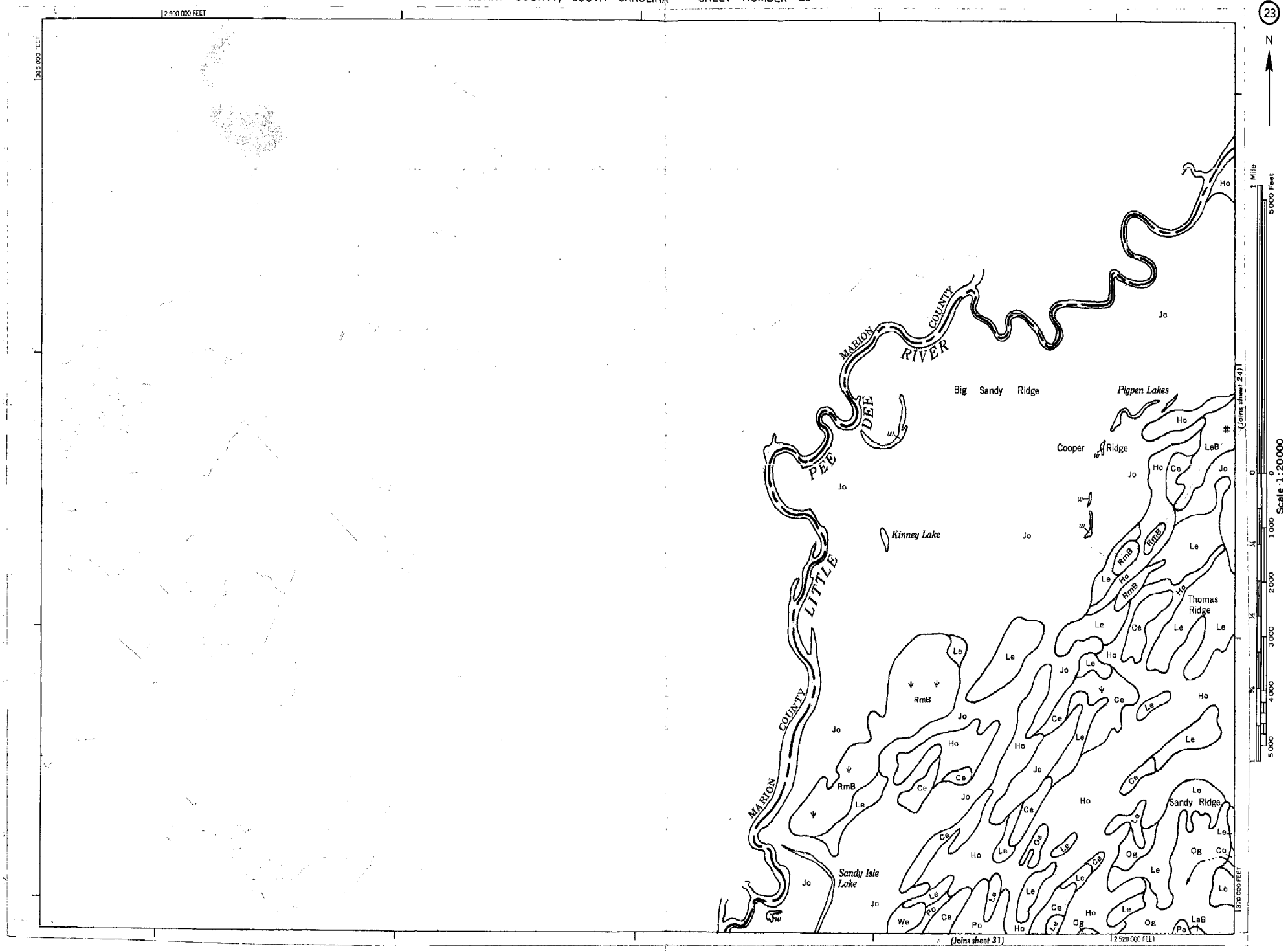


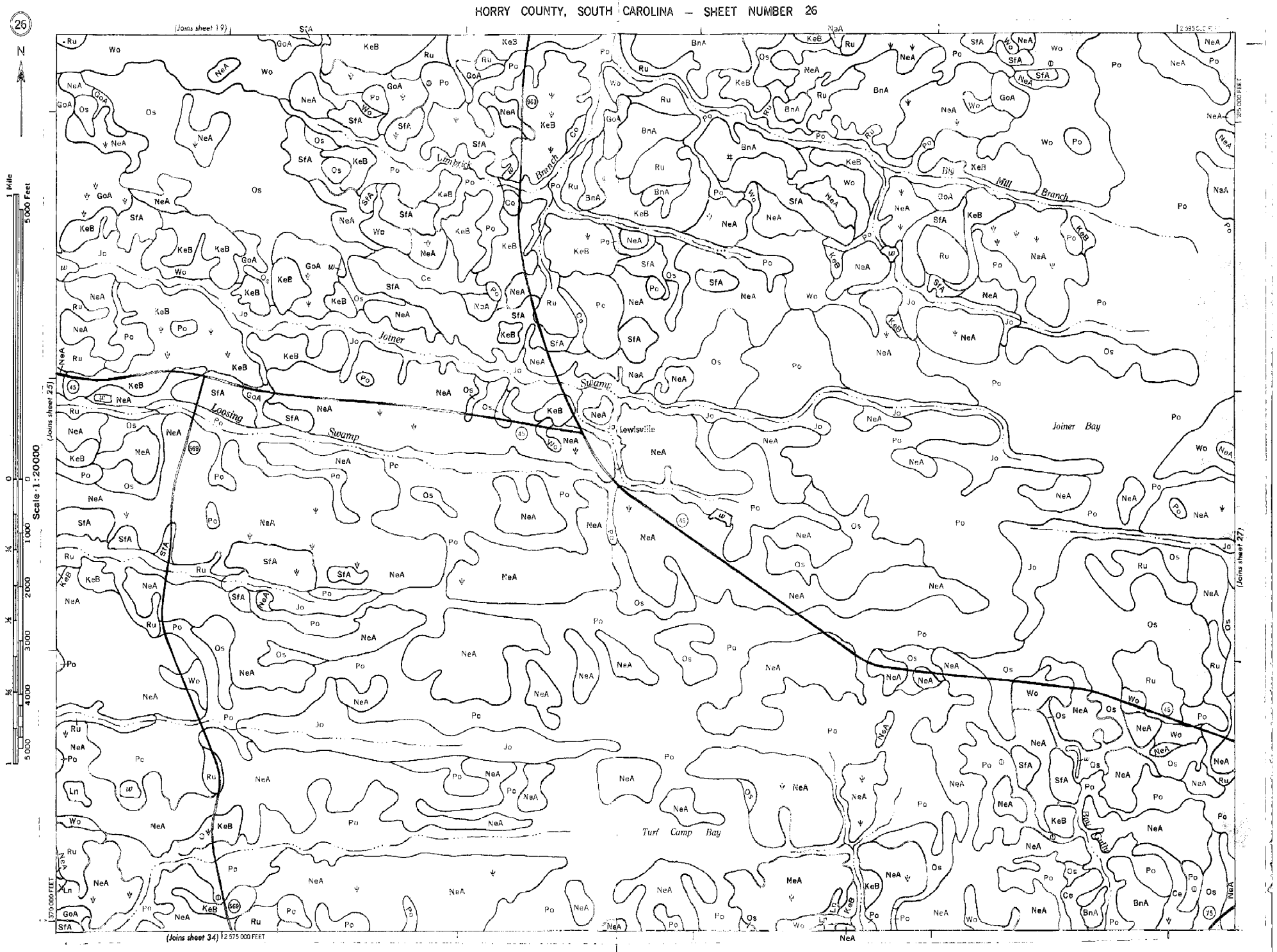
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 21



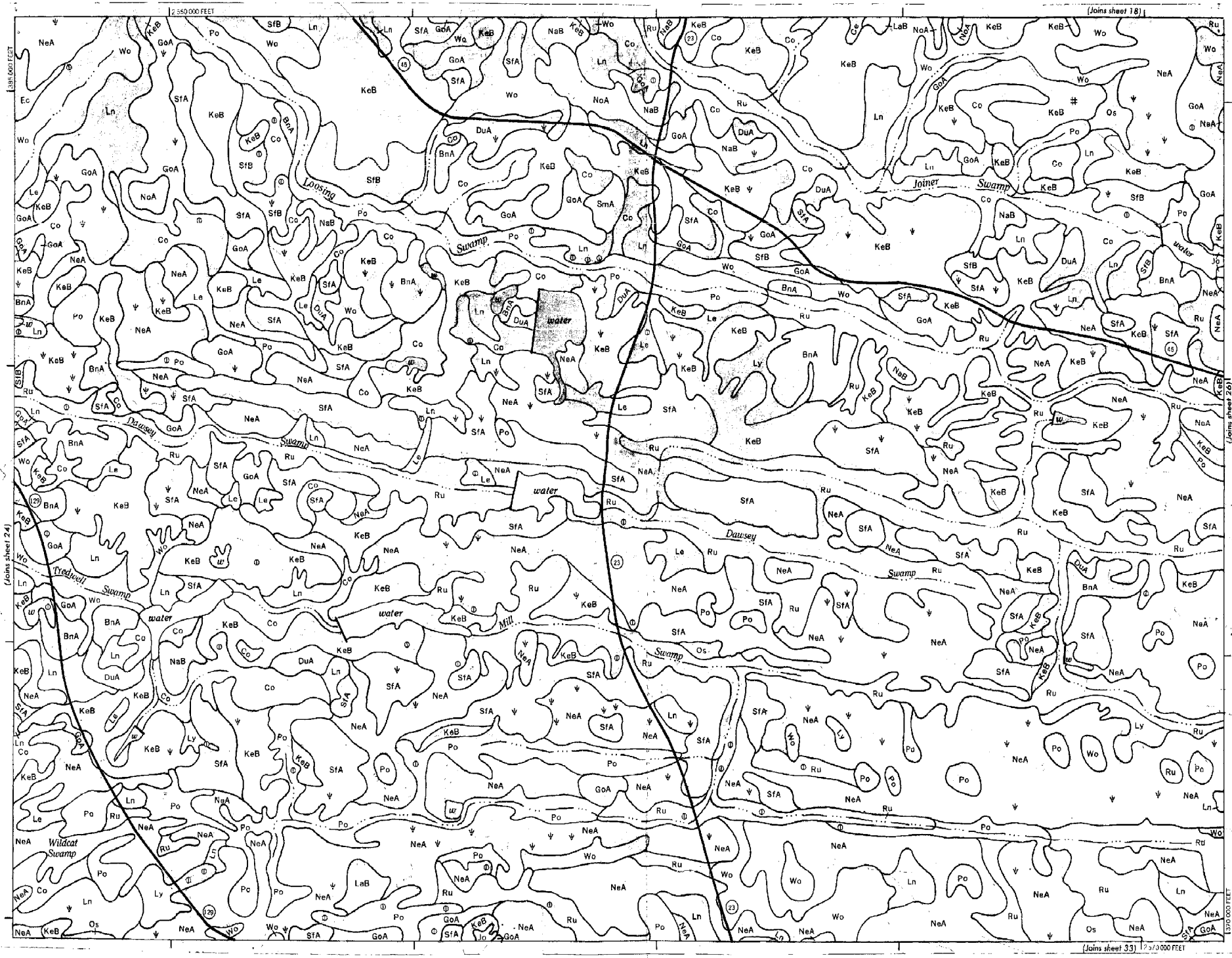

24
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 17)
(Joins sheet 23)
(Joins sheet 25)
(Joins sheet 32)
MARION COUNTY
LITTLE PEE DEE RIVER
Big Sandy Ridge
Cooper Ridge
Thomas Ridge
Sandy Ridge
Dawsey Swamp
Tredwell Swamp
Aynor
water

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 23

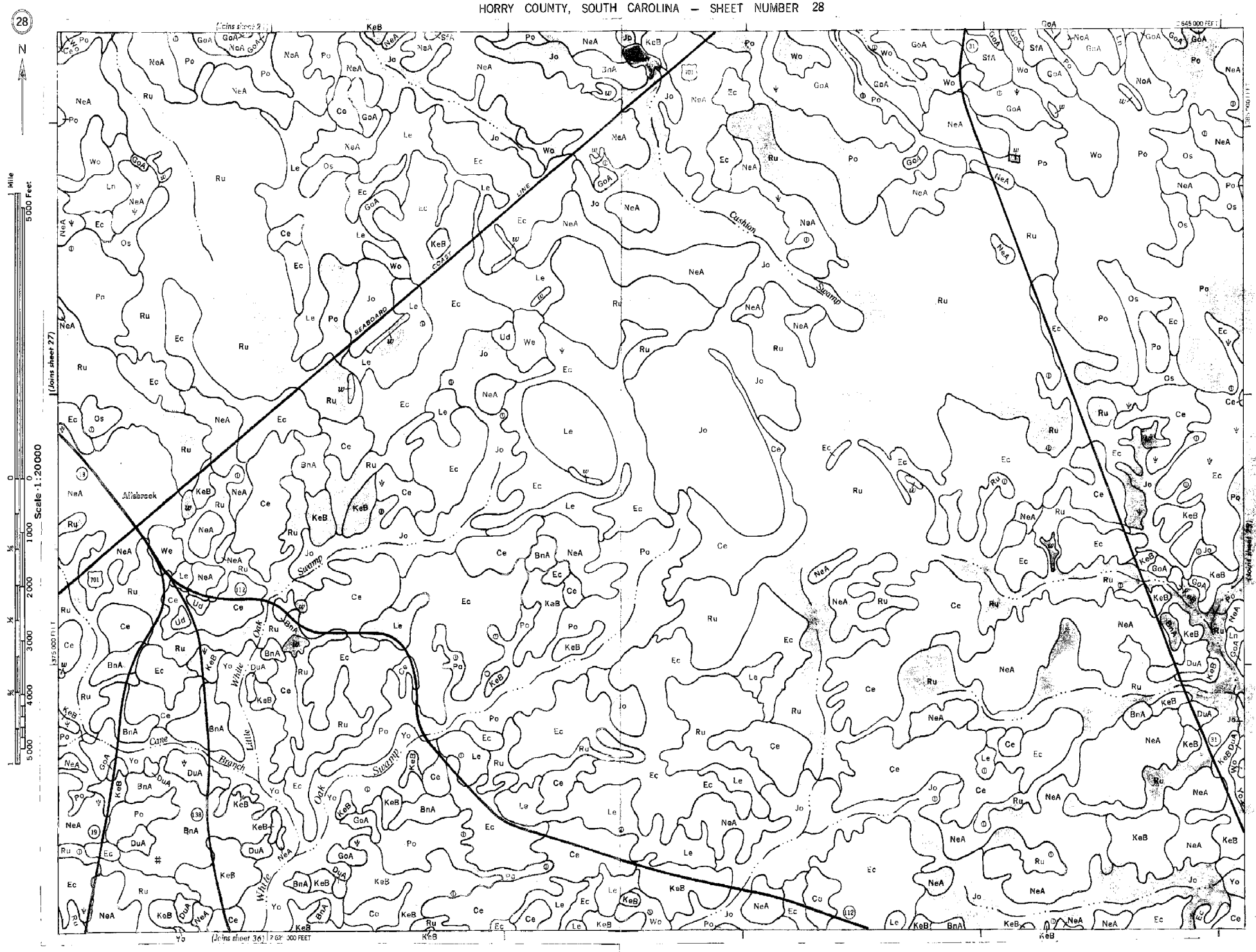



26
N
1 Mile
5,000 Feet
Scale 1:20000
(Joins sheet 19)
(Joins sheet 25)
(Joins sheet 27)
(Joins sheet 34)
2,595,000 FEET
2,575,000 FEET
370,000 FEET
25,000 FEET
Lumbrick Branch
Big Mill Branch
Joiner Swamp
Loosing Swamp
Joiner Bay
Turf Camp Bay
Lewisville

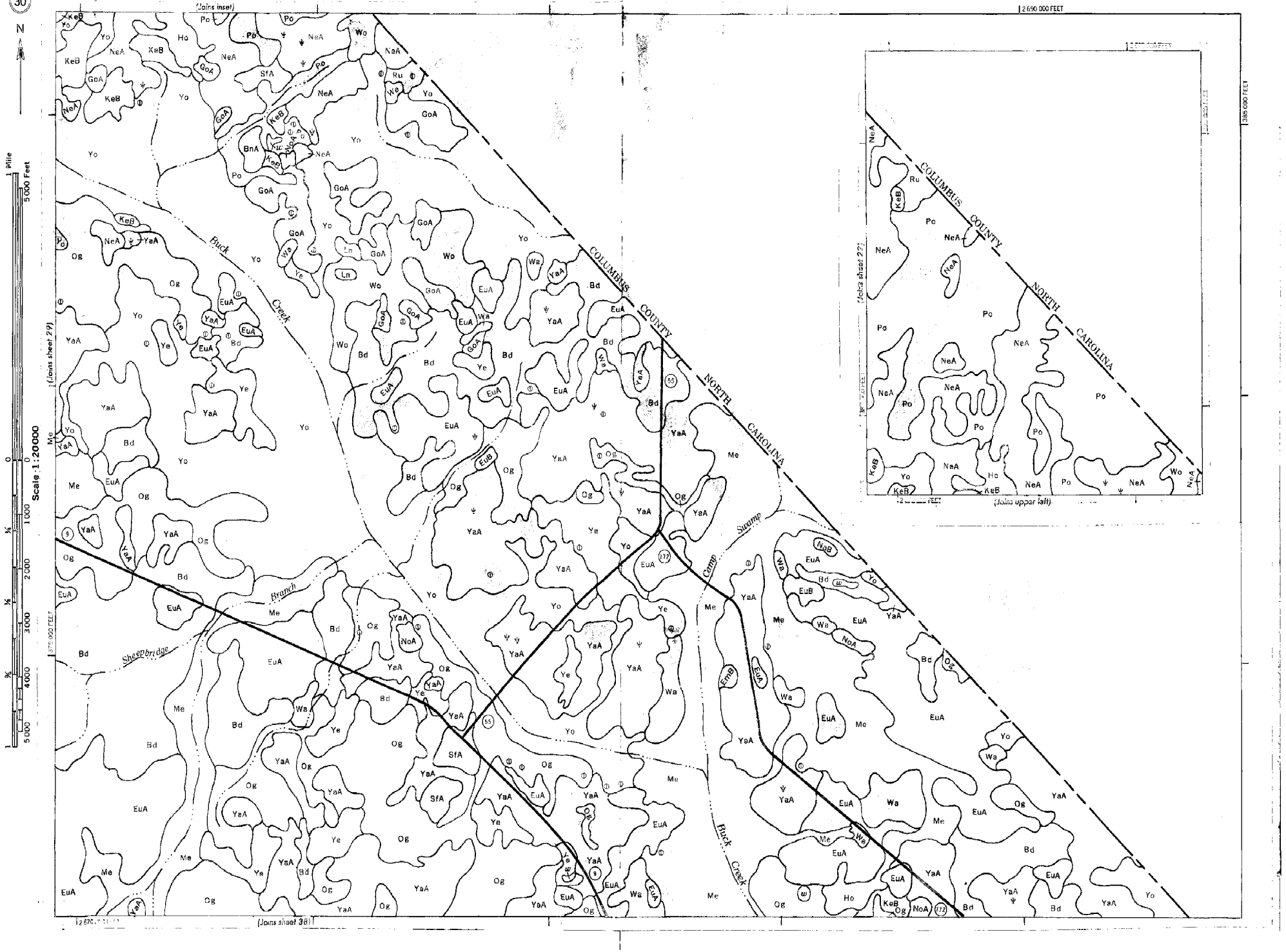
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 25



HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 28

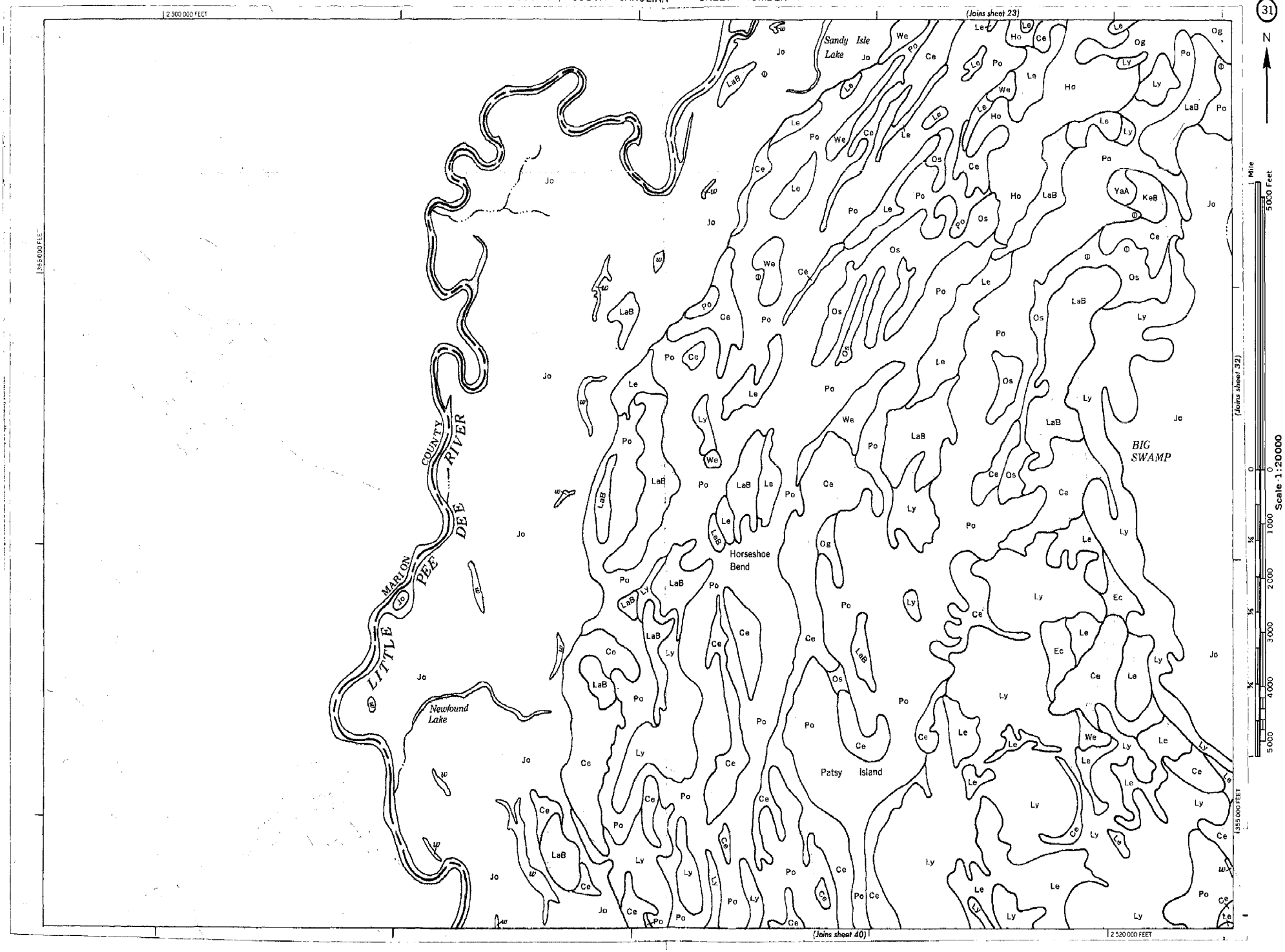


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 27

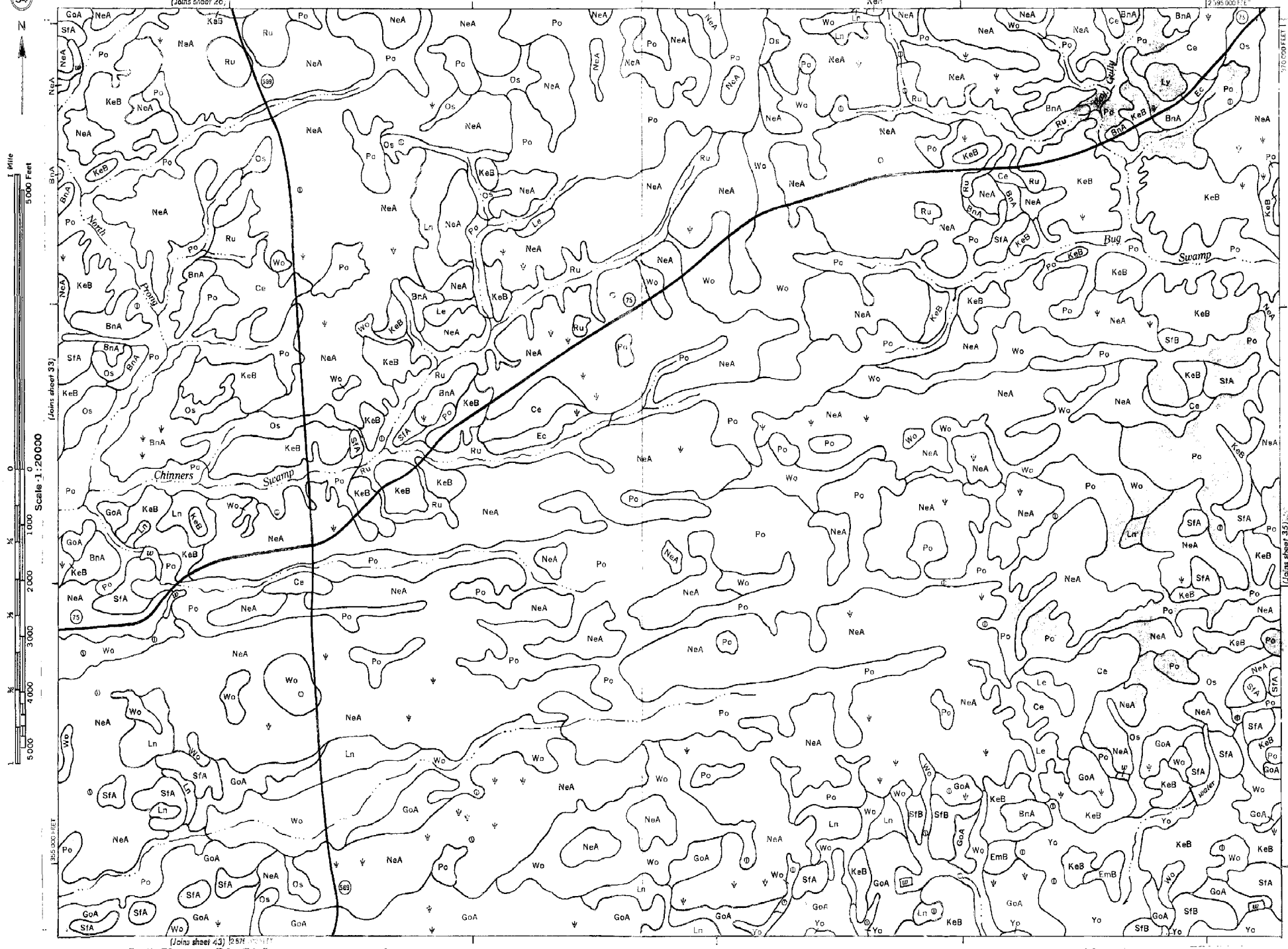

30
N
1 Mile
5 000 Feet
Scale 1:20000
(Joins inset)
(Joins sheet 29)
(Joins sheet 31)
(Joins sheet 38)
(Joins upper left)
2 690 000 FEET
385 000 FEET
COLUMBUS COUNTY
NORTH CAROLINA
Buck Creek
Sheepbridge Branch
Camp Swamp
Buck Creek

HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 29

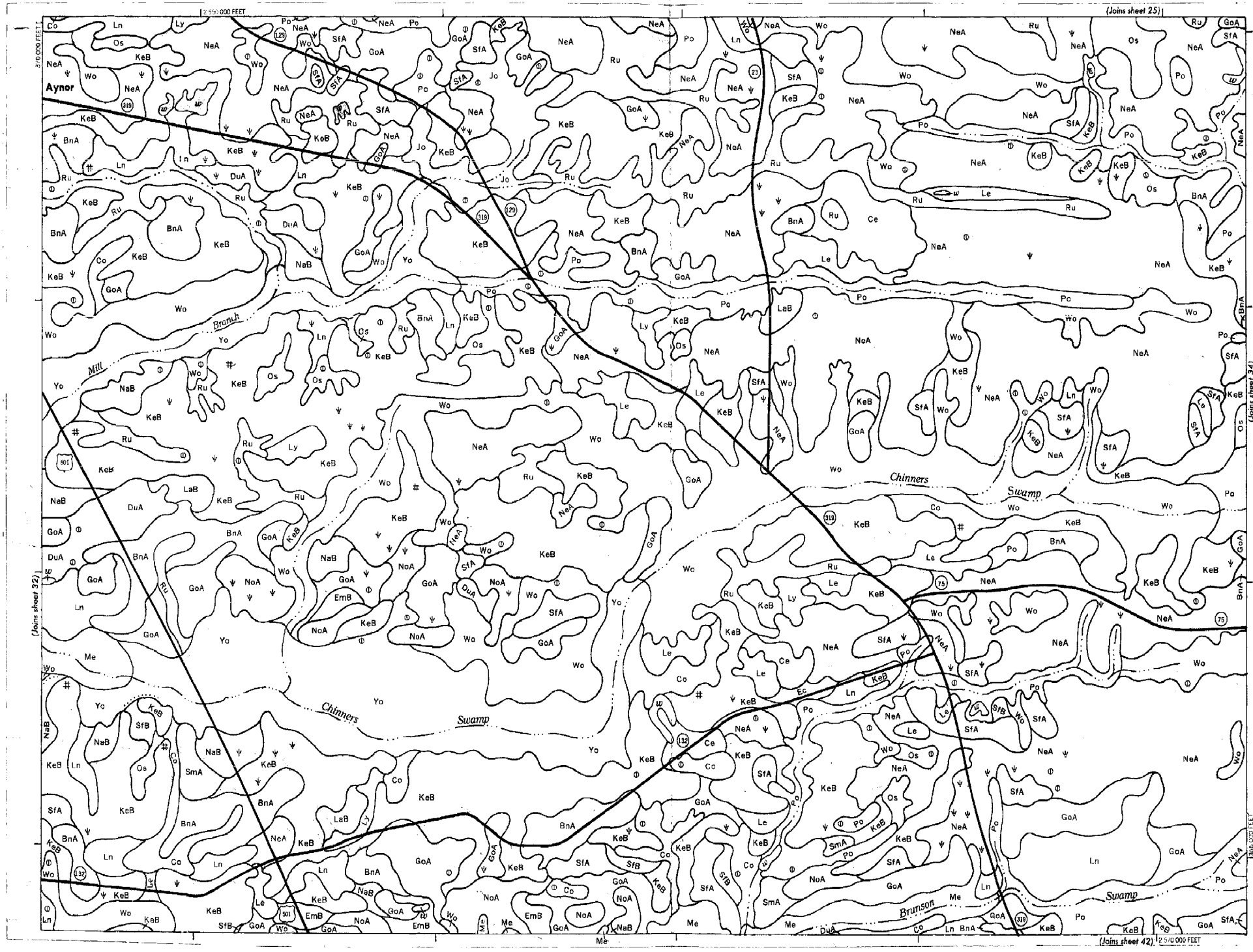
32
N
Scale 1:20000
1 Mile
5000 Feet
(Joins sheet 24)
(Joins sheet 31)
(Joins sheet 33)
(Joins sheet 41)
Aynor
BIG SWAMP
Turkey Island
Schoolhouse Branch
Chinners Swamp
Mill Branch
Chinners Swamp


31
N
(Joins sheet 23)
(Joins sheet 32)
(Joins sheet 40)
2 500 000 FEET
2 520 000 FEET
355 000 FEET
Sandy Isle Lake
Newfound Lake
Horseshoe Bend
Patsy Island
BIG SWAMP
LITTLE PEE DEE RIVER
MARION COUNTY
1 Mile
5000 Feet
Scale 1:20000

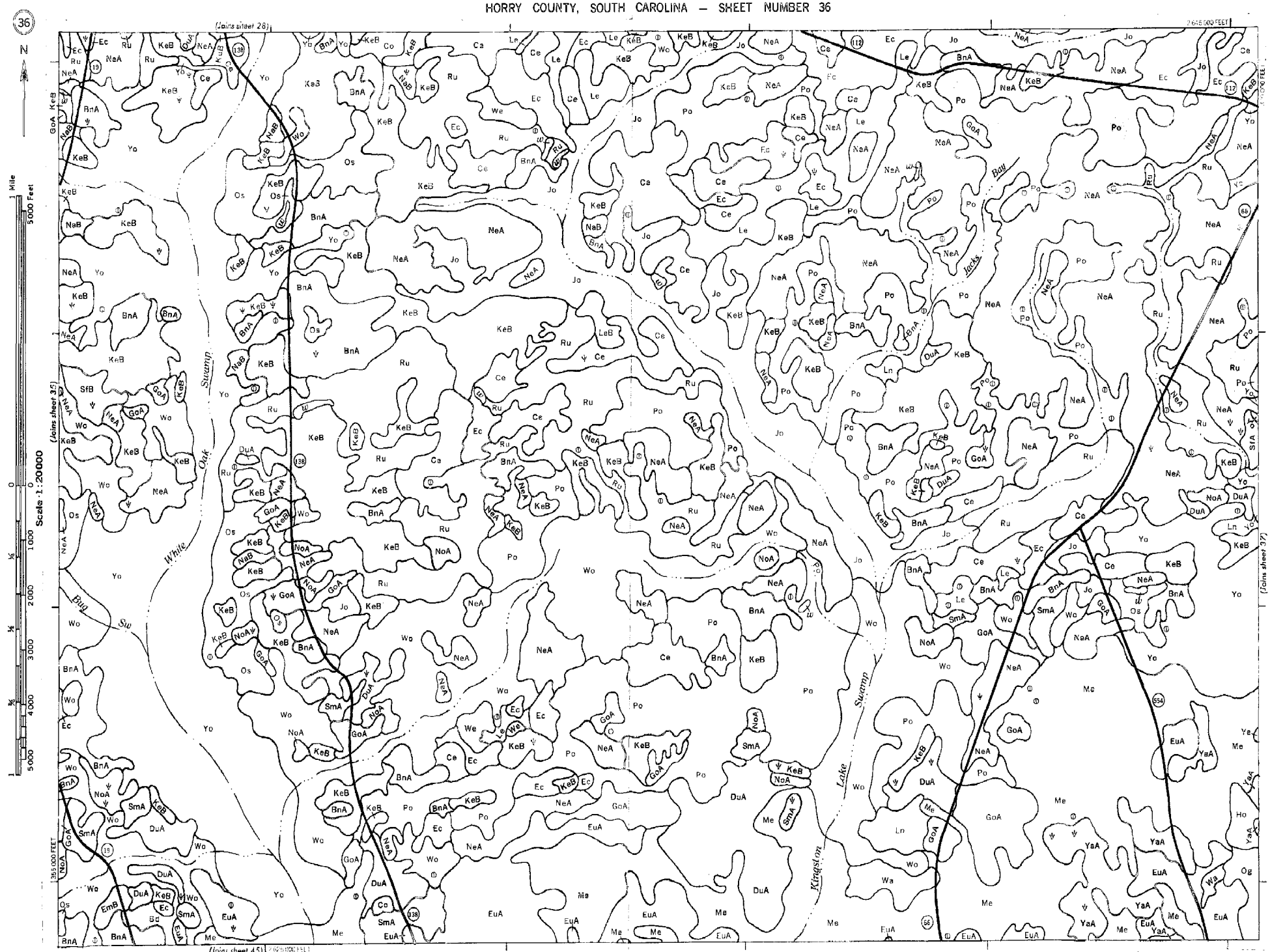
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 34



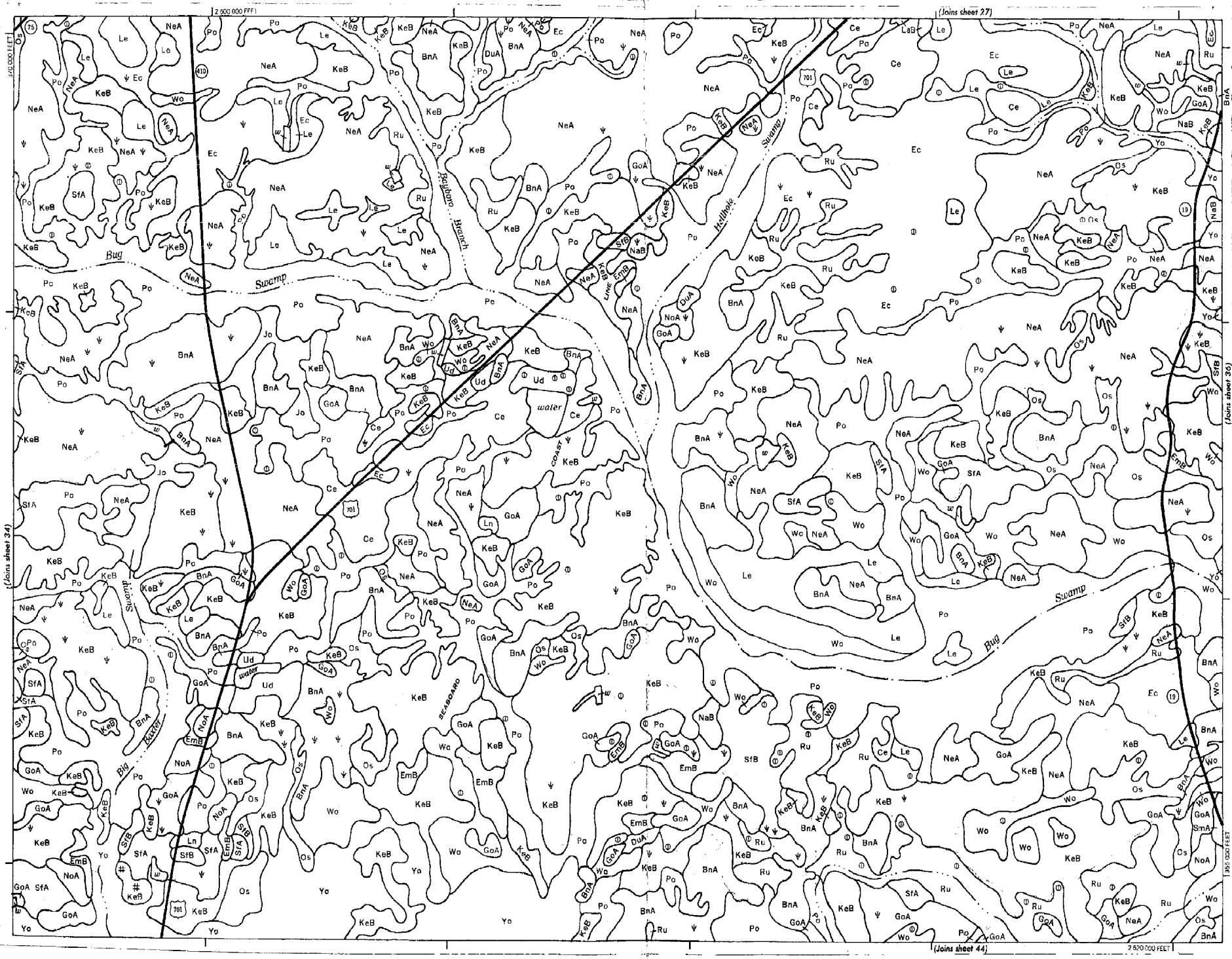
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 33

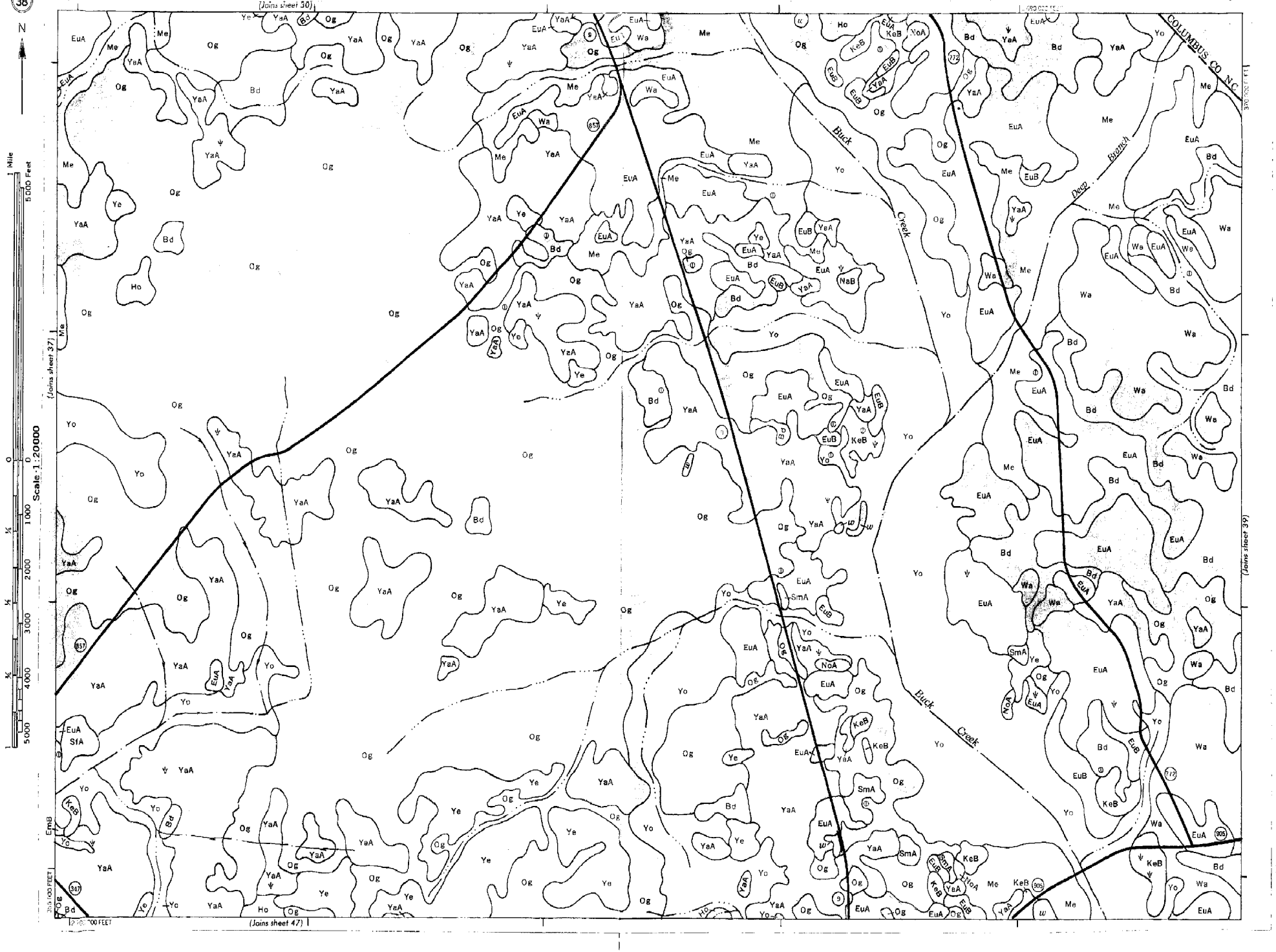


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 36

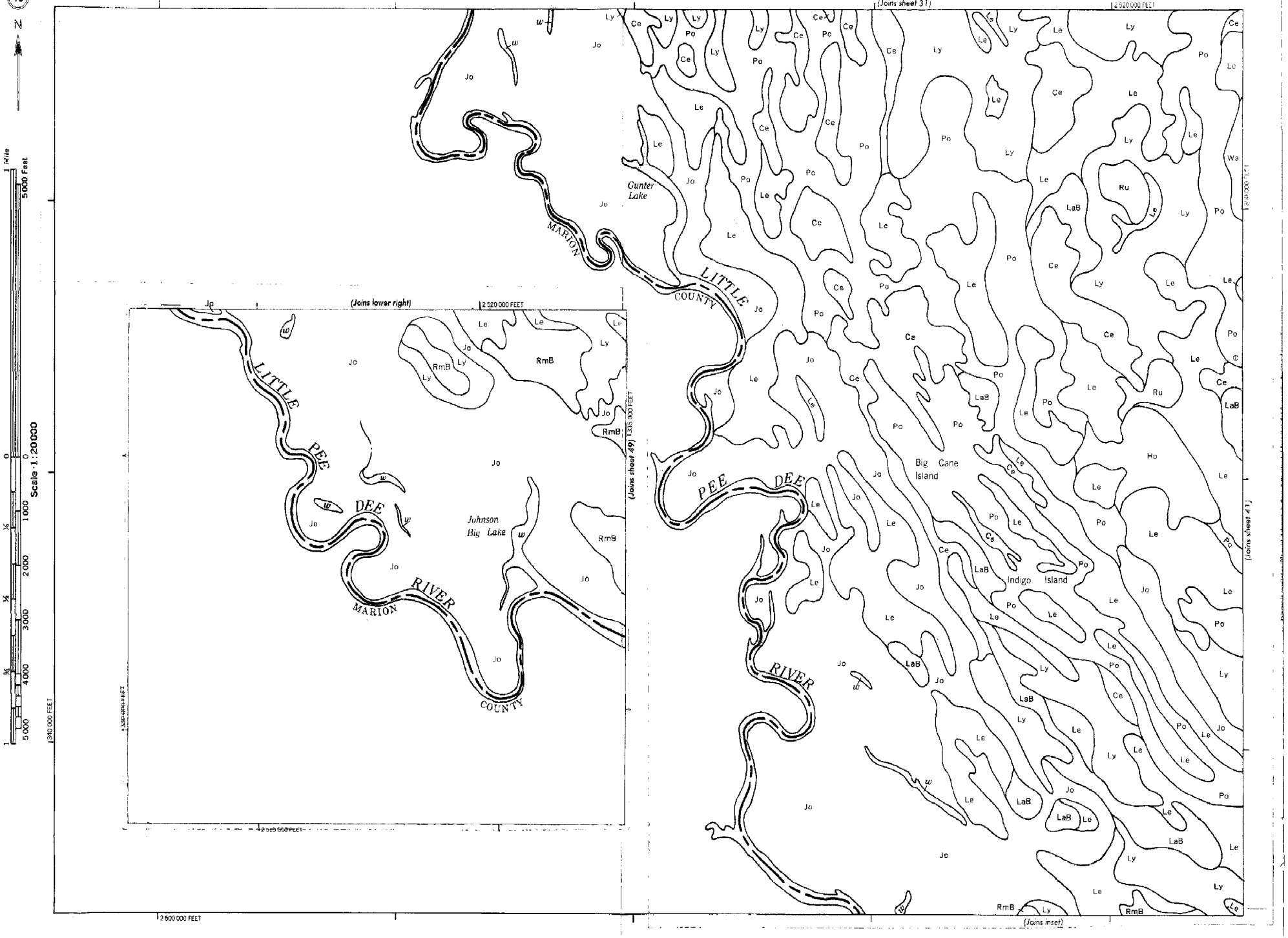


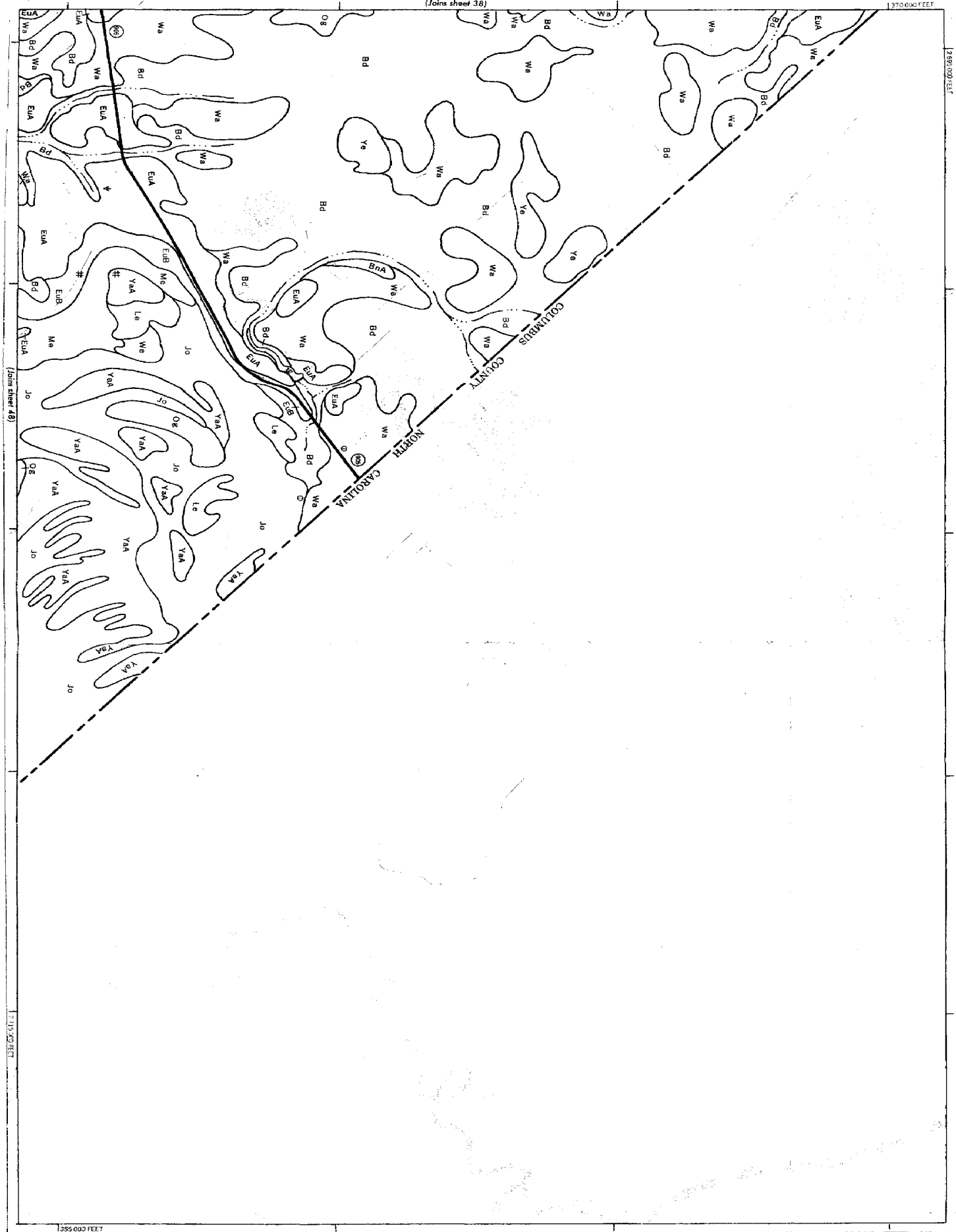
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 35

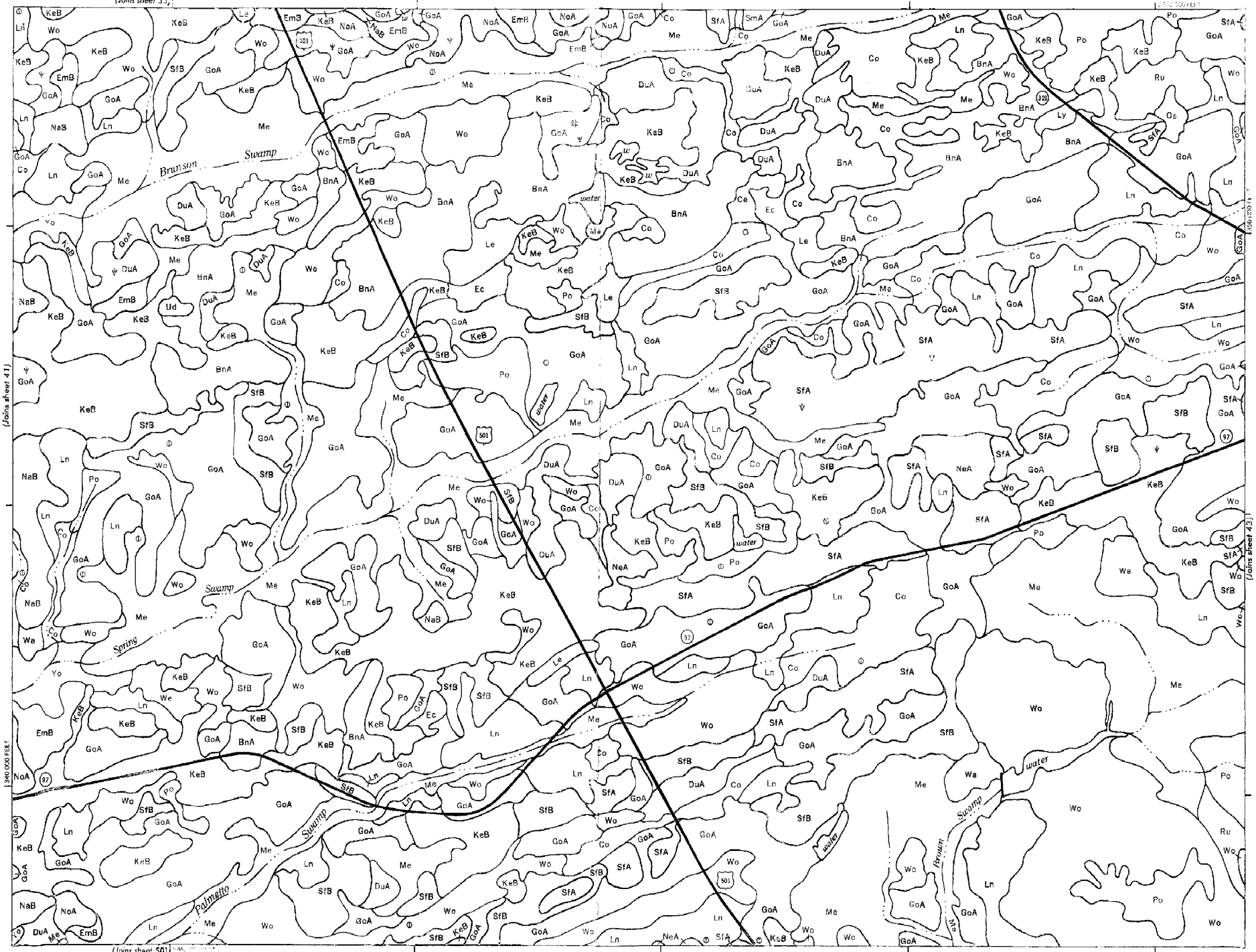



38
N
Scale 1:20000
1 Mile
5000 Feet
(Joins sheet 30)
(Joins sheet 37)
(Joins sheet 39)
(Joins sheet 47)
COLUMBUS CO NC
Buck Creek
Deep Branch
Buck Creek

