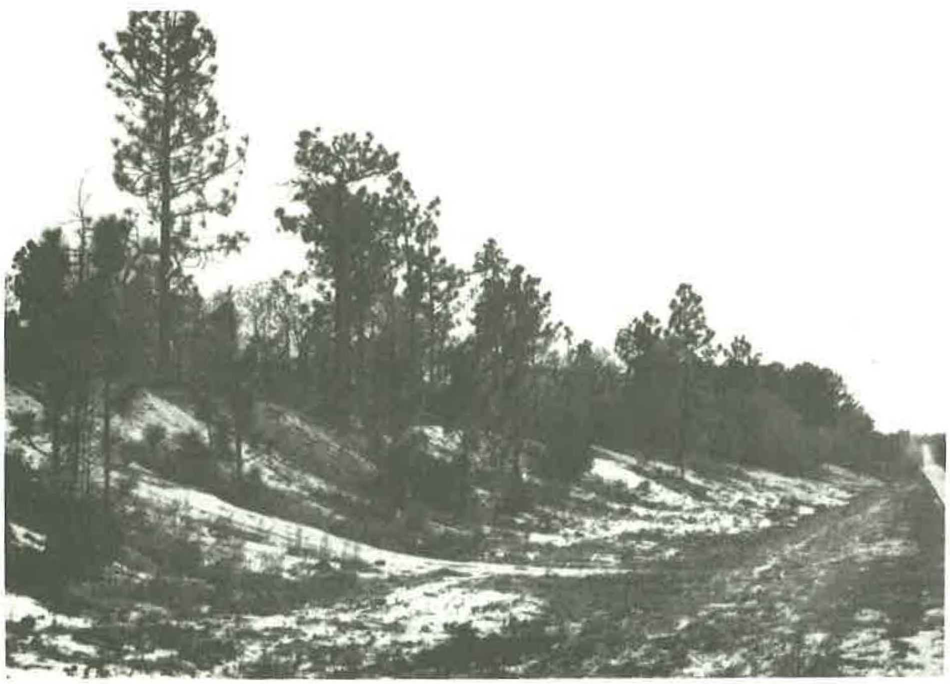
Construction Material Potential of the Middle Georgia Coastal Plain

An Evaluation

Jeane S. Brackman



DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION
GEORGIA GEOLOGIC SURVEY

BULLETIN 119

Cover Photo: A typical sand dune complex of the Middle Georgia area.

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Construction Material Potential of the Middle Georgia Coastal Plain

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ABSTRACT

Construction costs in the Georgia Coastal Plain are probably higher than they could be because most of the coarse construction aggregate used there (primarily crushed stone) is transported from the Piedmont Province. The purpose of this report is to provide an evaluation of the construction material of the middle third of the Coastal Plain, approximately 11,000 square miles.

The study area covers all of twenty-three counties (Atkinson, Ben Hill, Berrien, Bleckley, Clinch, Coffee, Dodge, Echols, Irwin, Jeff Davis, Johnson, Lanier, Laurens, Montgomery, Pulaski, Telfair, Treutlen, Twiggs, Ware, Washington, Wheeler, Wilcox, and Wilkinson); and covers parts of twelve counties: Baldwin, Hancock, and Jones are not entirely within the Coastal Plain; Cook, Crisp, Dooly, Houston, Lowndes, Peach, Tift, and Turner were partially covered in GGS Bulletin 106, [Friddell 1987]; Bibb County is in both of these catagories.

Sites within the study area were prioritized as to their potential for aggregate production based on the: 1) soil type present; 2) proximity to sand or gravel pits described in both published and unpublished literature; 3) geomorphic features indicative of aggregate deposits; and 4) proximity to active or recently inactive commercial mining operations.

Four counties (Baldwin, Echols, Hancock, and Pulaski) were found to have moderate to high potential for aggregate production.

ACKNOWLEDGEMENTS

The author would like to extend her gratitude to those who painstakingly reviewed this manuscript. These people include Brian Thames, Bruce O'Connor, and Mike Friddell (who also provided much needed advice from time to time) of the Geologic Survey; Bob Dickerson of the Georgia Department of Transportation; and Bob Carver of the University of Georgia. Thanks also to Mike Laney, Tony McCook and Scott Setser of the Geologic Survey for invaluable field assistance. Appreciation also goes to the cartographic and editorial staff of the Geologic Survey.

INTRODUCTION

The first of this three part study, Bulletin 106 (Friddell, 1987, see Figure 1), covered the western third of the Coastal Plain, the area west of Interstate 75. The second part, Bulletin 108 (Friddell and Brackman, 1990), evaluated the potential construction aggregate reserves in the eastern third of the Coastal Plain.

Aggregate, as defined by industry, is composed of unconsolidated rock particles. Fine aggregate ranges from 0.075 mm to 4.75 mm in size, and coarse aggregate ranges in size from 4.75 mm to 3.5 inches (8.89 mm). Uses for construction aggregate include concrete, mortar, plaster, brick, masonry sand and fill material. Mining of sand and gravel in this area of the State is done primarily by back-hoe and front-end loader.