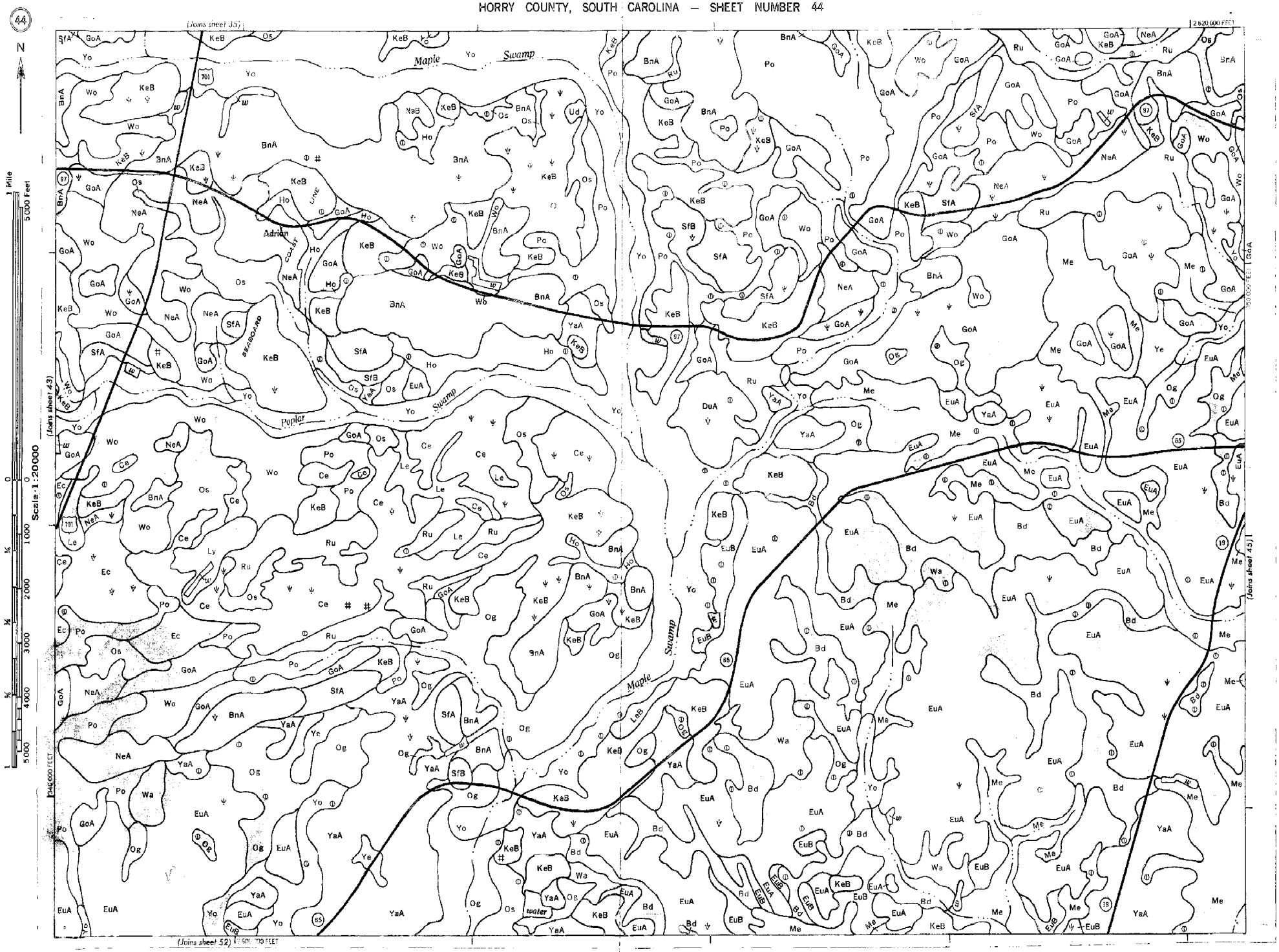
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 37


40
N
Scale 1:20000
1 Mile
5000 Feet
(Joins sheet 31)
2 520 000 FEET
(Joins lower right)
(Joins sheet 49)
(Joins sheet 41)
(Joins inset)
2 500 000 FEET
340 000 FEET
Gunter Lake
MARION
COUNTY
LITTLE
PEE DEE
RIVER
Johnson Big Lake
Big Cane Island
Indigo Island
Jo
Le
Ly
Po
Ce
RmB
LaB
Ru
Ho
Wa
Cc

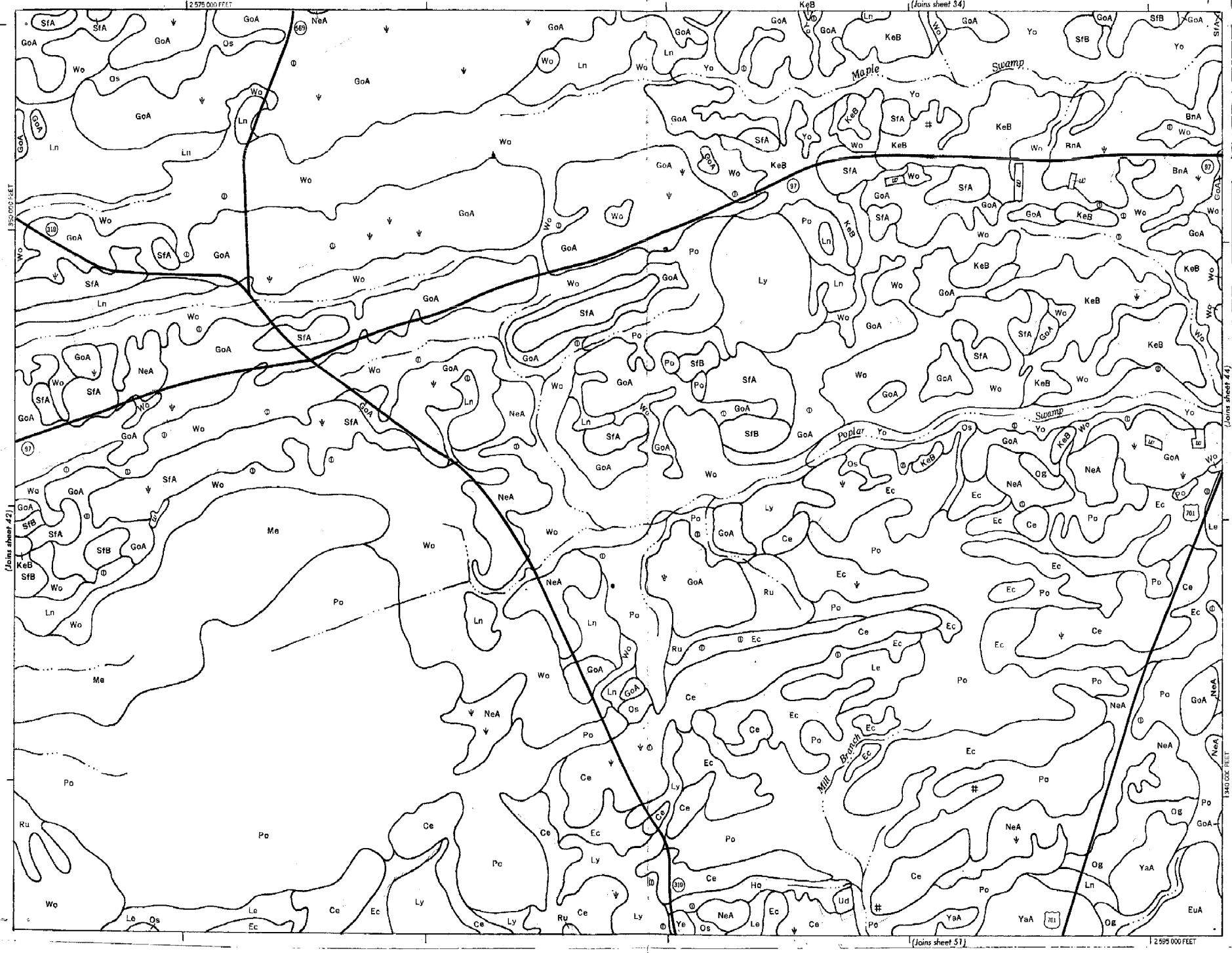

(Joins sheet 38)
(Joins sheet 40)
370 000 FEET
359 000 FEET
355 000 FEET
NORTH CAROLINA
COLUMBUS COUNTY
Scale 1:20000
1 Mile
5000 Feet
N


(Joins sheet 33)
(Joins sheet 41)
(Joins sheet 43)
(Joins sheet 50)
N
1 Mile
5000 Feet
Scale 1:20000
340 000 FEET
Brunson Swamp
Swamp
Spring
Palmetto
Brown
water
501
97
378

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 41

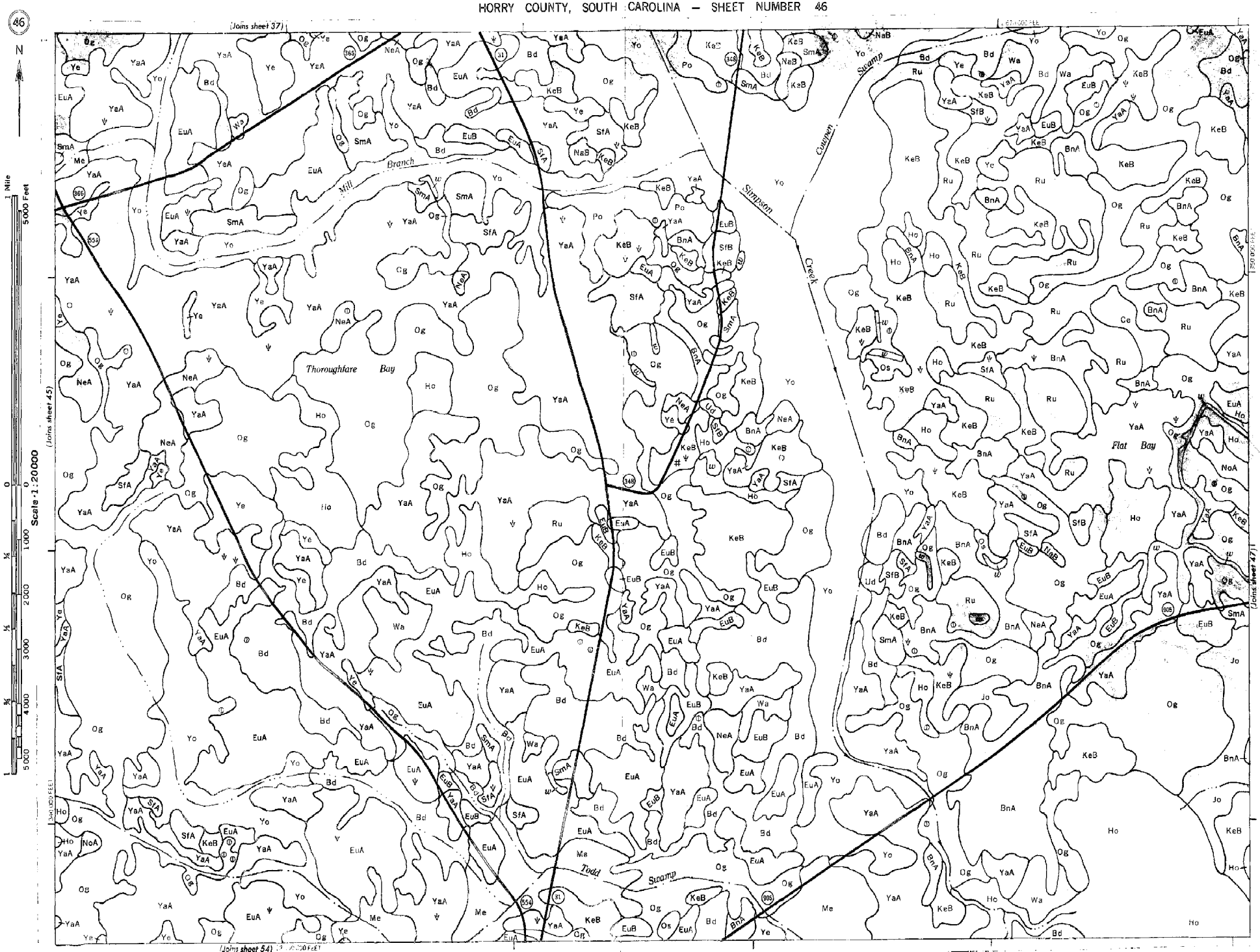

44
N
(Joins sheet 35)
(Joins sheet 43)
(Joins sheet 45)
(Joins sheet 52)
Maple Swamp
Poplar Swamp
Adrian
SEABOARD COAST LINE
water
1 Mile
5000 Feet
Scale 1:20000
2 620 000 FEET
340 000 FEET

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 43



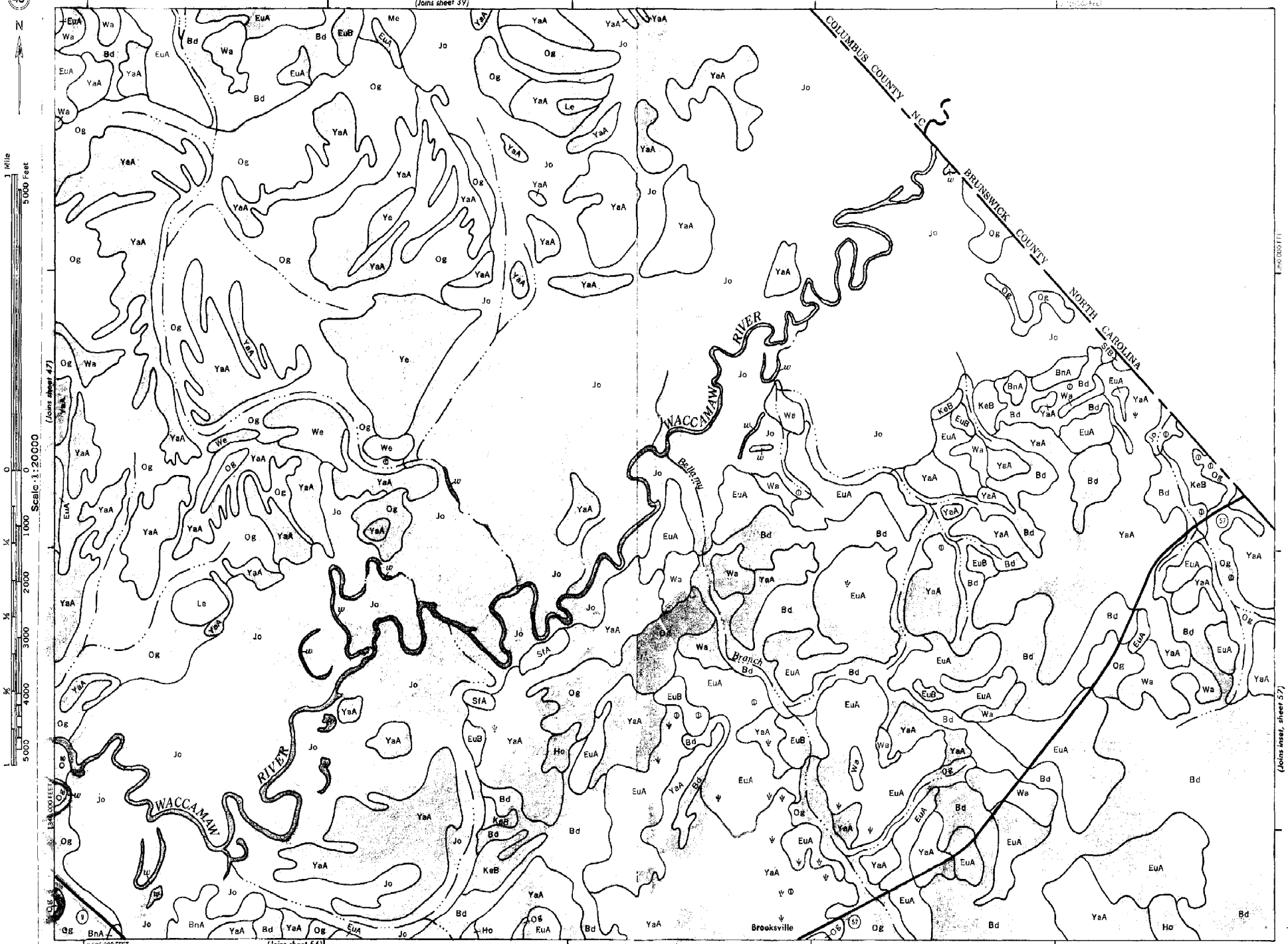
43

N

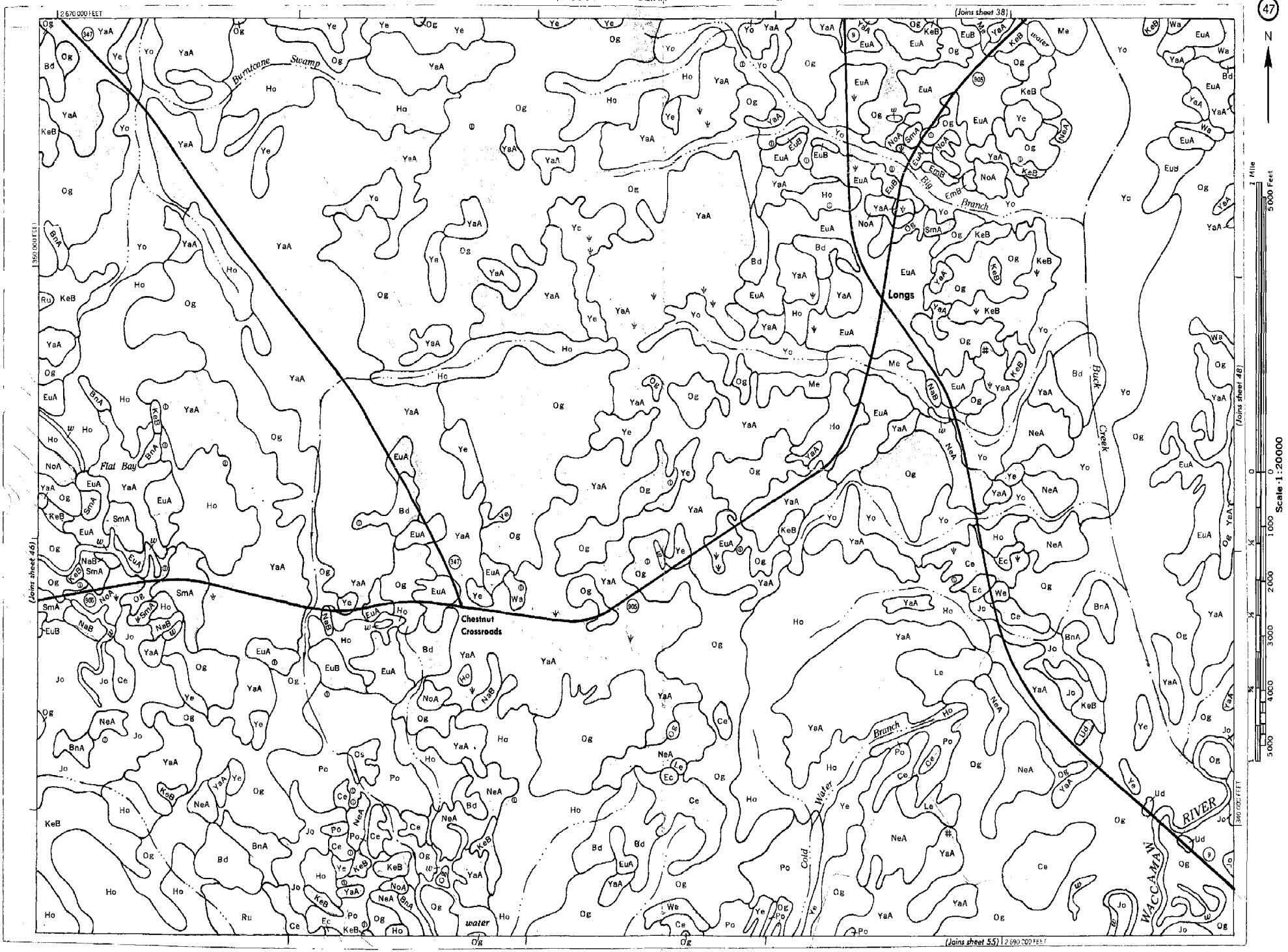

46
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 37)
(Joins sheet 45)
(Joins sheet 54)
(Joins sheet 47)
Thoroughfare Bay
Flat Bay
Mill Branch
Simpson Creek
Cowpen Swamp
Todd Swamp

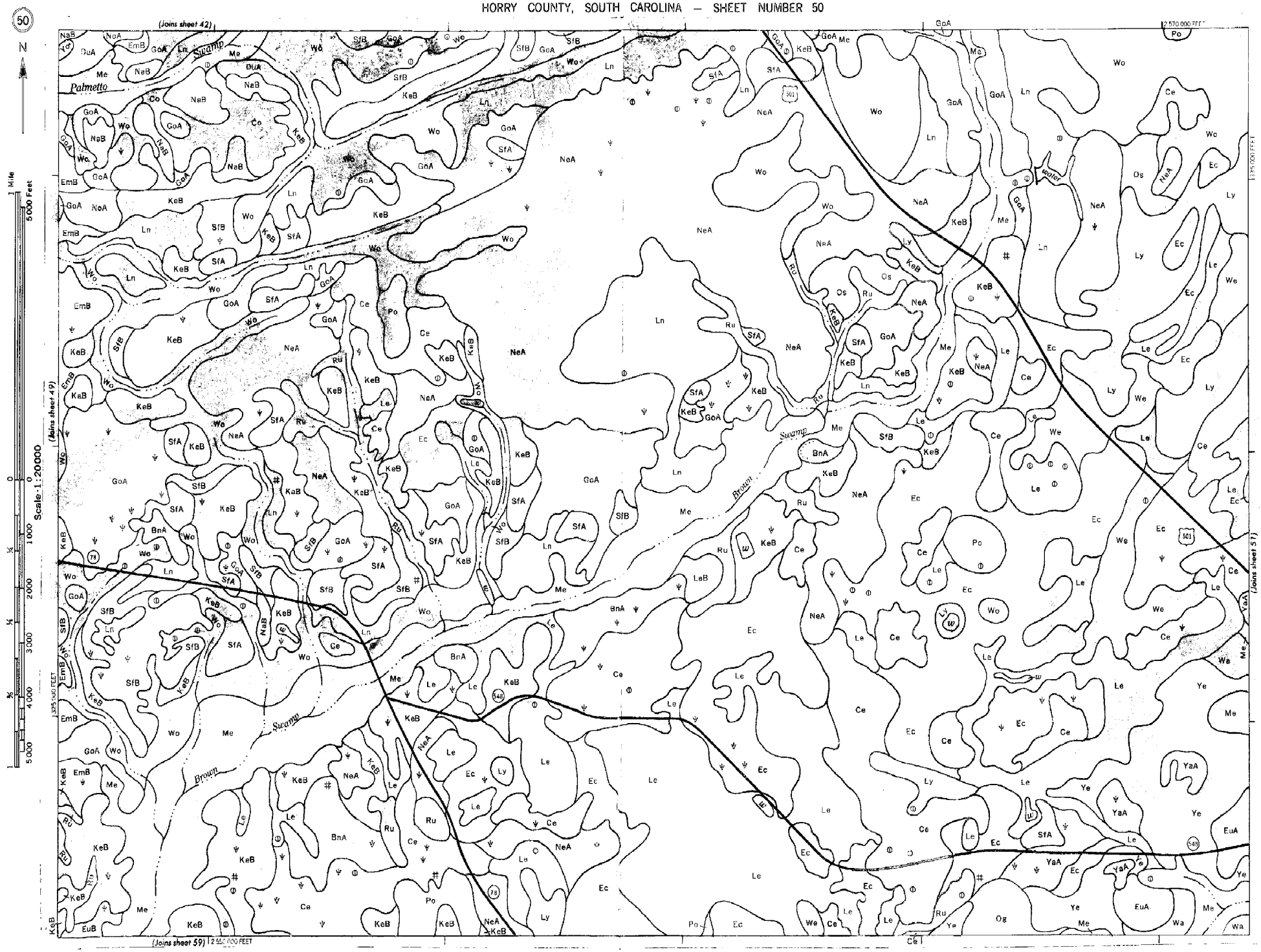
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 45

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 48

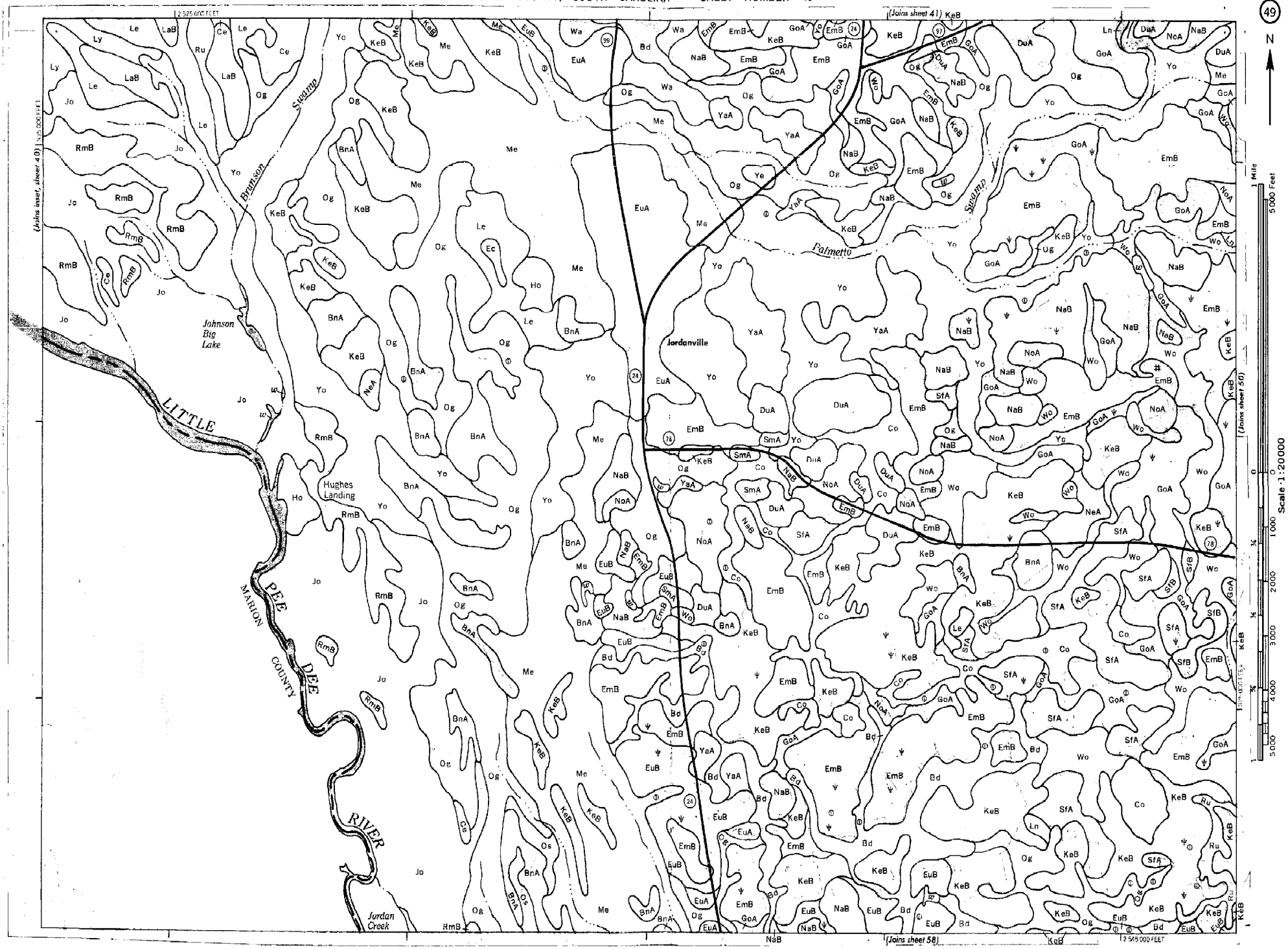


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 47

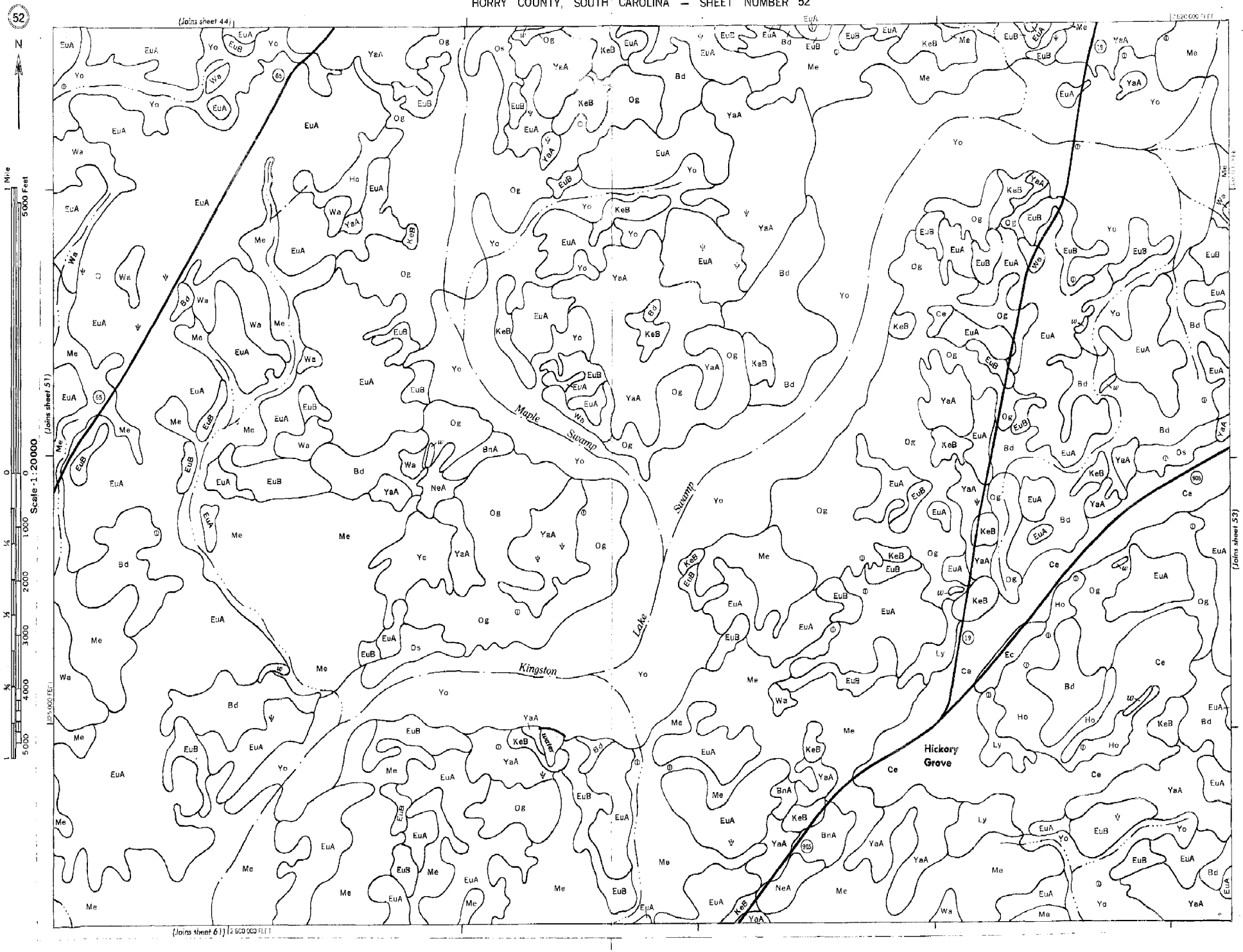



50
N
(Joins sheet 42)
(Joins sheet 49)
(Joins sheet 51)
(Joins sheet 59)
Palmetto
Swamp
Brown
Swamp
Brown
Swamp
water
1 Mile
5000 Feet
Scale 1:20000
0
1000
2000
3000
4000
5000
2 570 000 FEET
325 000 FEET
2 550 000 FEET

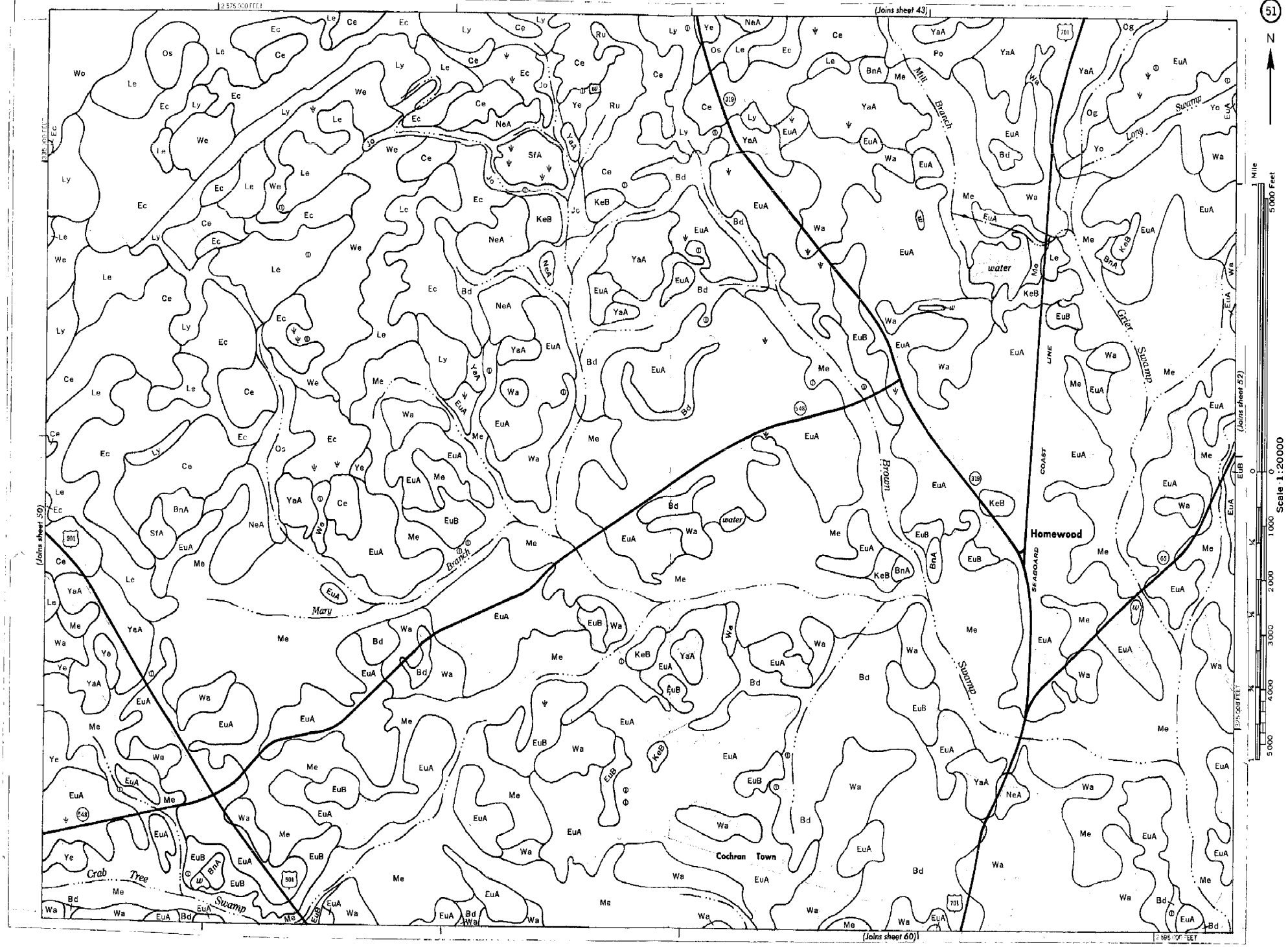
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 49



HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 52

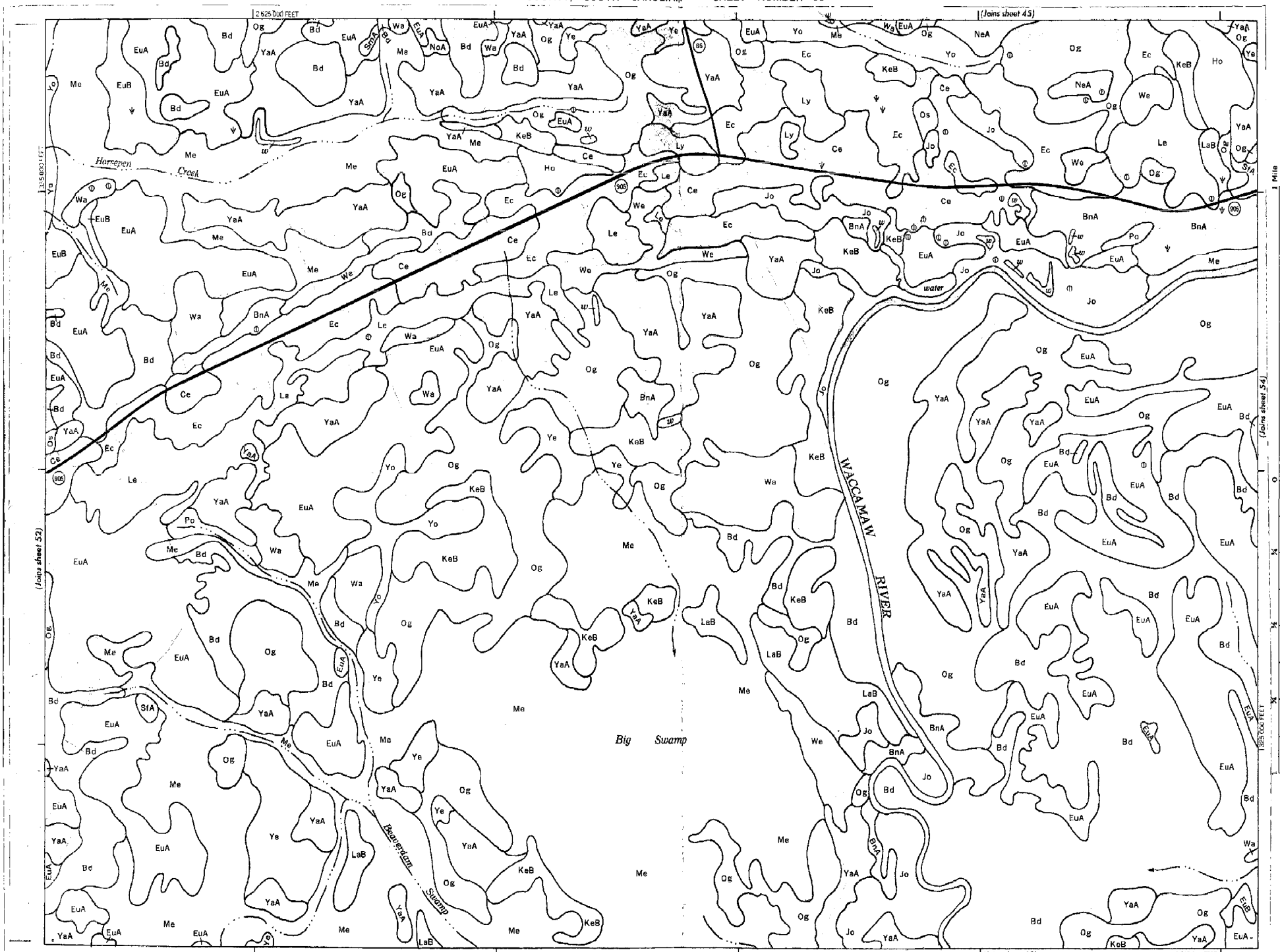


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 51



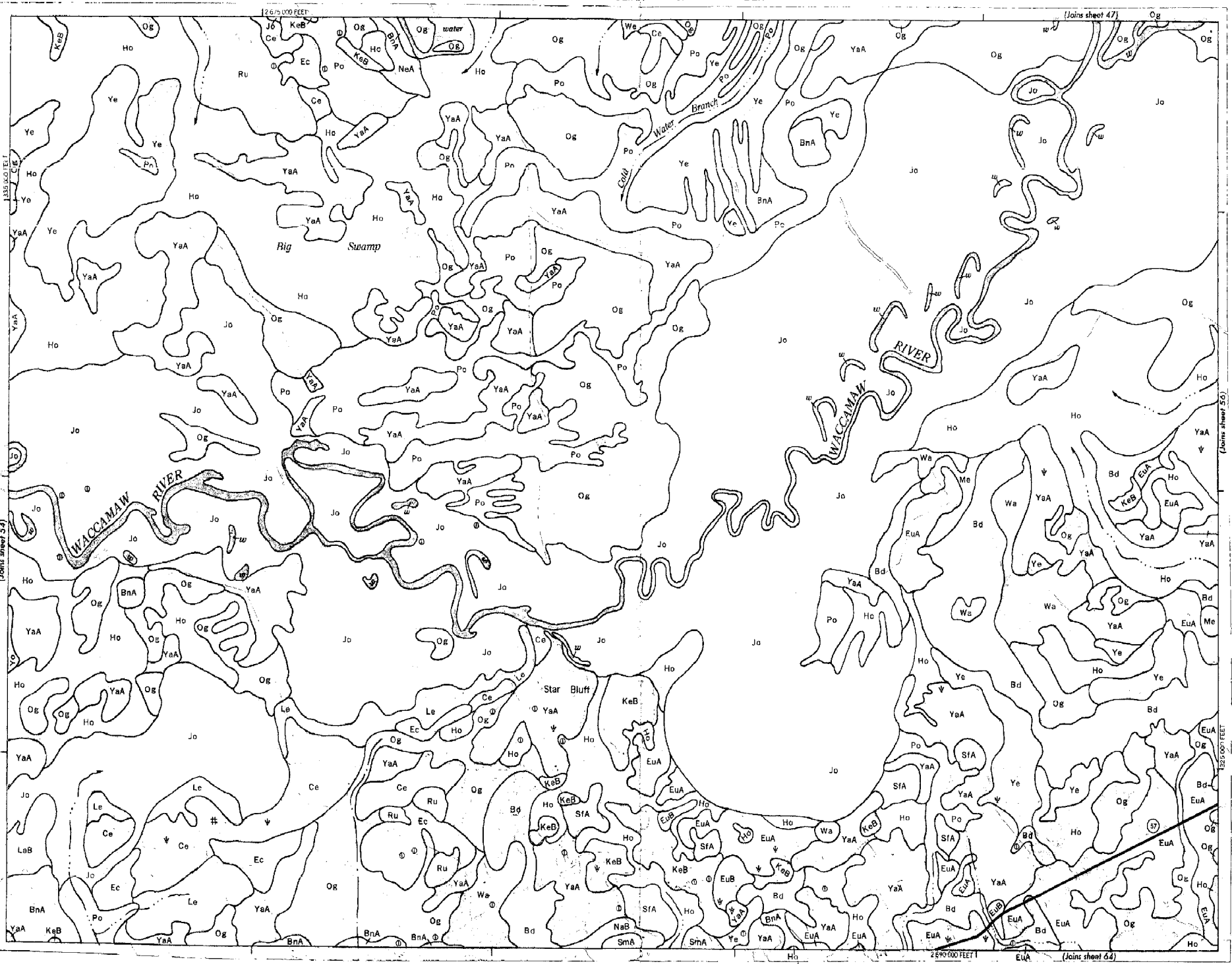
54
N
(Joins sheet 46)
(Joins sheet 53)
(Joins sheet 55)
(Joins sheet 63)
Red Bluff Crossroads
WACCAMAW RIVER
JONES BIG SWAMP
Trout Swamp
Simpson Creek
Scale 1:20,000
1 Mile
5,000 Feet

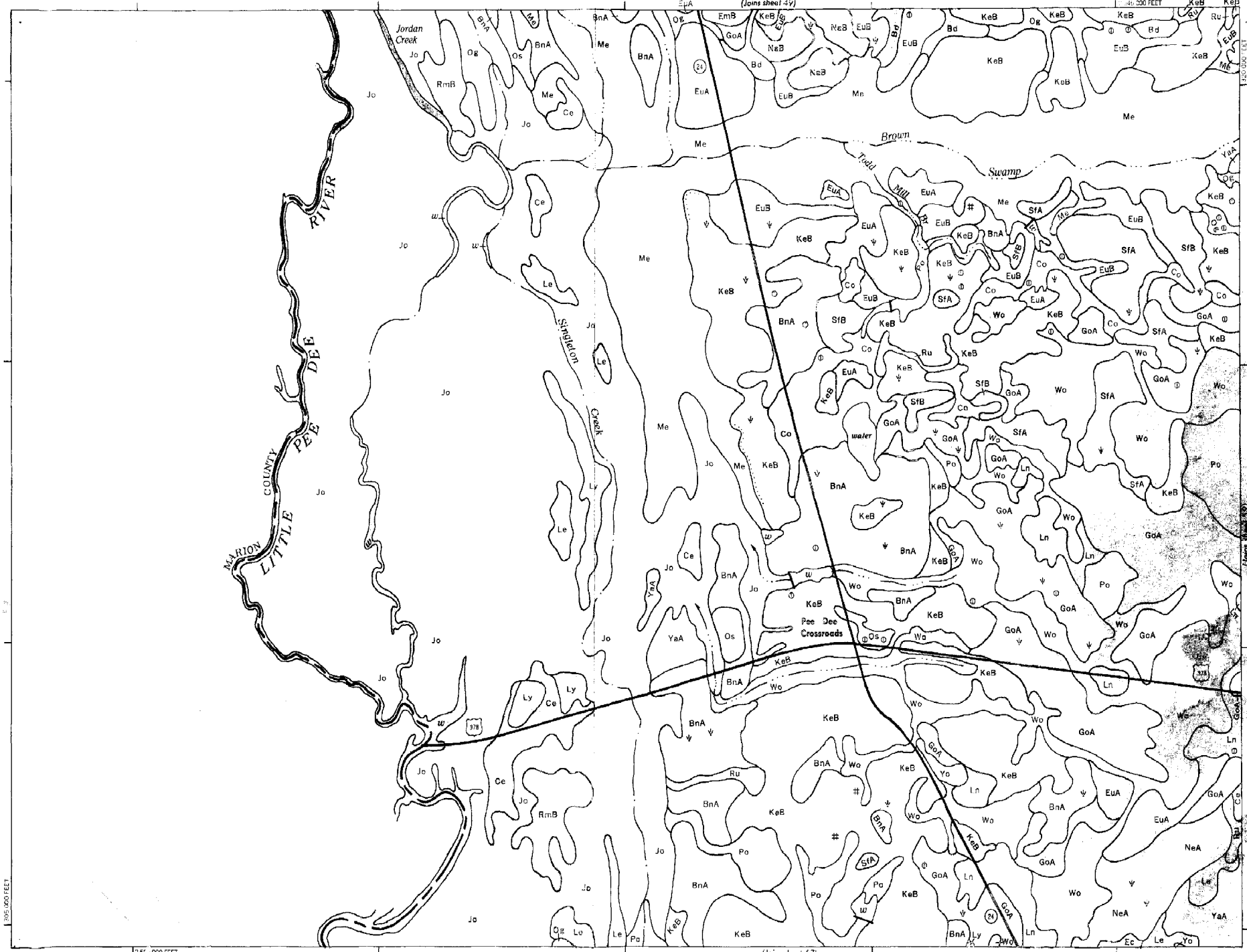
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 53



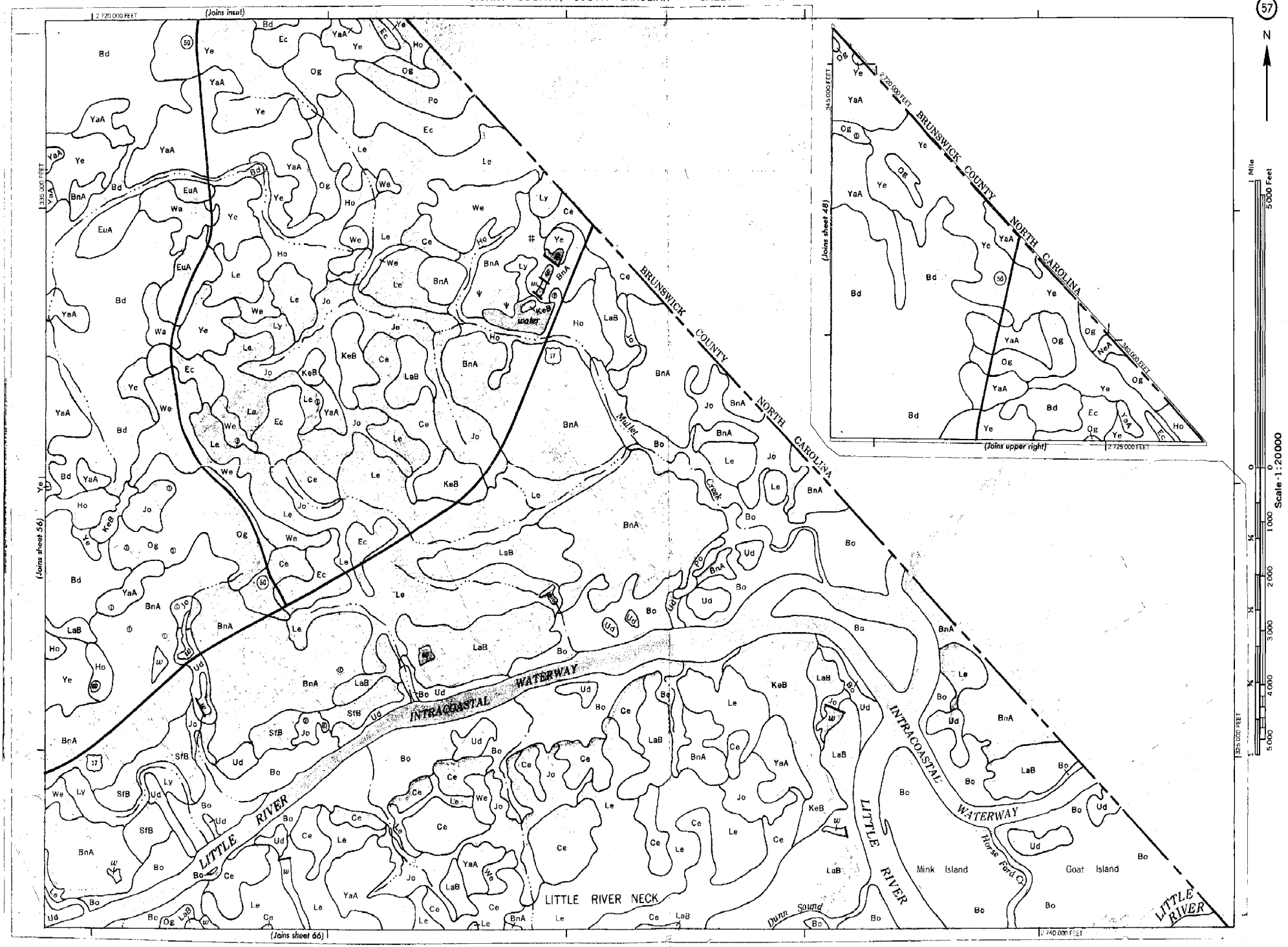
56
N
(Joins sheet 48)
(Joins sheet 55)
(Joins sheet 57)
(Joins sheet 65)
Brooksville
Stephens Crossroads
Bellamy Branch
Scale 1:20000
1 Mile
5000 Feet
335 000 FEET
325 000 FEET

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 55

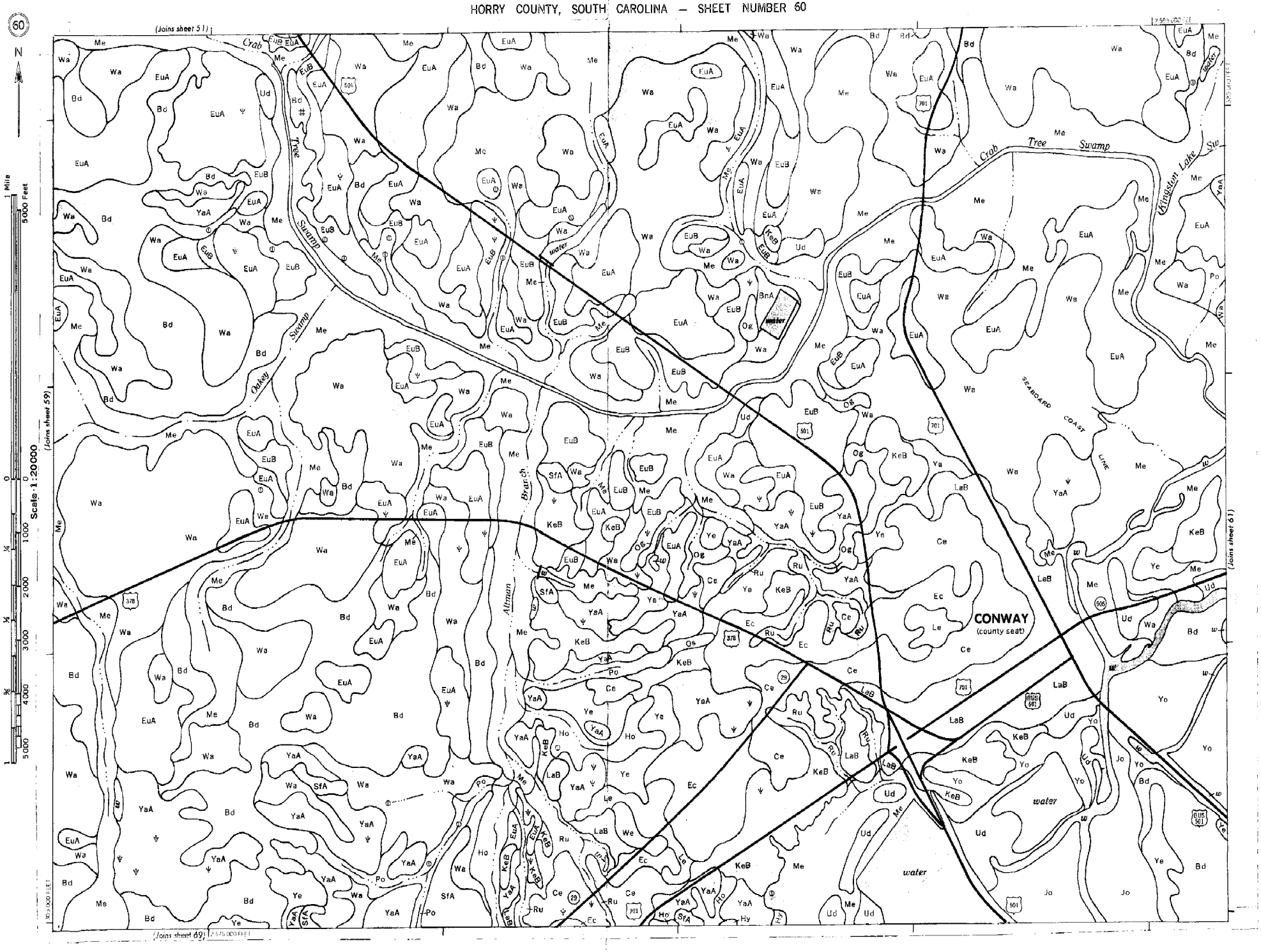



58
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 49)
(Joins sheet 67)
(Joins sheet 59)
Jordan Creek
Brown Swamp
Todd Mill Br
Singleton Creek
LITTLE PEE DEE RIVER
MARION COUNTY
Pee Dee Crossroads
water
24
378
305 000 FEET
320 000 FEET

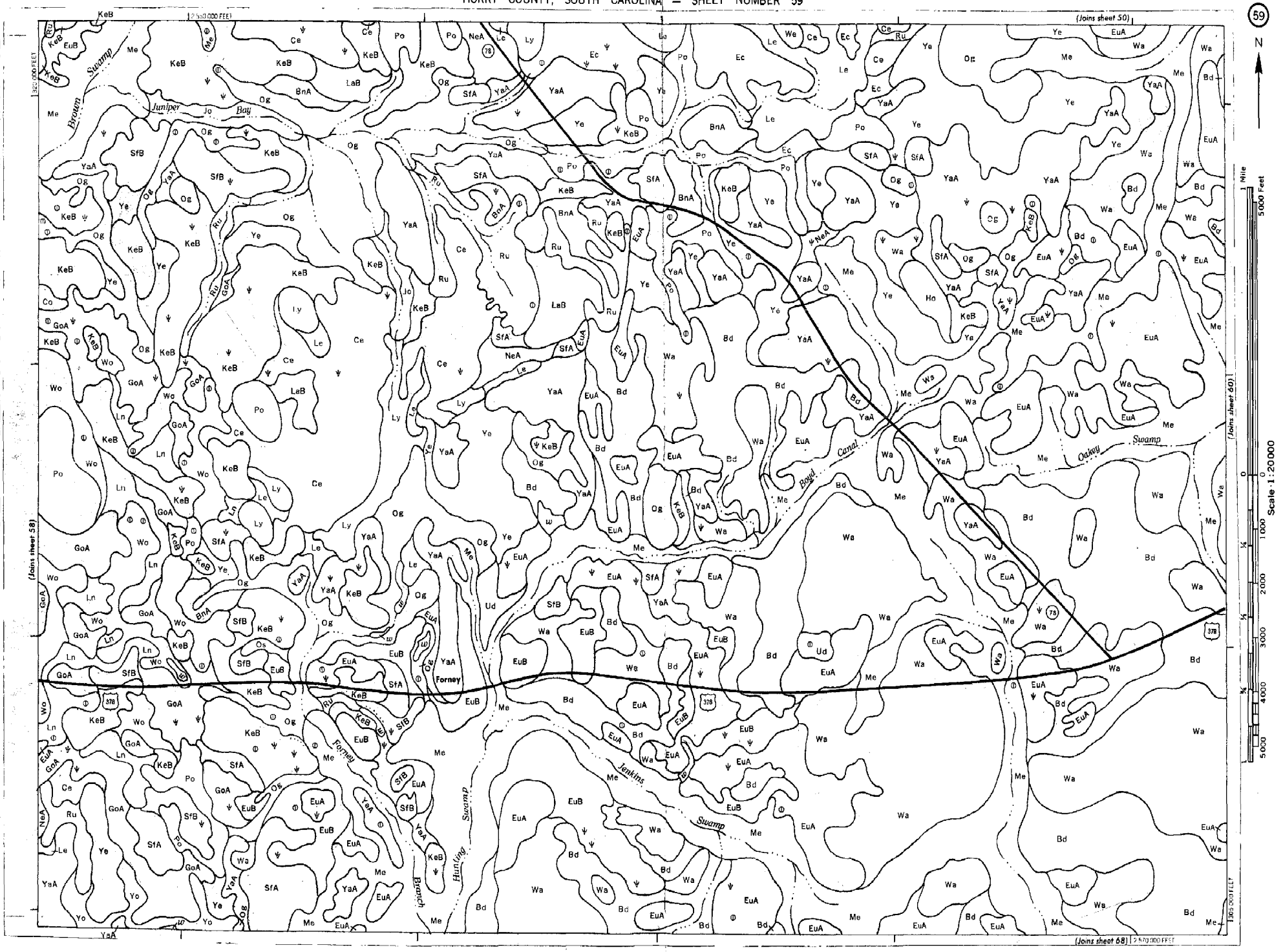
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 57



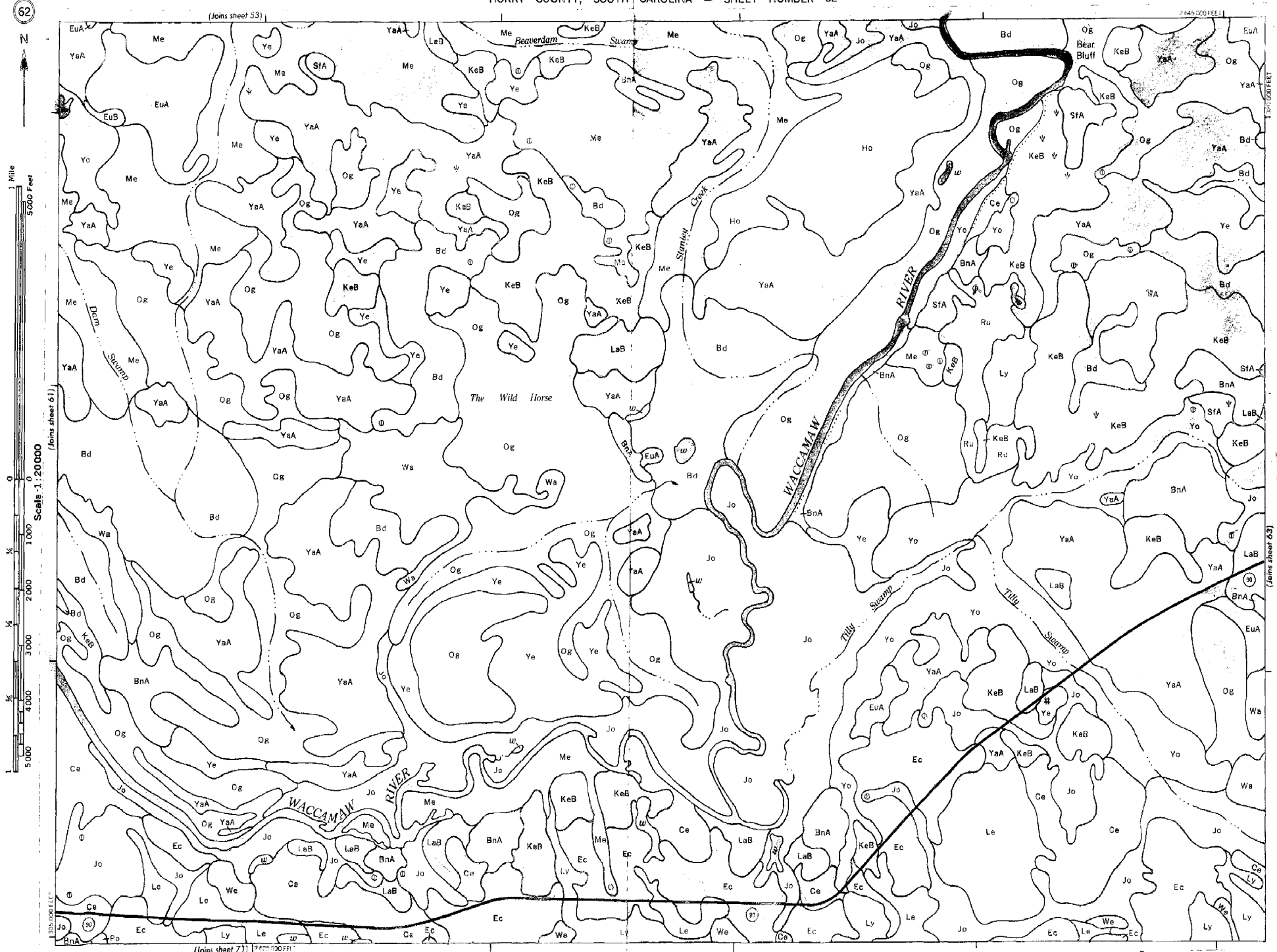
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 60



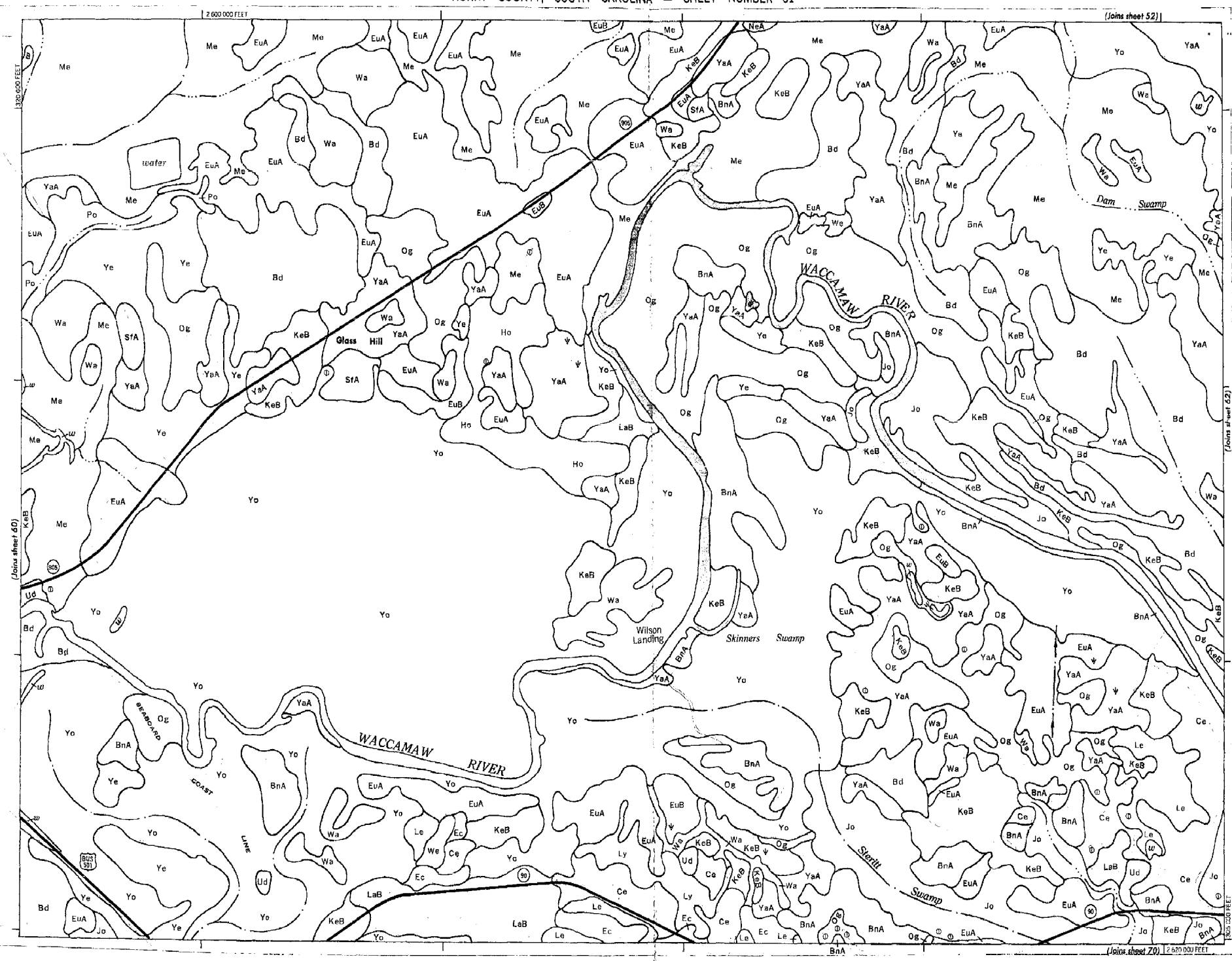
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 59



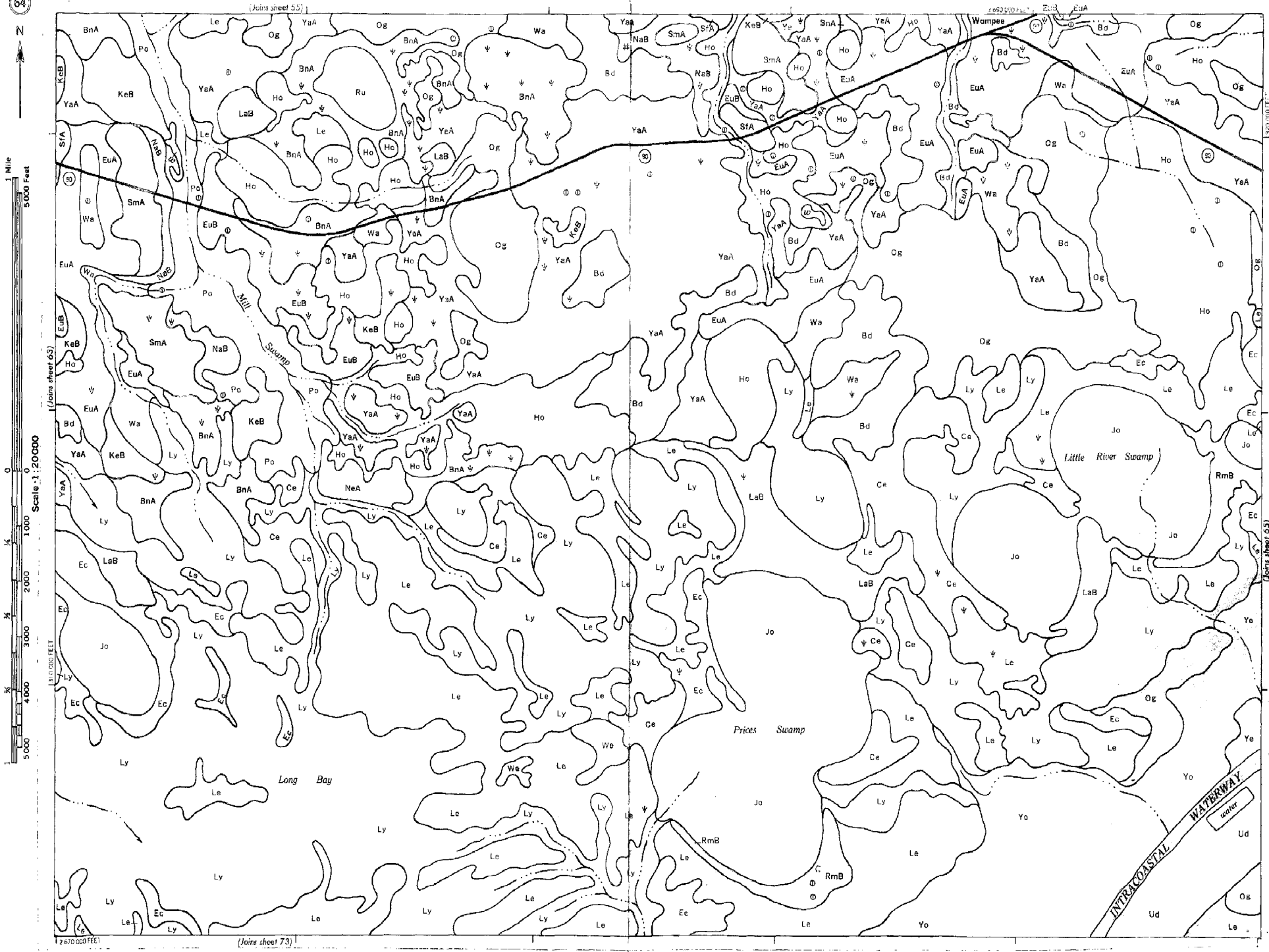
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 62



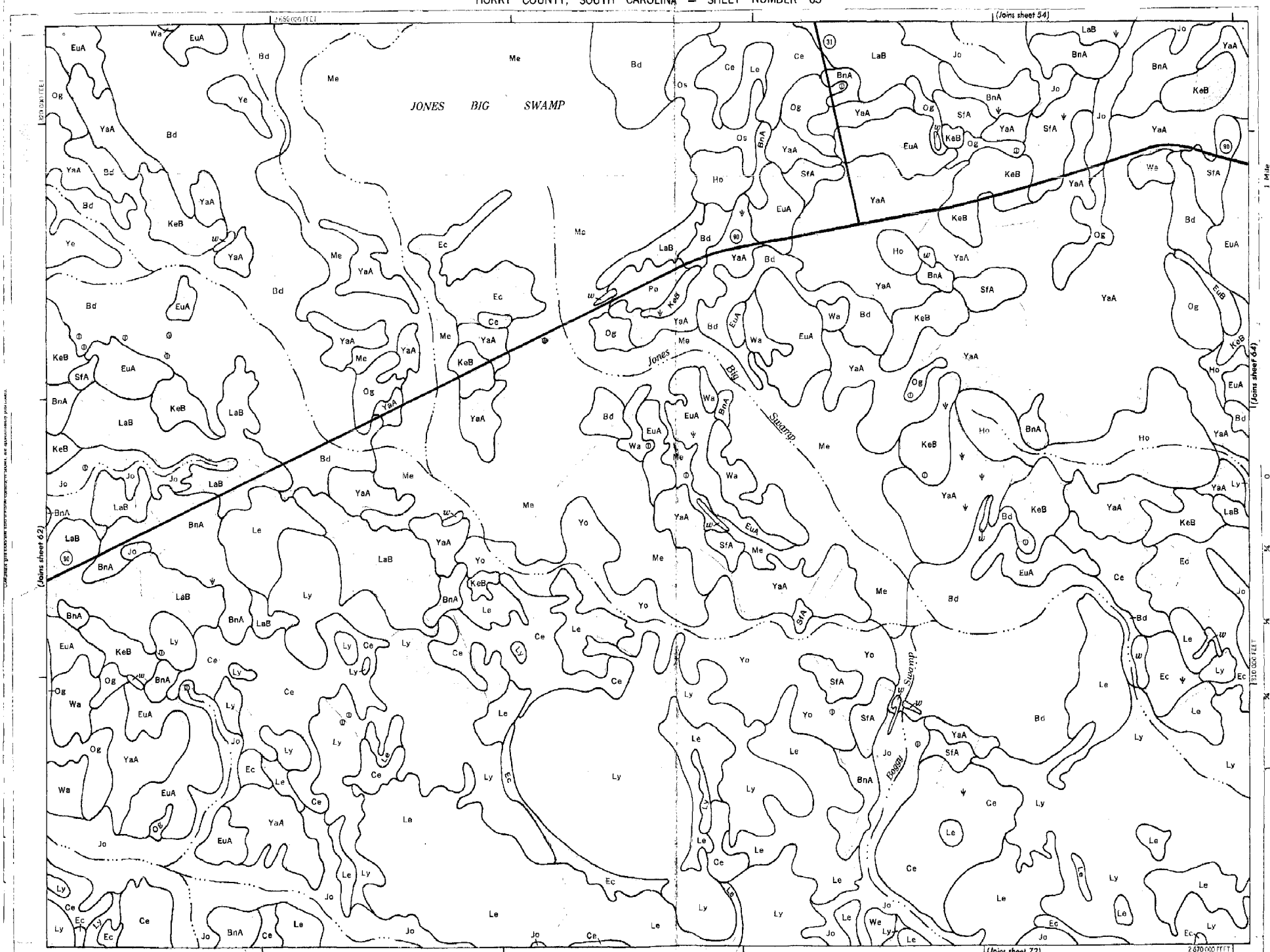
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 61

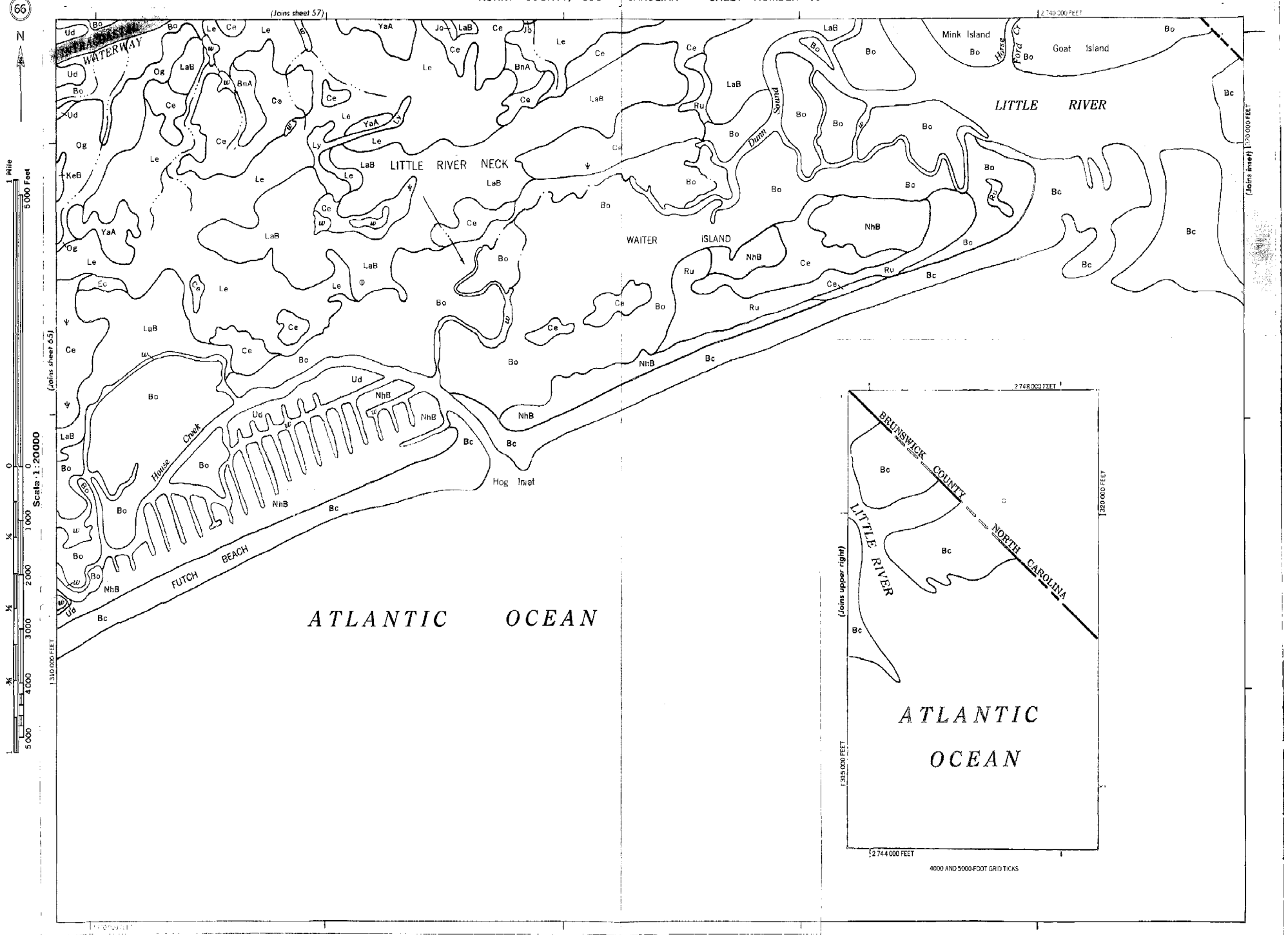


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 64

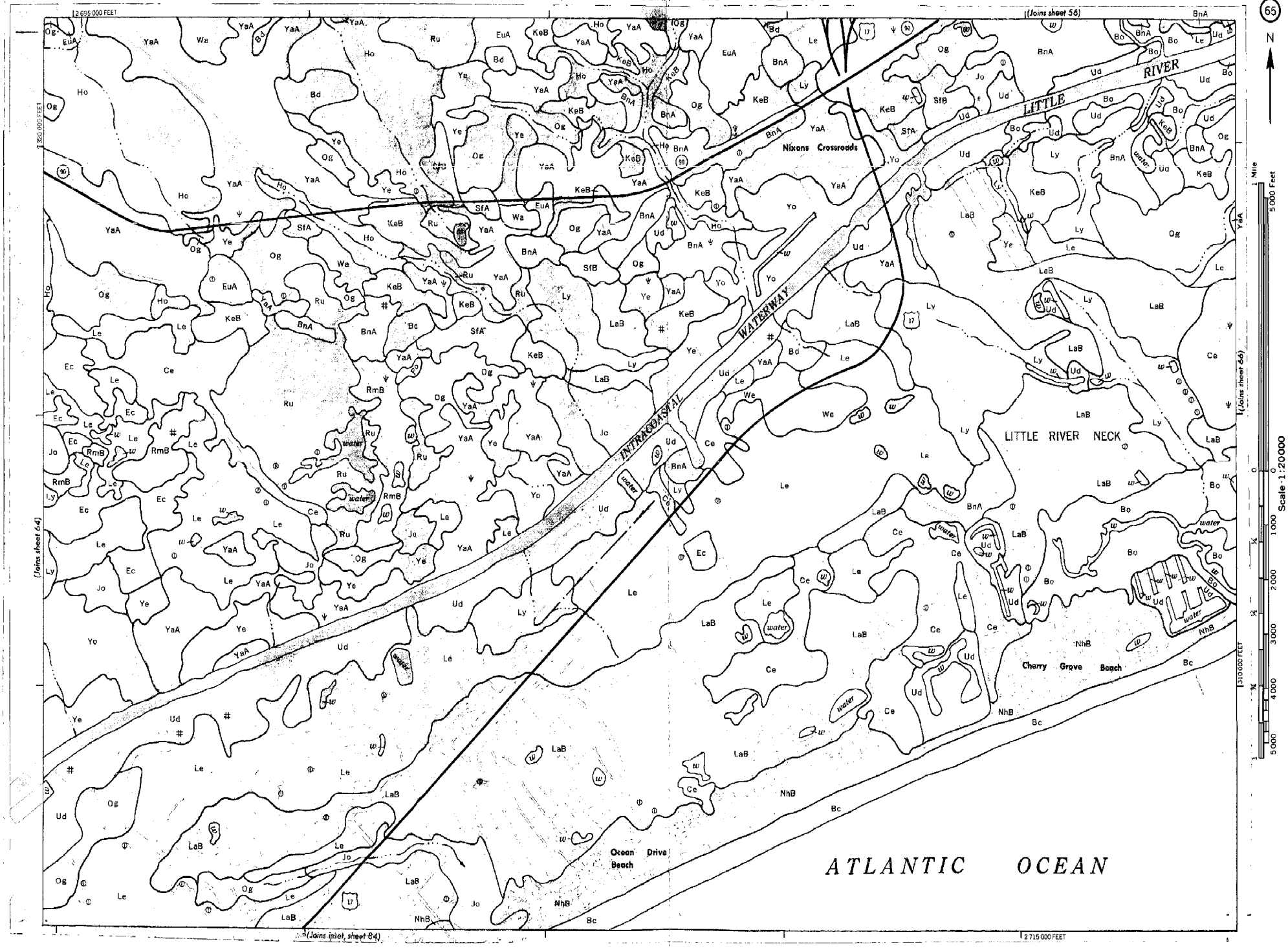


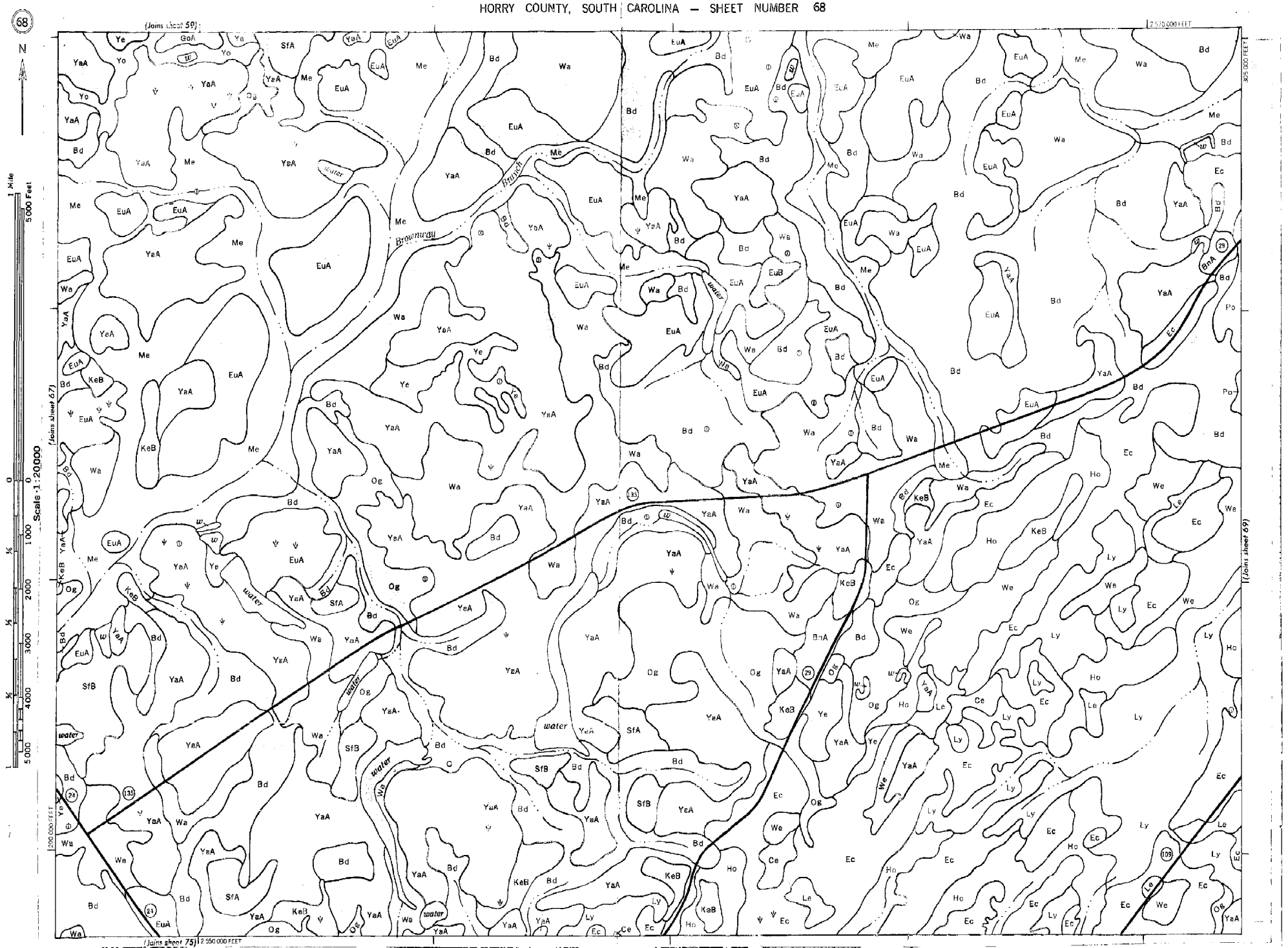
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 63



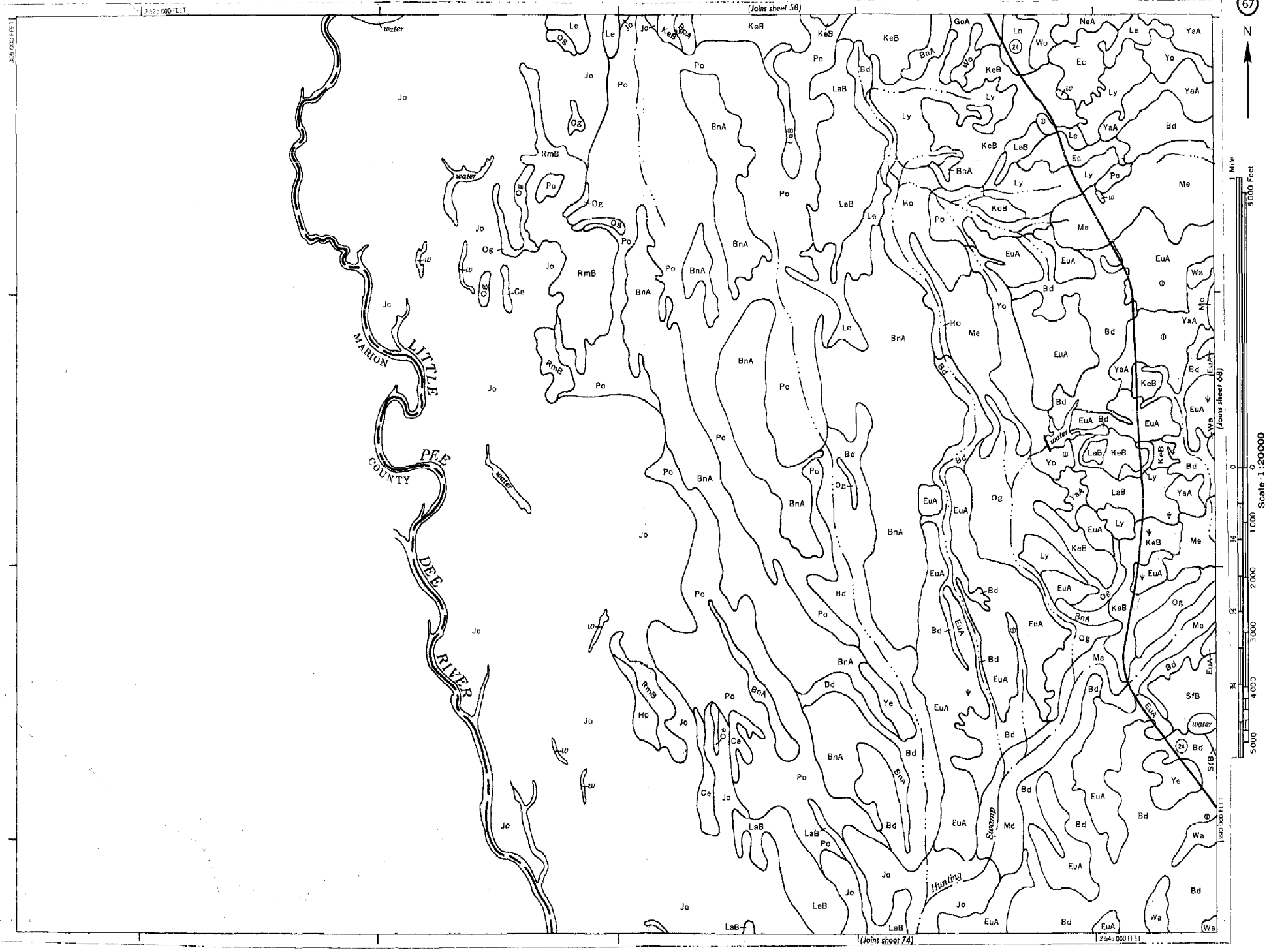

66
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 57)
(Joins sheet 65)
(Joins inset)
2 740 000 FEET
320 000 FEET
310 000 FEET
INTRACOASTAL WATERWAY
LITTLE RIVER NECK
WAITER ISLAND
Mink Island
Goat Island
Horse Ford Cr
Sunset Dunn
LITTLE RIVER
House Creek
Hog Inlet
FUTCH BEACH
ATLANTIC OCEAN
BRUNSWICK COUNTY
NORTH CAROLINA
(Joins upper right)
315 000 FEET
2 744 000 FEET
4000 AND 5000-FOOT GRID TICKS

HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 65

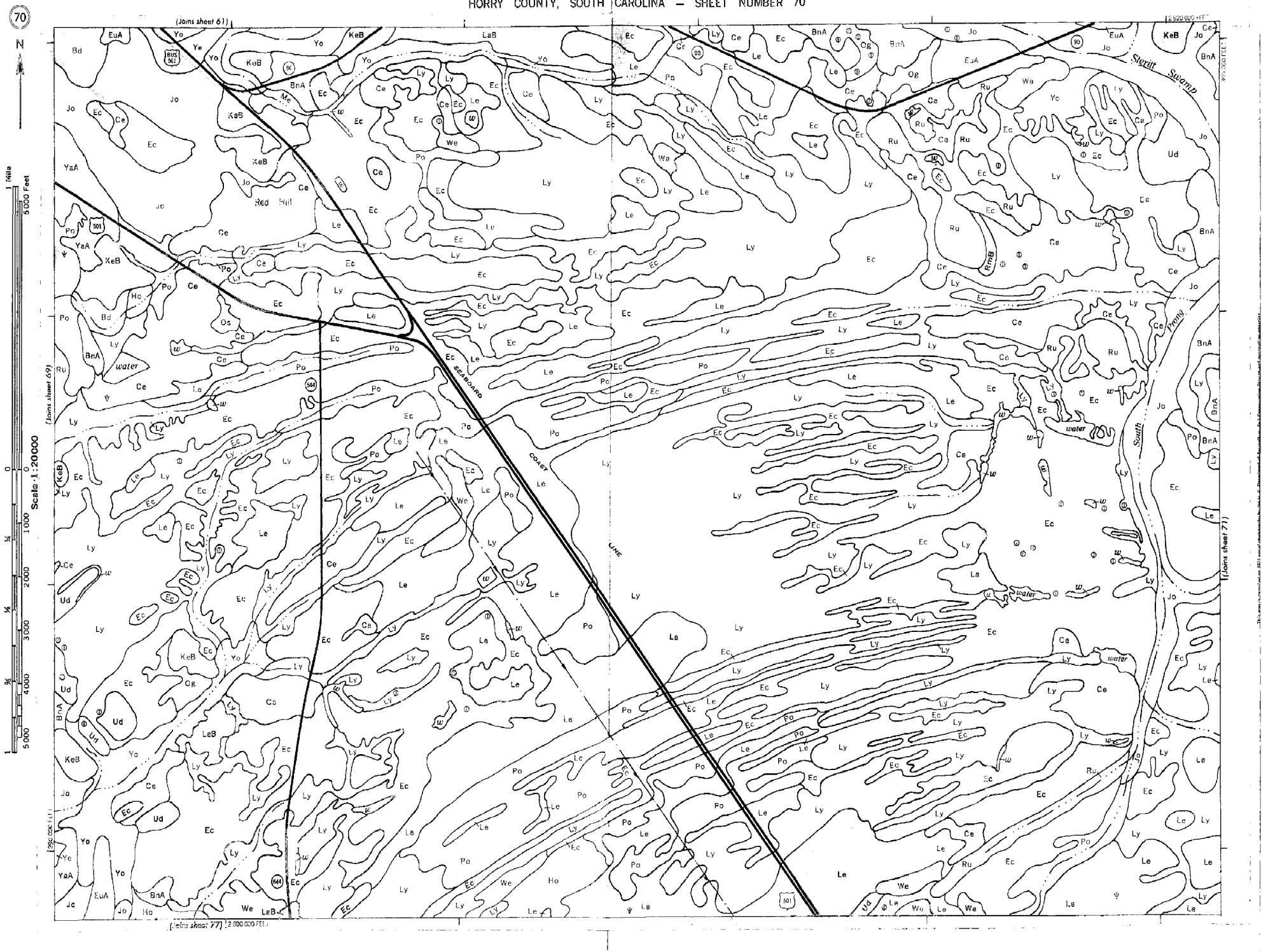



68
N
1 Mile
5,000 Feet
Scale - 1:20,000
0
1000
2000
3000
4000
5000
(Joins sheet 59)
(Joins sheet 67)
(Joins sheet 69)
(Joins sheet 75)
2 570 000 FEET
2 550 000 FEET
805 000 FEET
800 000 FEET
Brownway
Branch
water

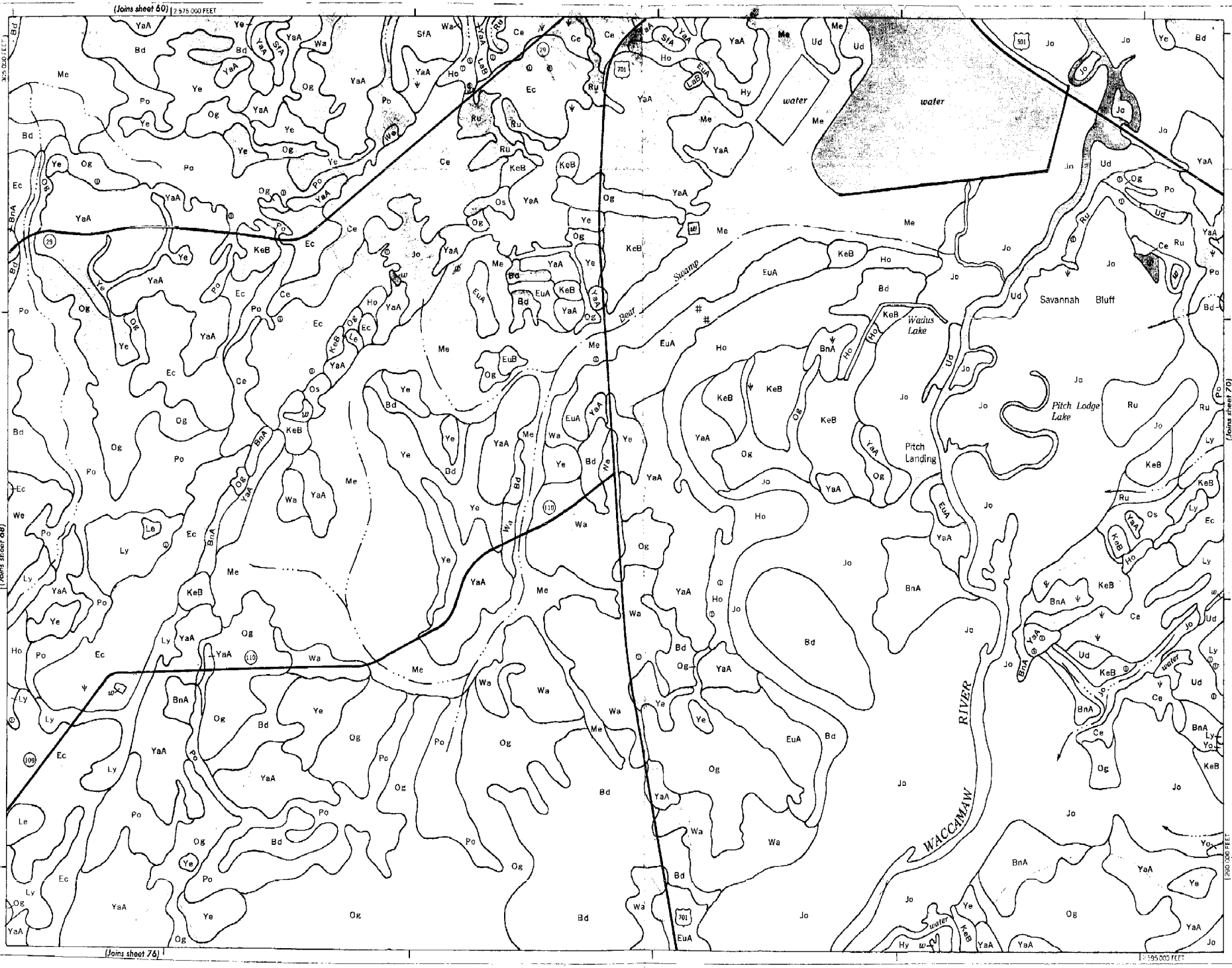
HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 67

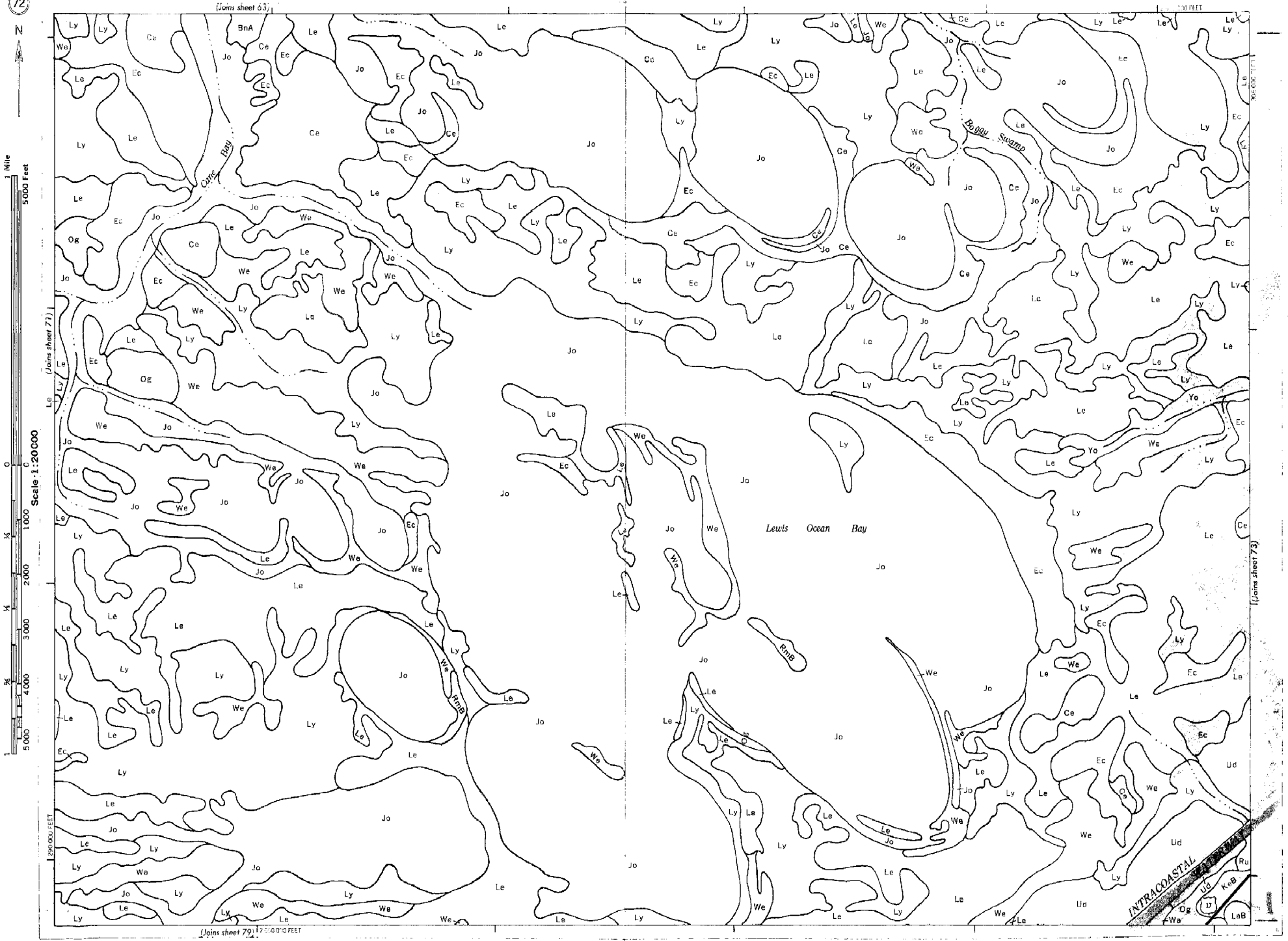


HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 70

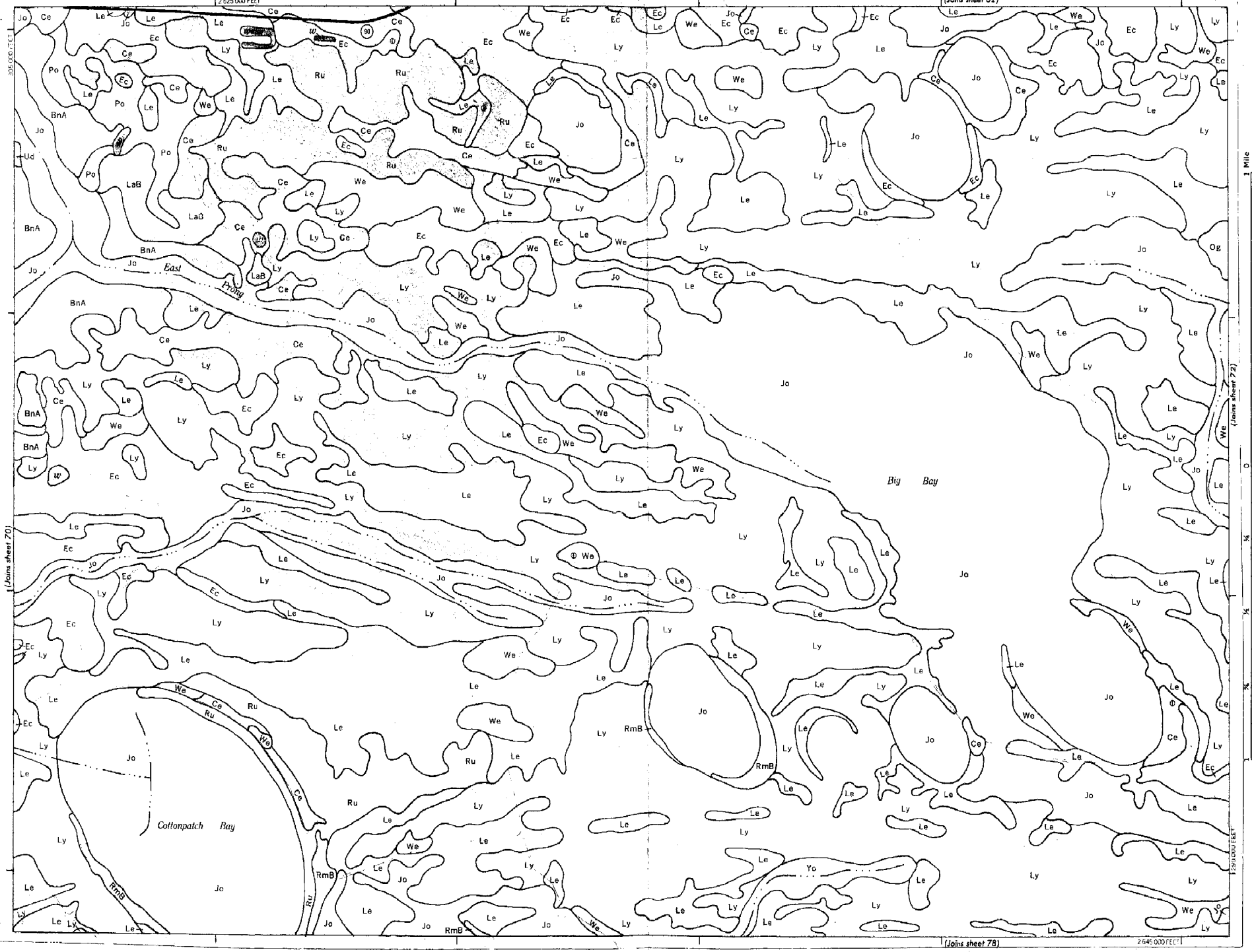


HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 69

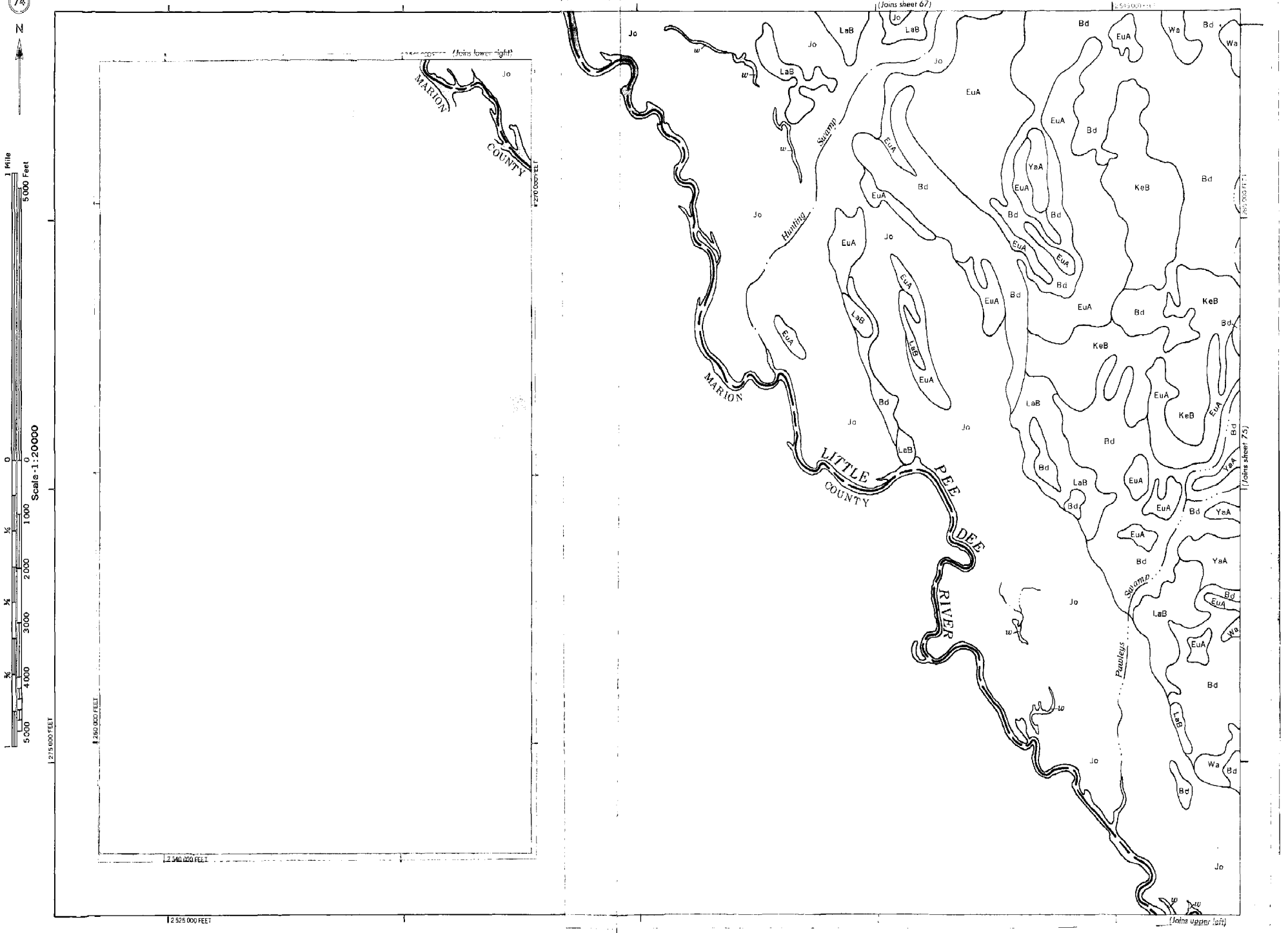


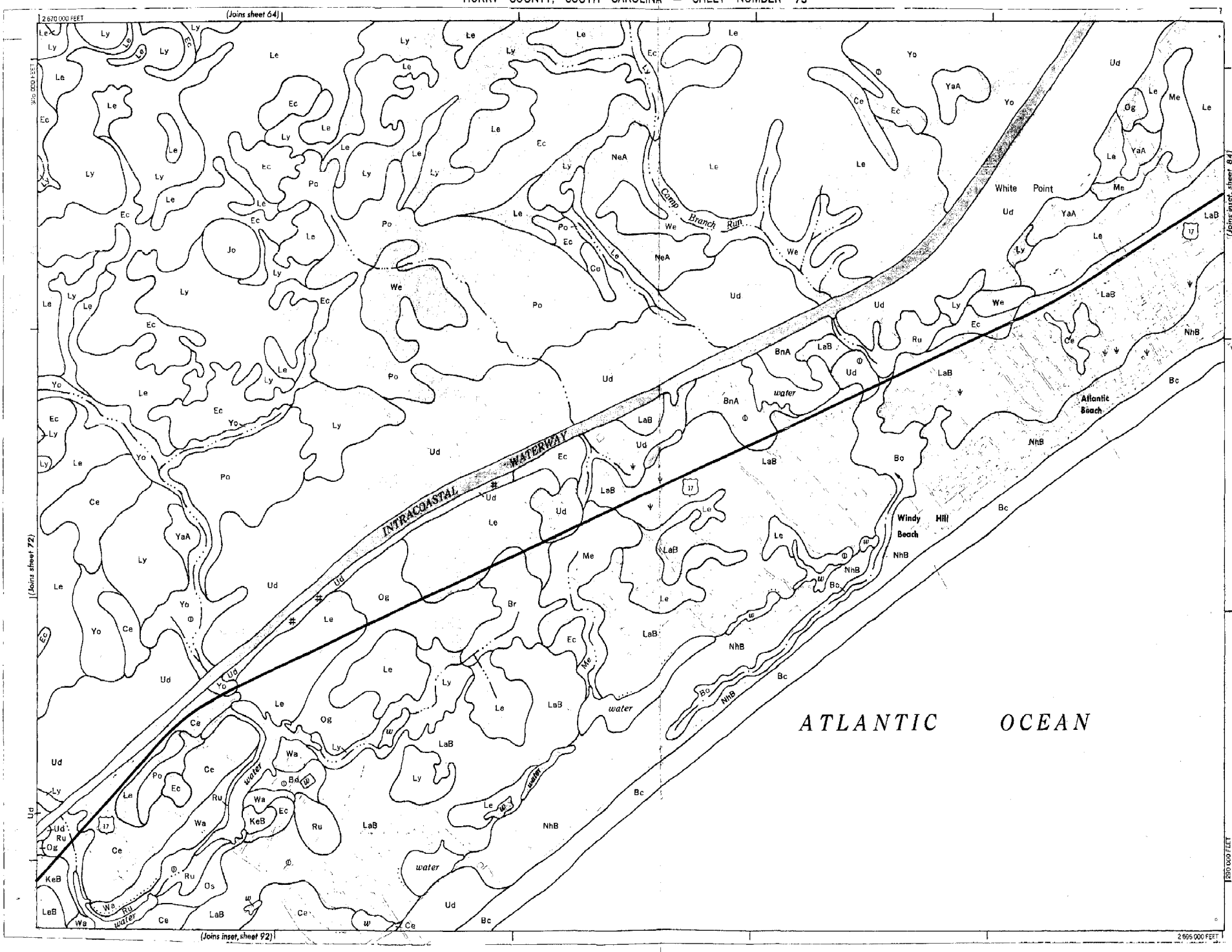

72
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 63)
(Joins sheet 71)
(Joins sheet 73)
(Joins sheet 79)
Cane Bay
Boggy Swamp
Lewis Ocean Bay
INTRACOASTAL WATERWAY
290 000 FEET
305 000 FEET

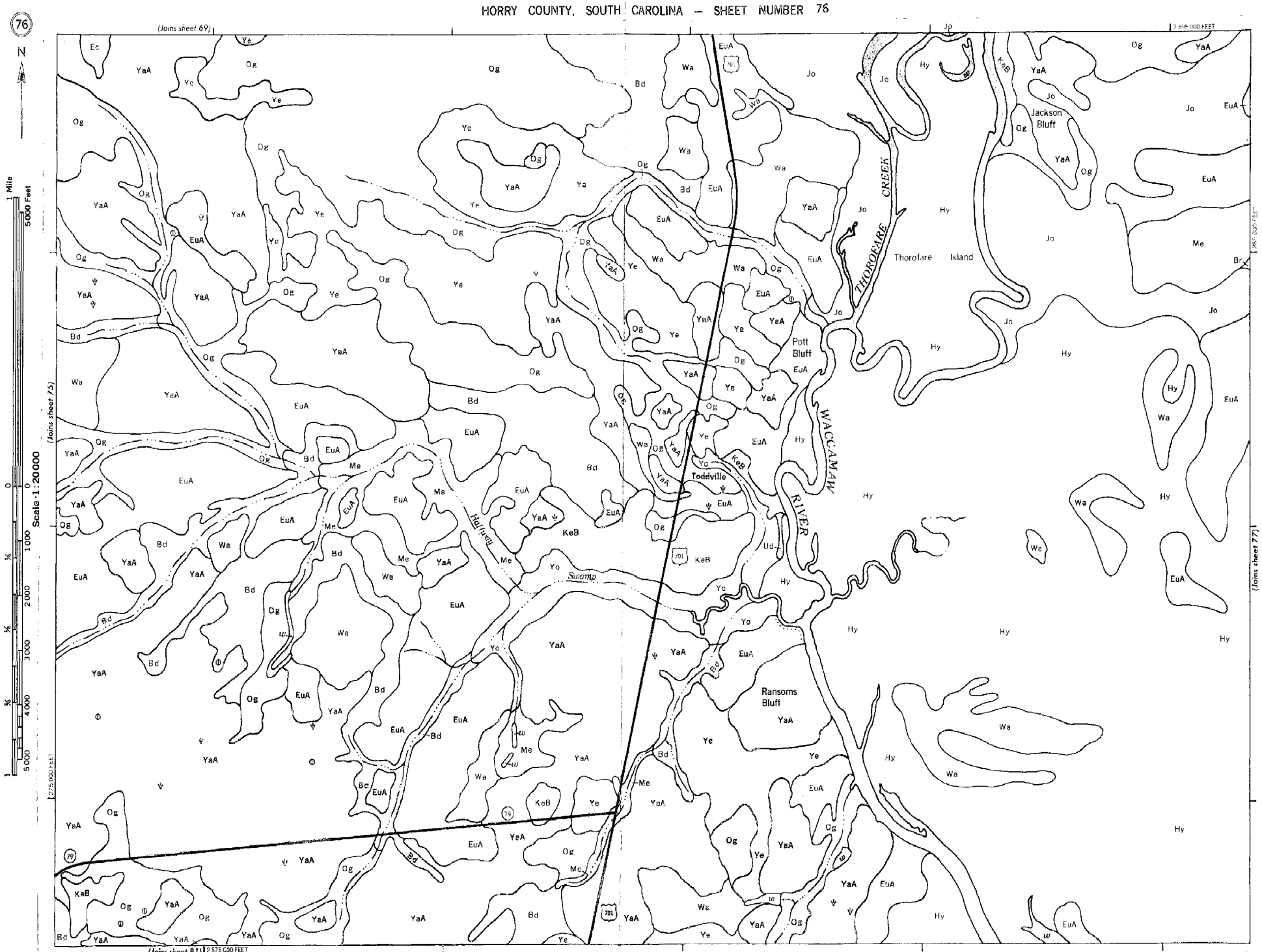
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 71



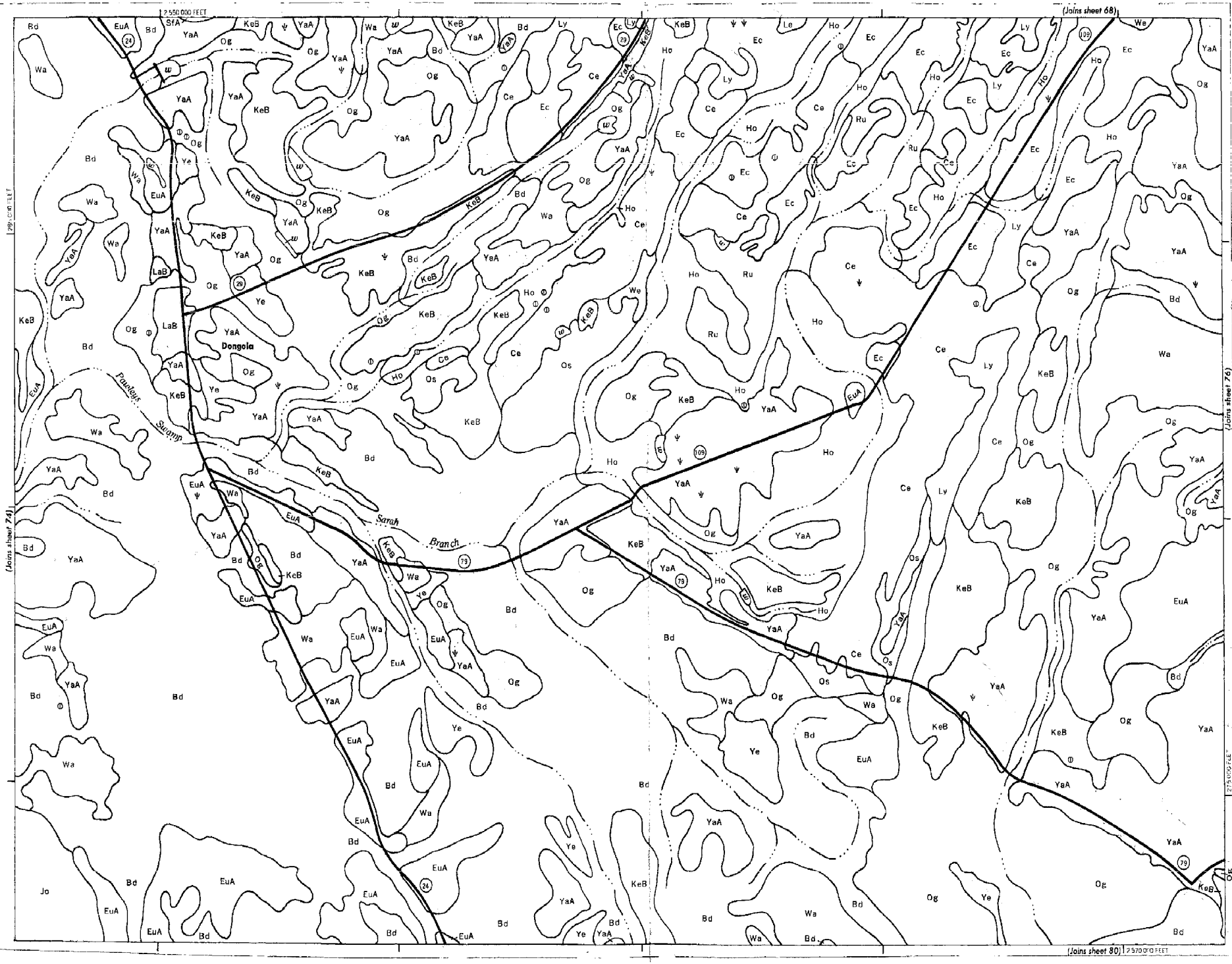
HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 74

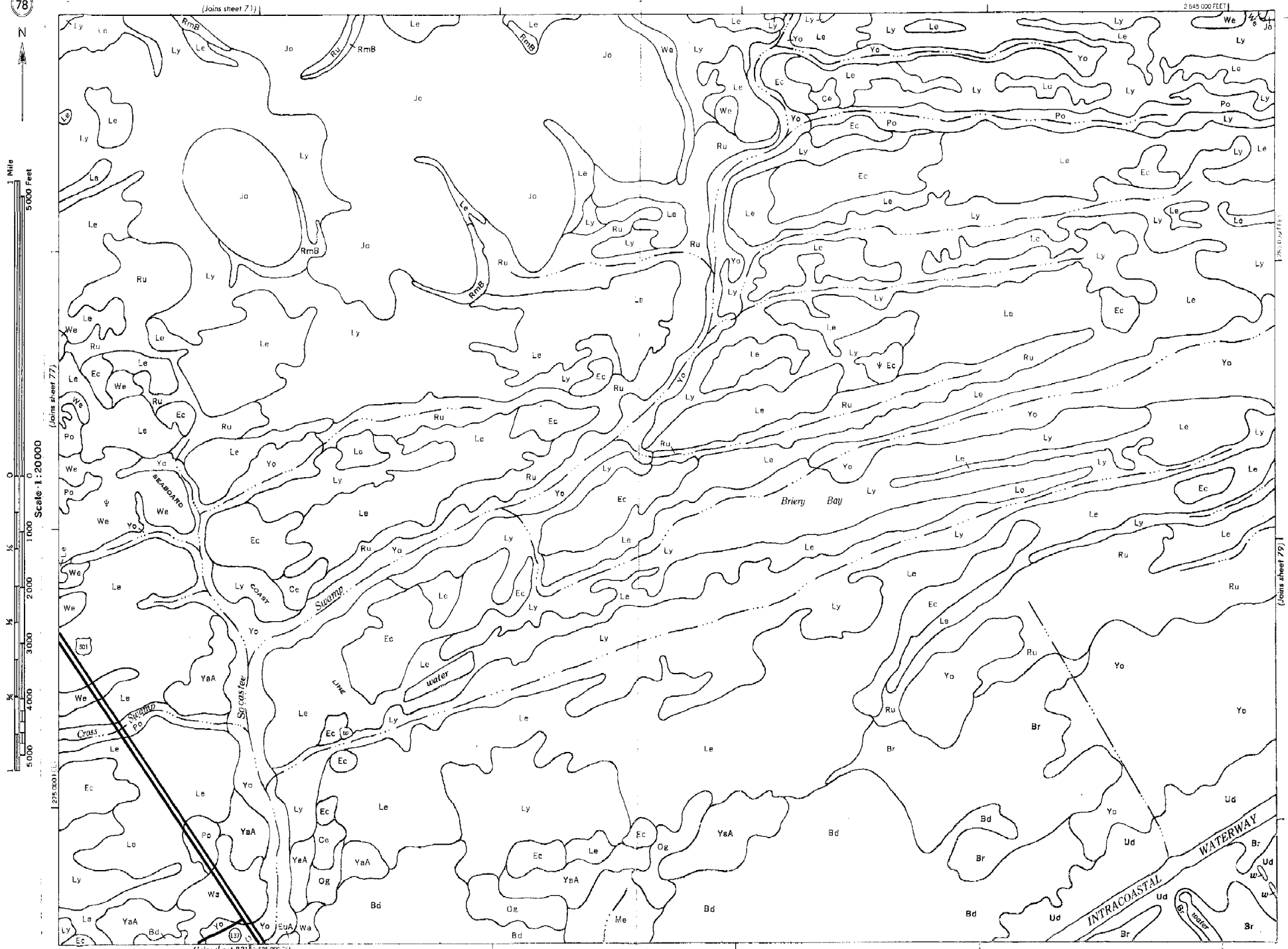



(Joins sheet 64)
2 670 000 FEET
(Joins sheet 72)
(Joins inset, sheet 92)
2 695 000 FEET
(Joins inset, sheet 84)
INTRACOASTAL WATERWAY
Camp Branch Run
White Point
Atlantic Beach
Windy Hill Beach
ATLANTIC OCEAN
water
1 Mile
5000 Feet
Scale 1:20000
N
73

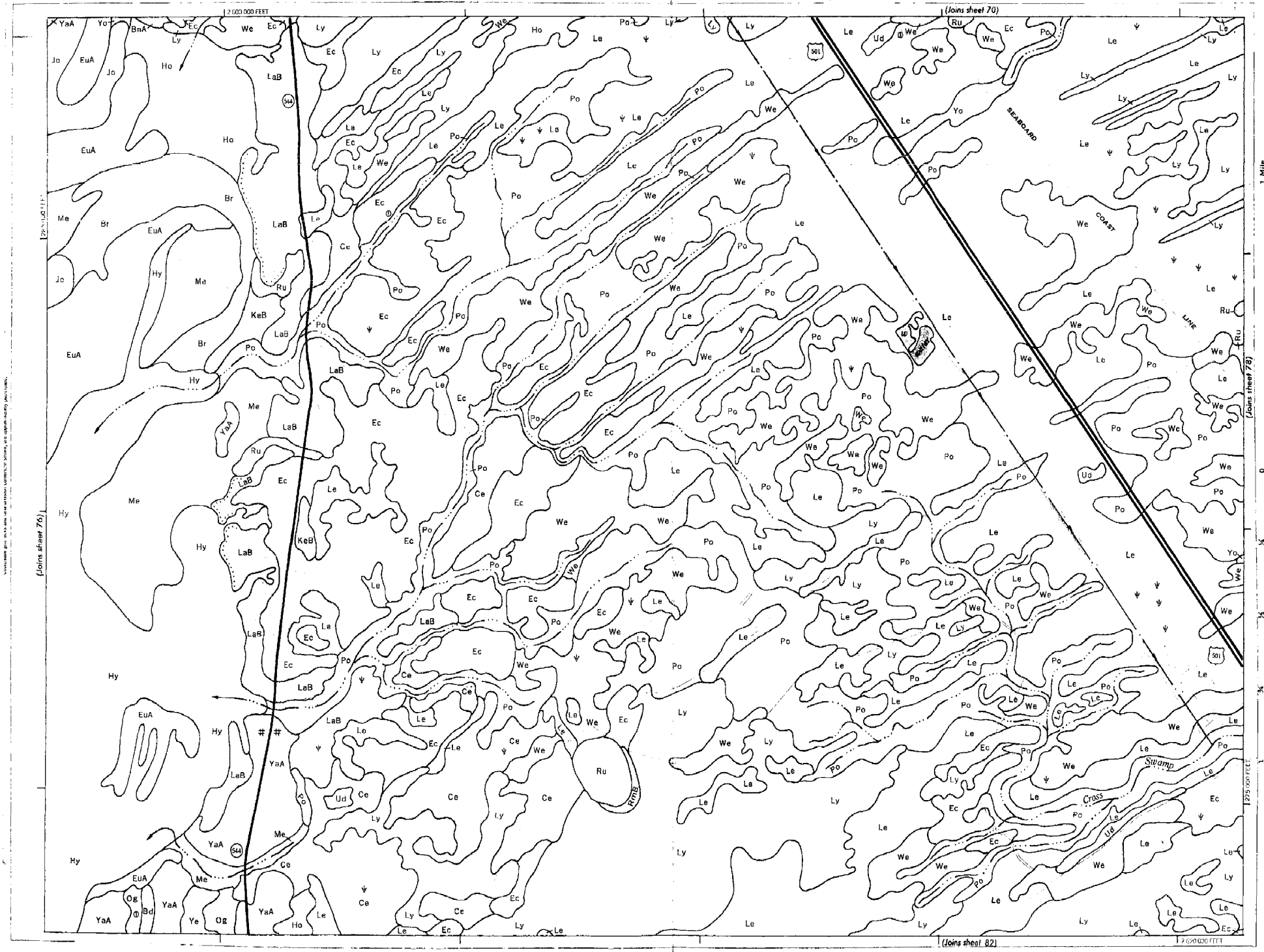

76
N
(Joins sheet 69)
(Joins sheet 75)
(Joins sheet 77)
(Joins sheet 81)
2 575 000 FEET
Scale 1:20000
1 Mile
5000 Feet
Thorofare Island
Jackson Bluff
Pott Bluff
Toddville
Ransoms Bluff
THOROFARE CREEK
WACCAMAW RIVER
Halfway Swamp
701
79

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 75



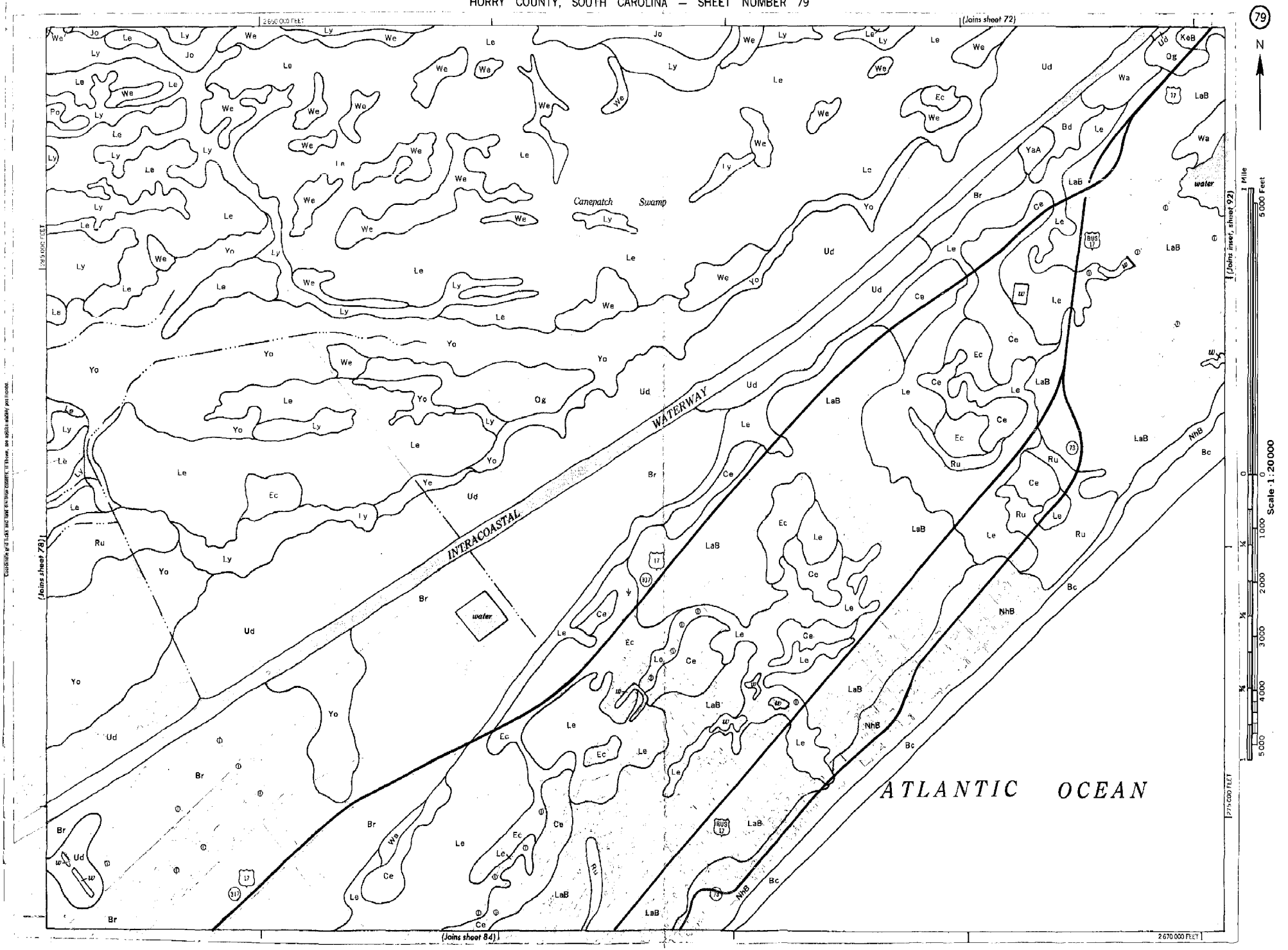

78
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 71)
(Joins sheet 77)
(Joins sheet 79)
(Joins sheet 83)
2 645 000 FEET
2 625 000 FEET
225 000 FEET
Briery Bay
Swamp
Socastee
Cross Swamp
SEABOARD COAST LINE
INTRACOASTAL WATERWAY
water
501
137

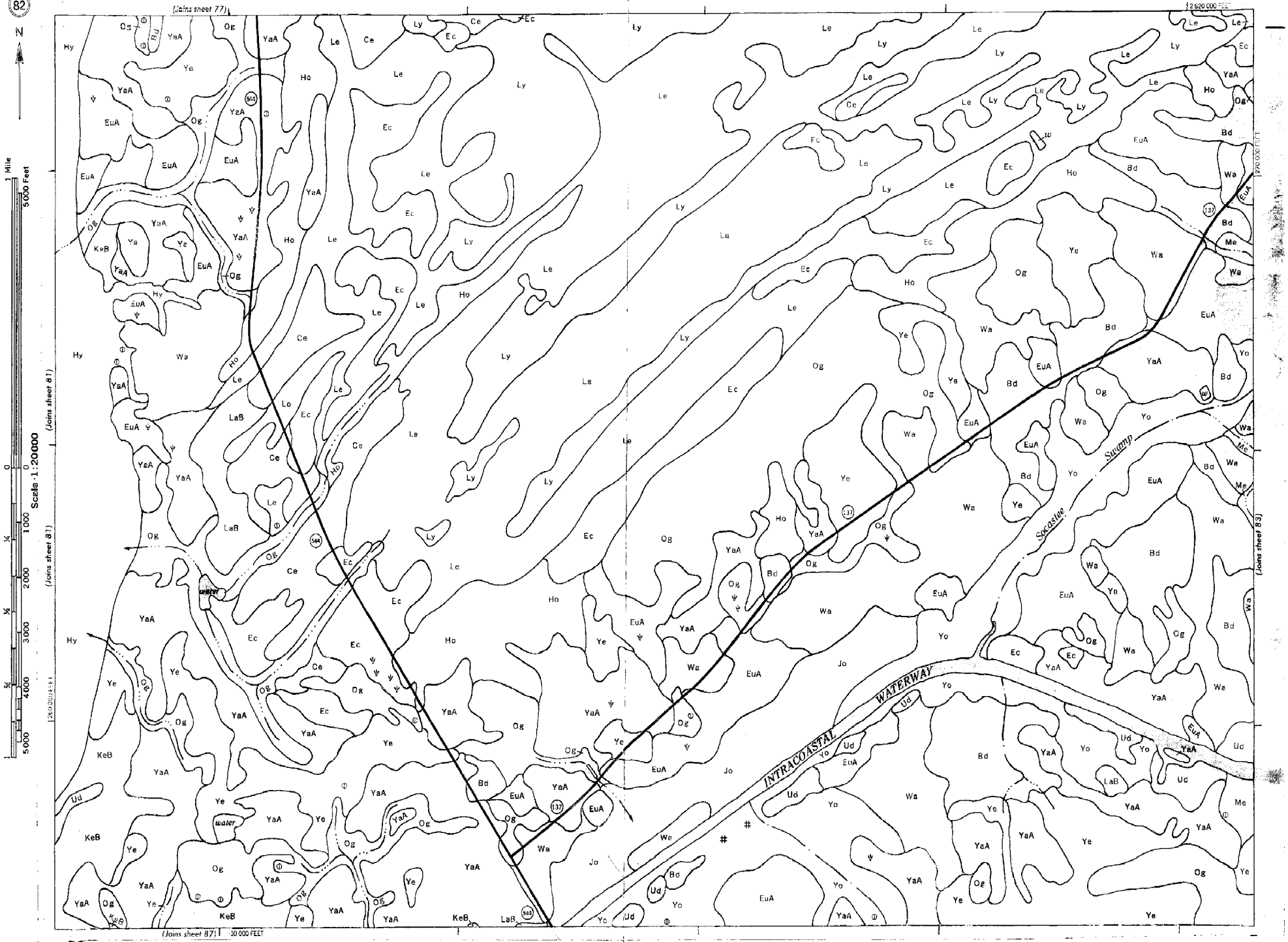
HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 77



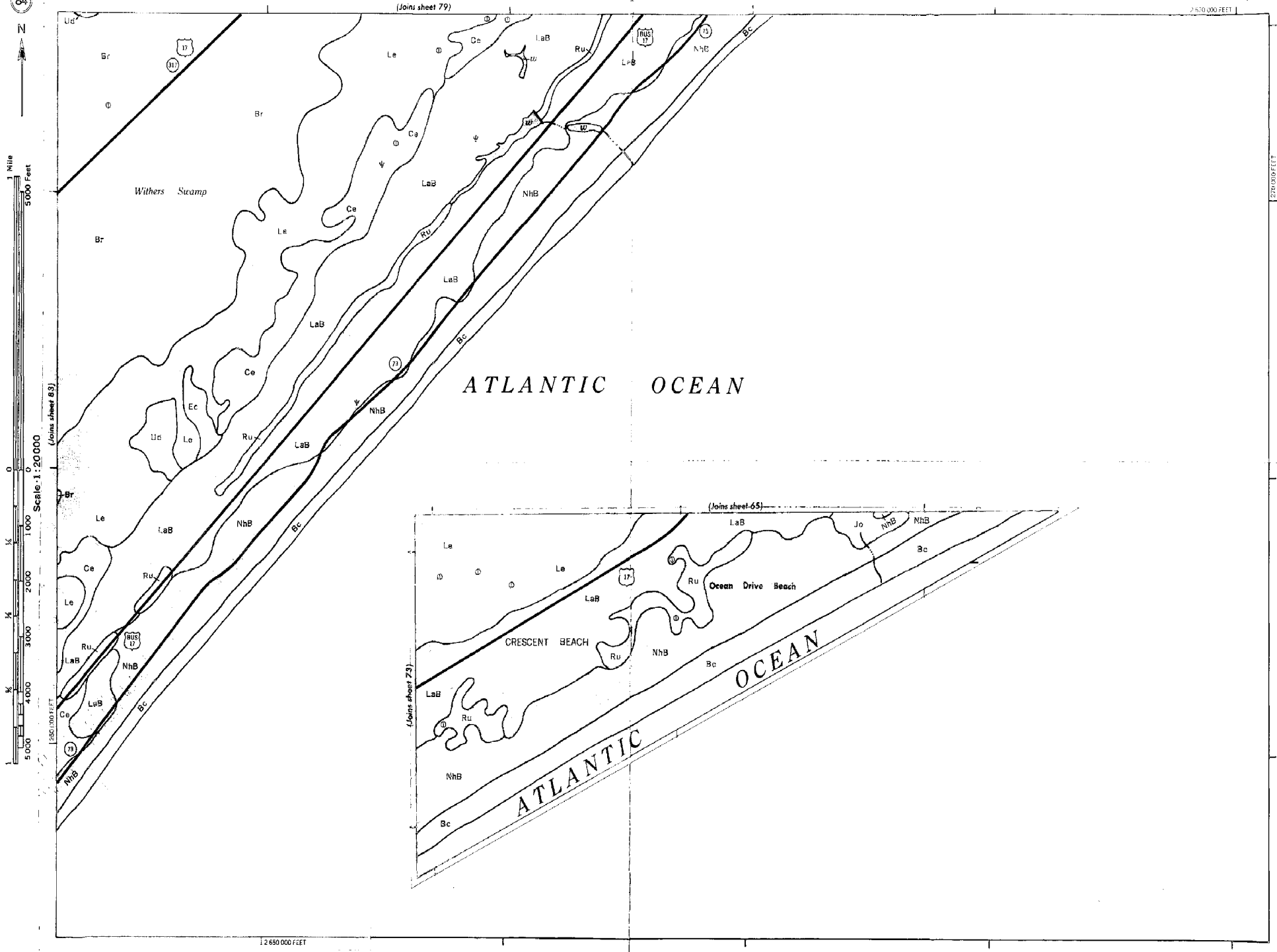
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 80

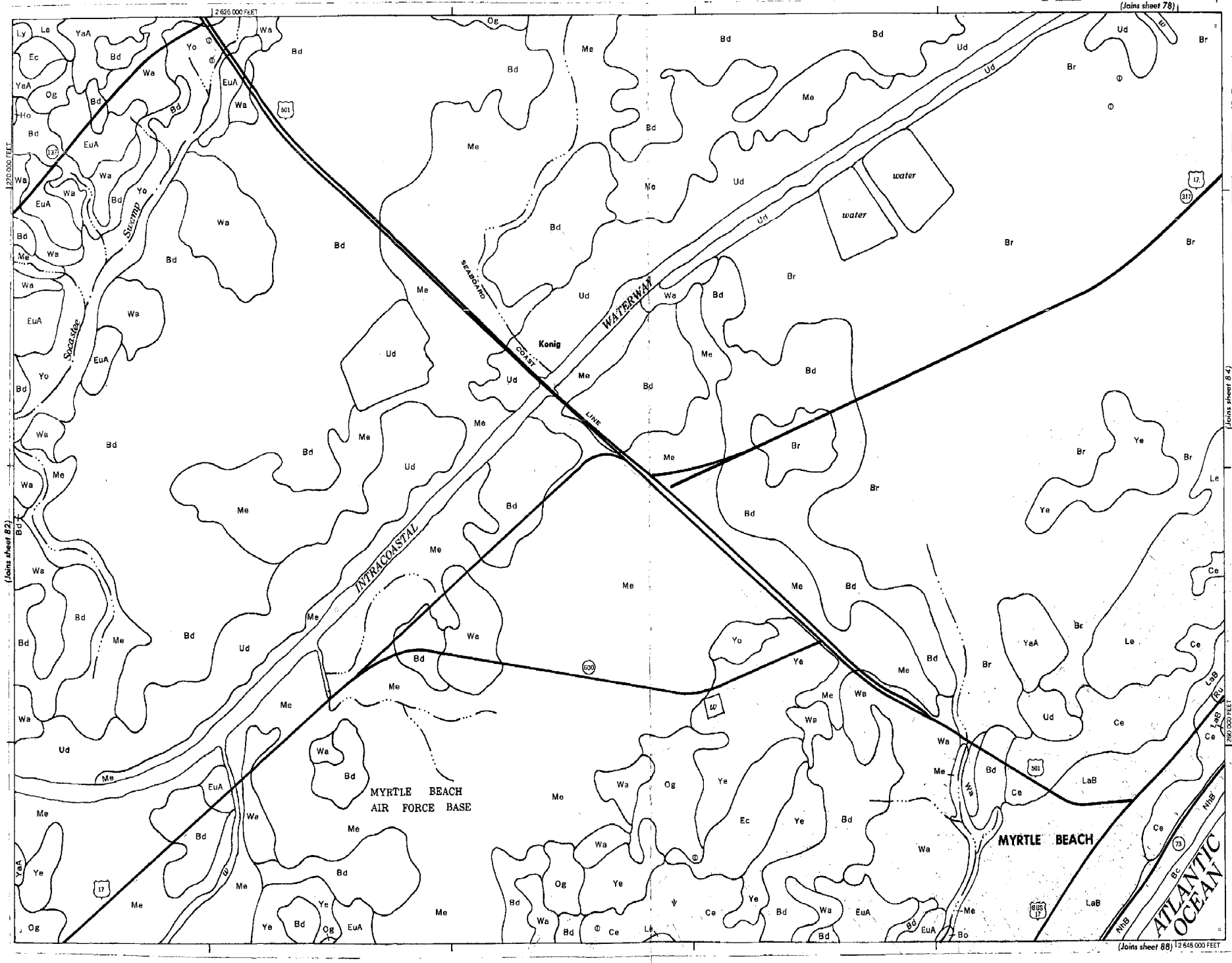
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 79



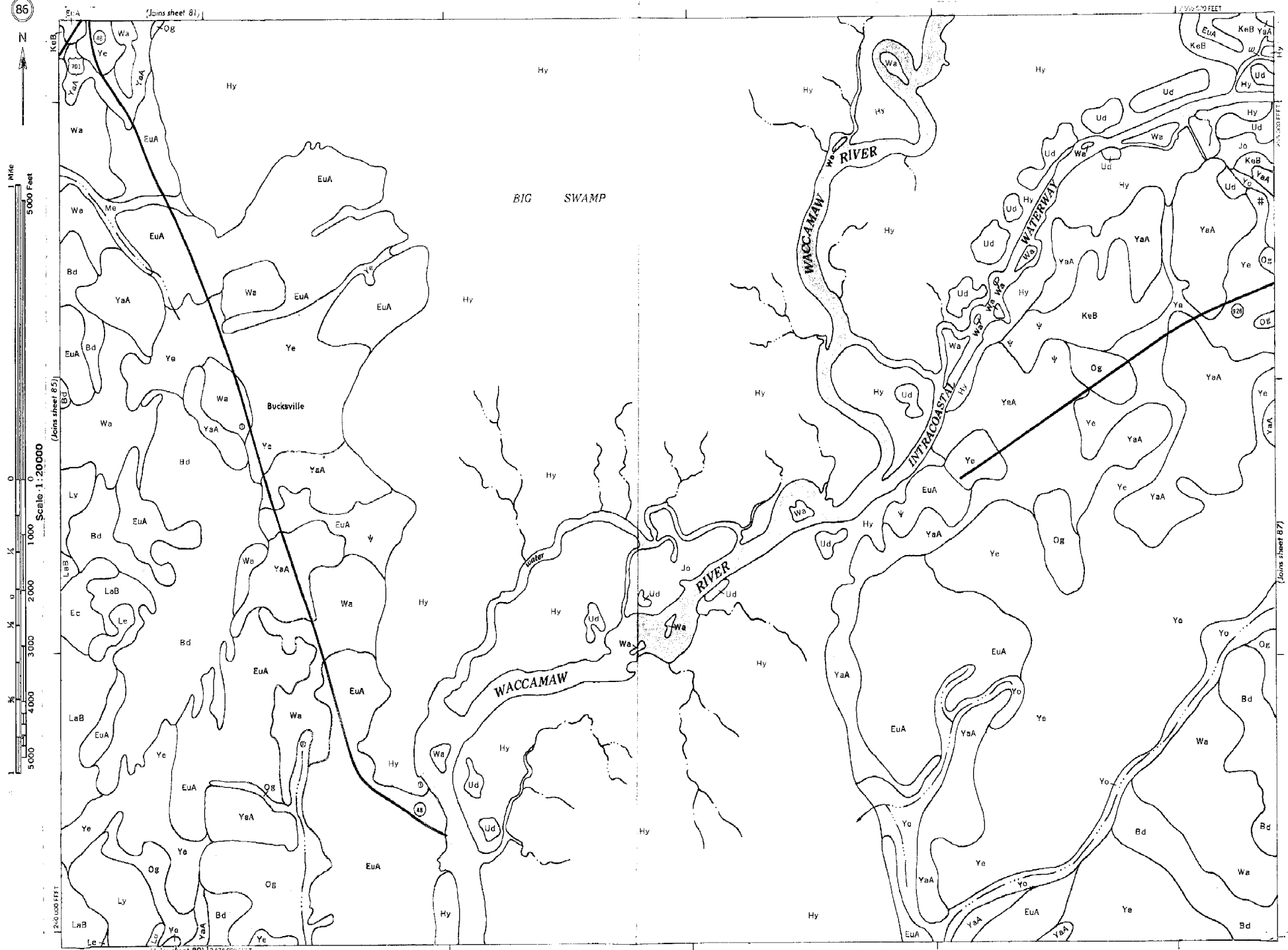

82
N
(Joins sheet 77)
(Joins sheet 81)
(Joins sheet 81)
(Joins sheet 87)
(Joins sheet 83)
2 620 000 FEET
270 000 FEET
30 000 FEET
1 Mile
5000 Feet
Scale 1:20000
INTRACOASTAL WATERWAY
Swamp
Socastee
water

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 81

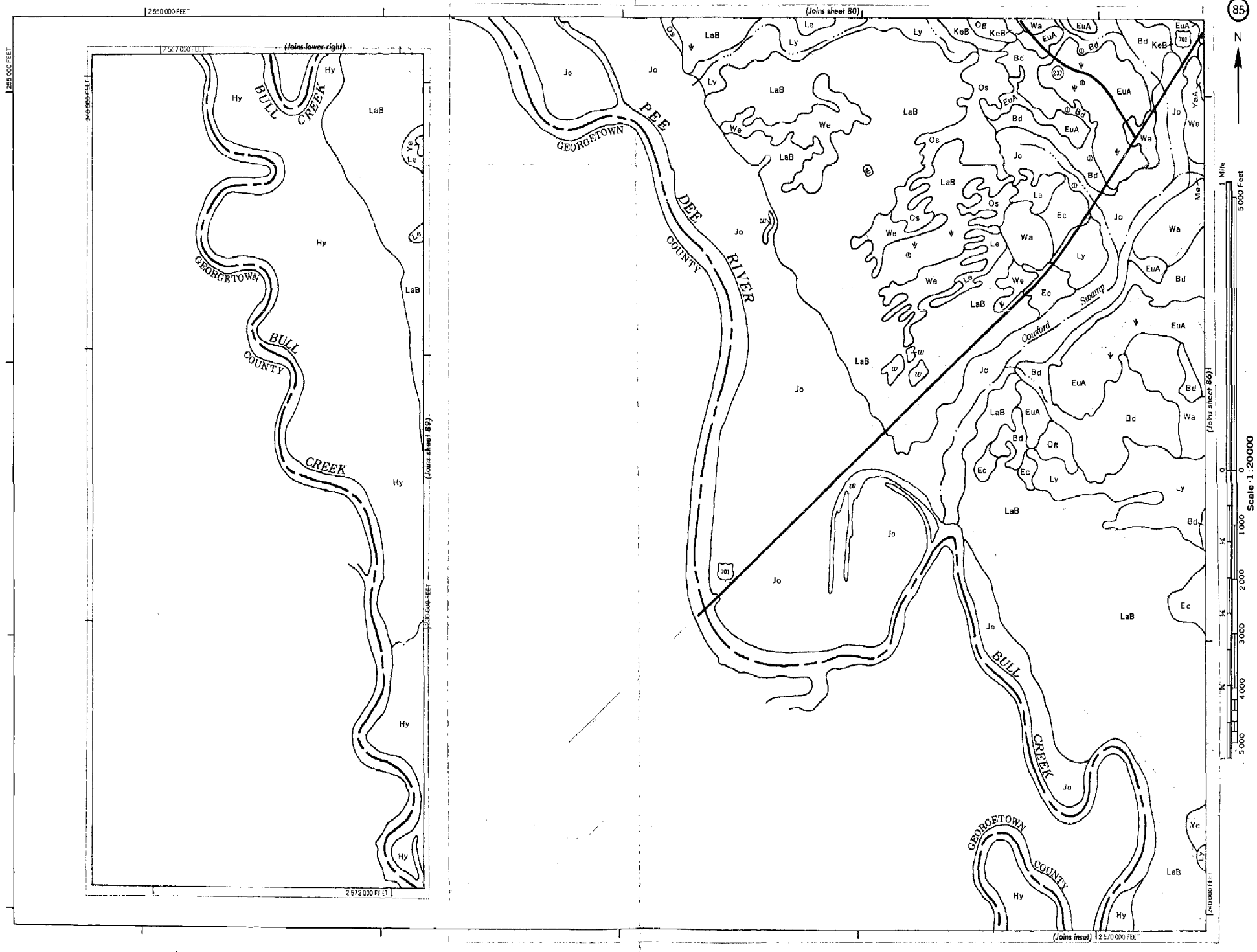

(Joins sheet 79)
(Joins sheet 83)
(Joins sheet 65)
(Joins sheet 73)
Withers Swamp
ATLANTIC OCEAN
CRESCENT BEACH
Ocean Drive Beach
Ud
Br
Le
Ce
Ec
LaB
Ru
NhB
Bc
Jo
1 Mile
5000 Feet
Scale 1:20000
2650000 FEET

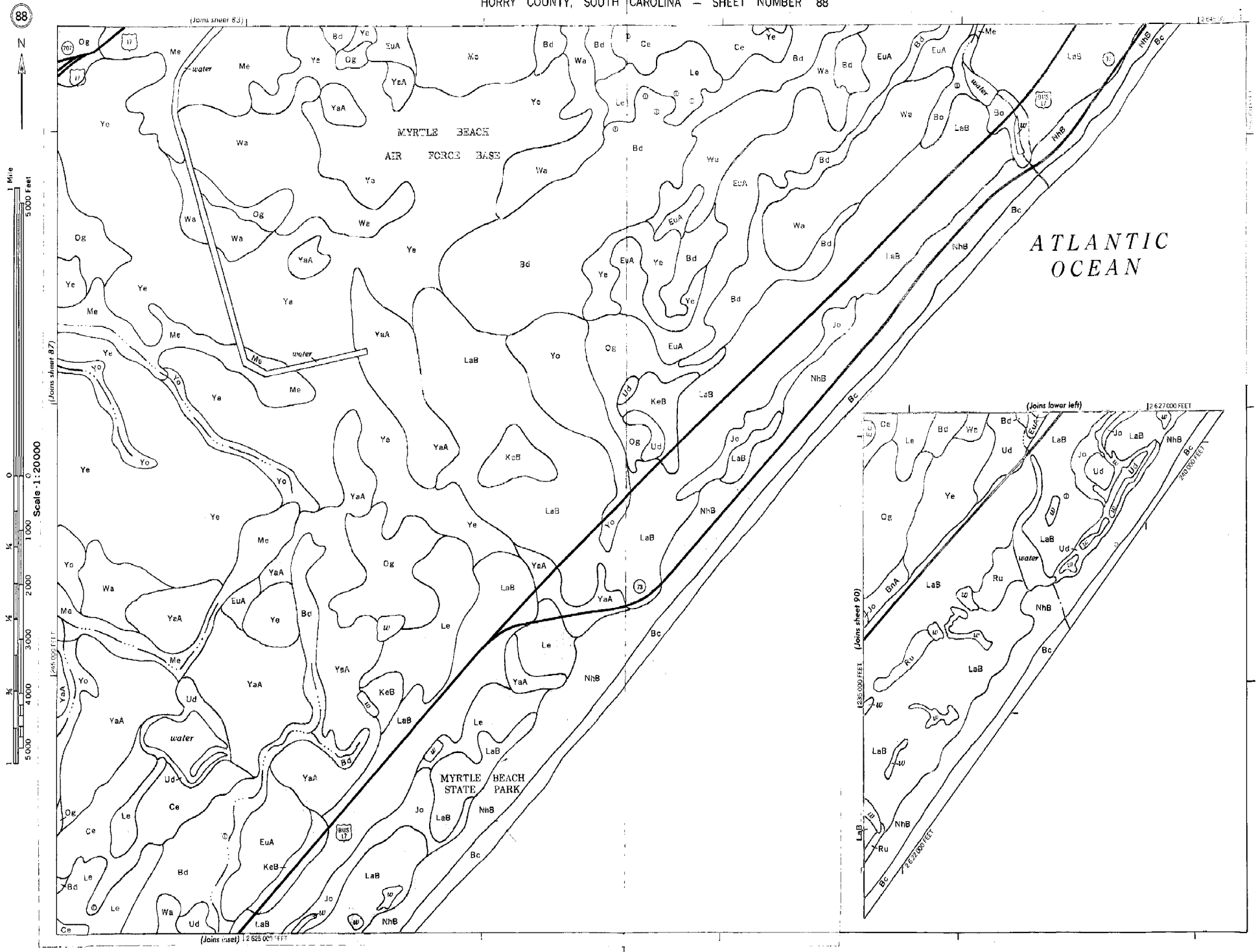

83
N
(Joins sheet 78)
(Joins sheet 82)
(Joins sheet 84)
(Joins sheet 88)
2 626 000 FEET
2 645 000 FEET
270 000 FEET
260 000 FEET
Socastee
Swamp
SEABOARD
COAST
LINE
Konig
INTRACOASTAL
WATERWAY
water
MYRTLE BEACH
AIR FORCE BASE
MYRTLE BEACH
ATLANTIC
OCEAN
1 Mile
5000 Feet
Scale 1:20000

HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 86



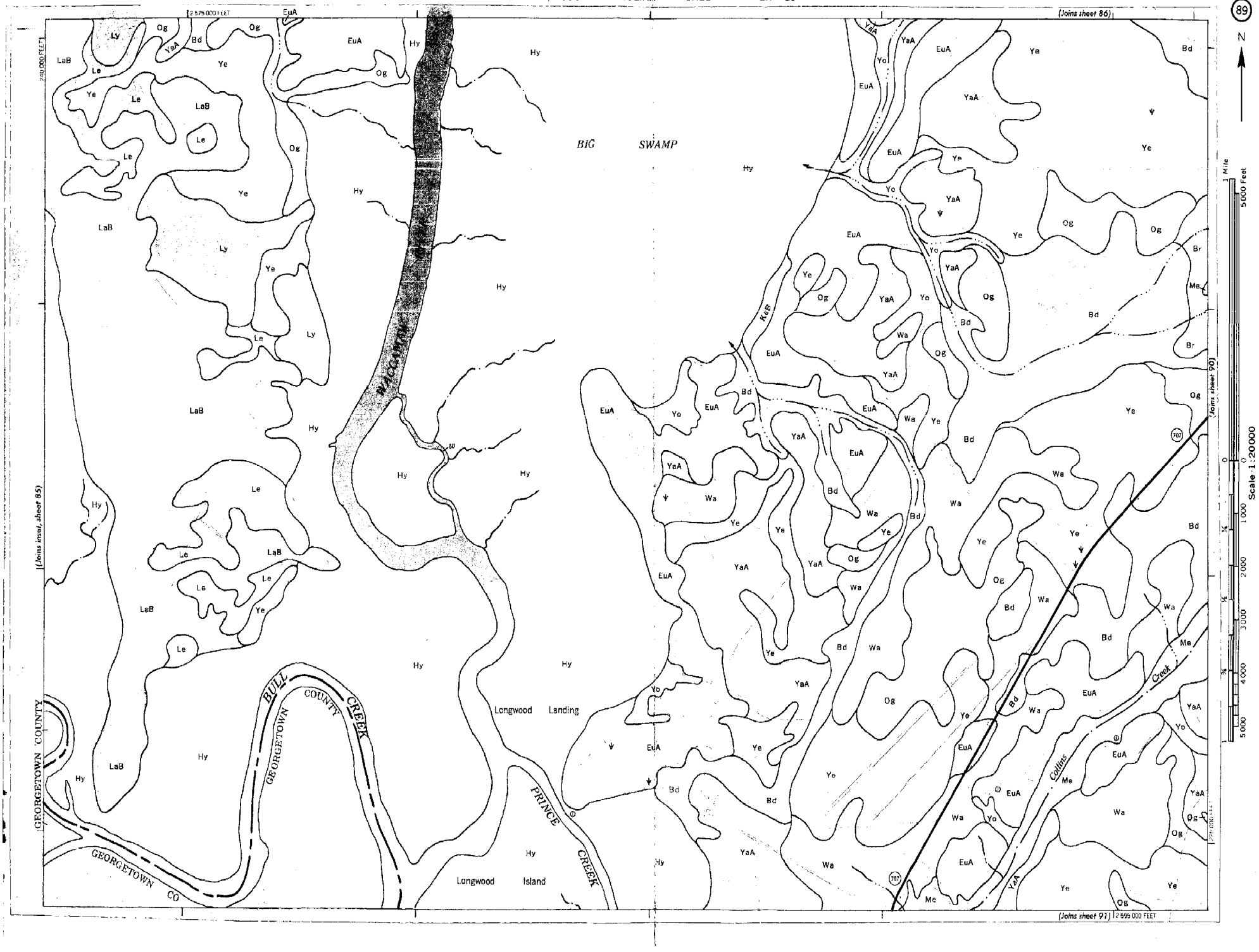
HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 85

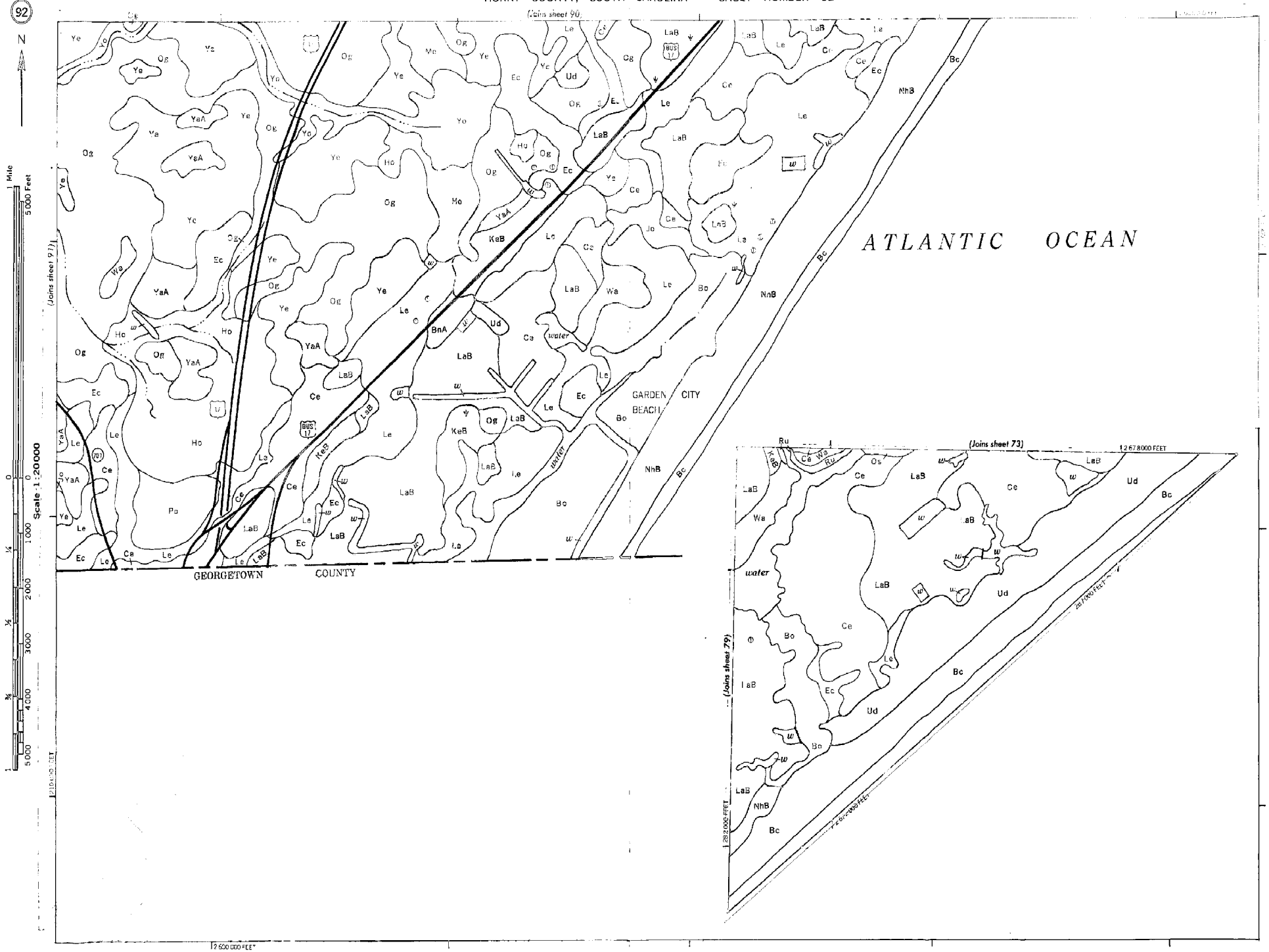



88
N
1 Mile
5000 Feet
Scale 1:20000
(Joins sheet 83)
(Joins sheet 87)
(Joins inset)
(Joins lower left)
(Joins sheet 90)
MYRTLE BEACH AIR FORCE BASE
MYRTLE BEACH STATE PARK
ATLANTIC OCEAN
water
2 627 000 FEET
240 000 FEET
235 000 FEET
2 622 000 FEET

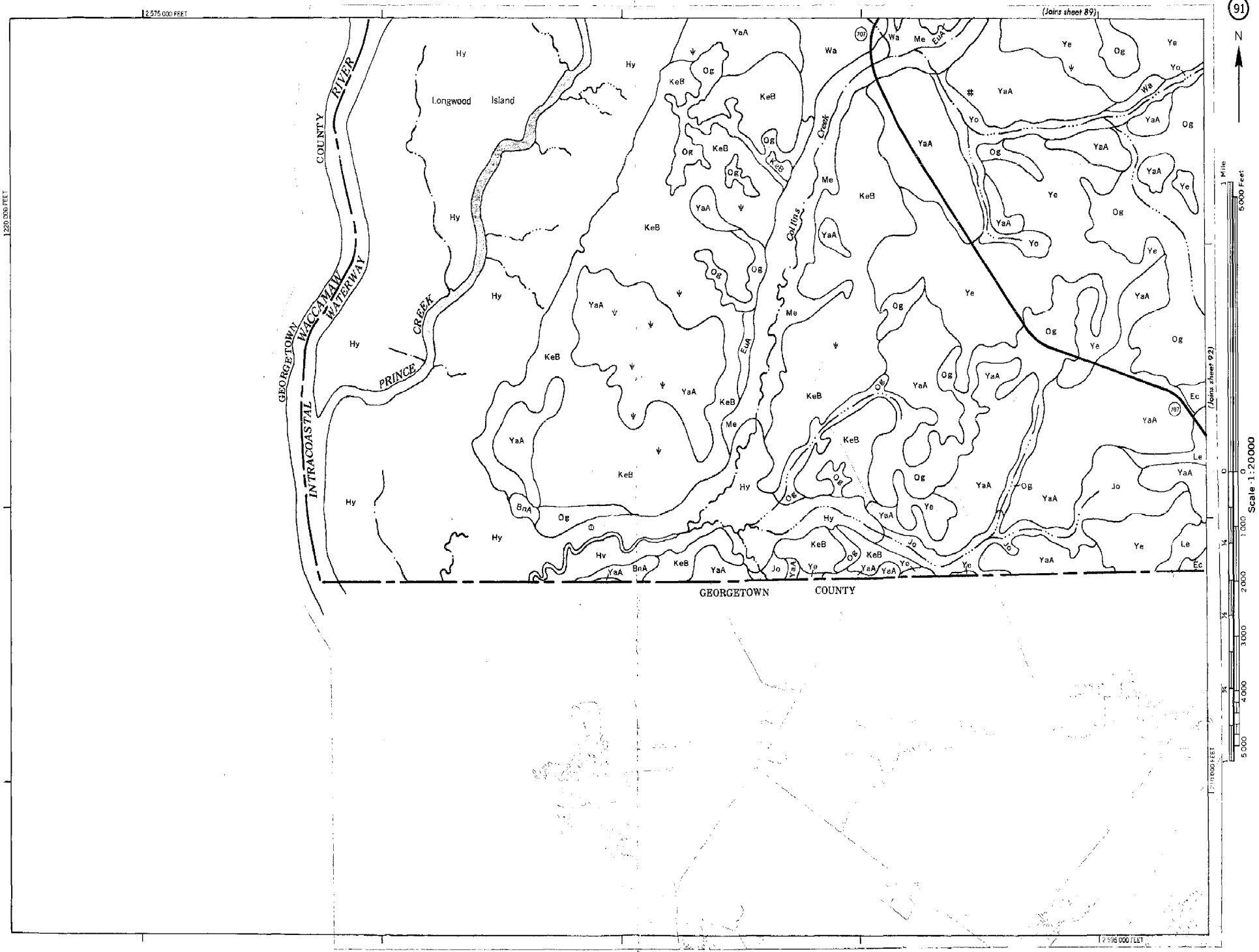
HORRY COUNTY, SOUTH CAROLINA — SHEET NUMBER 87

90
N
1 Mile
5000 Feet
Scale - 1:20000
(Joins sheet 87)
(Joins sheet 89)
(Joins sheet 92)
(Joins sheet 88)
Cedar Swamp
Big Swamp
water
SURFSIDE BEACH
ATLANTIC OCEAN


89
N
(Joins sheet 86)
(Joins sheet 90)
(Joins sheet 91)
(Joins inset, sheet 85)
2 575 000 FEET
2 595 000 FEET
240 000 FEET
BIG SWAMP
WACCAMAW RIVER
BULL CREEK
GEORGETOWN COUNTY
GEORGETOWN CO
PRINCE CREEK
Longwood Landing
Longwood Island
Collins Creek
707
1 Mile
5000 Feet
Scale 1:20000


92
N
(Joins sheet 90)
(Joins sheet 91)
ATLANTIC OCEAN
GARDEN CITY BEACH
GEORGETOWN COUNTY
(Joins sheet 73)
(Joins sheet 79)
1 Mile
5000 Feet
Scale - 1:20000
2 650 000 FEET
1 267 8000 FEET
1 282 000 FEET

HORRY COUNTY, SOUTH CAROLINA – SHEET NUMBER 91



From:

To: Jill Konieczko
NOAA Coastal Services Center
2234 South Hobson Ave.
Charleston, SC 29405-2413

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3 6668 00004 1550