PURPOSE AND SCOPE

Purpose

Within the Coastal Plain of Georgia, construction costs are higher than in other parts of the State because coarse aggregate must be transported great distances. Therefore, identification of adequate aggregate reserves located in the Coastal Plain, probably, could lower construction costs.

The purpose of this study is to evaluate the aggregate production potential of the central third of the Coastal Plain by studying the resources available, and locating favorable areas for aggregate production. Because it is not always possible to anticipate the geographic areas in which the demand for aggregate may occur, demographic divisions were not considered, thus, providing a better indication of the true availability of both fine and coarse aggregate deposits.

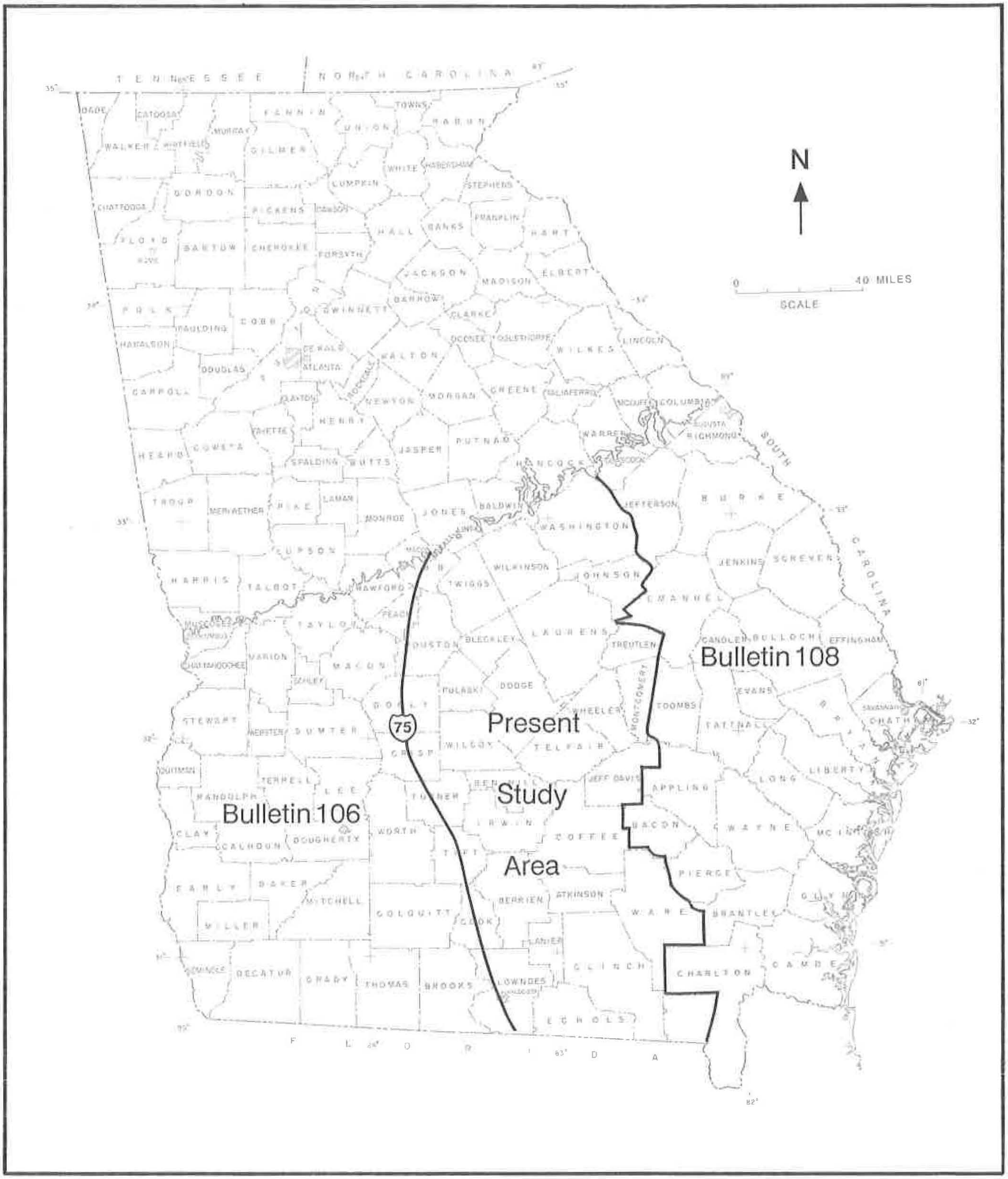


Figure 1. Location map of the study area.

Scope

The study area is that part of the Coastal Plain Province of Georgia that lies east of Interstate 75, and west of a line drawn north to south along the eastern borders of Washington, Johnson, Treutlen, Montgomery, Jeff Davis, Coffee, and Ware counties. This area encompasses approximately 11,000 square miles and includes the entirety of twenty-three counties, with partial coverage of twelve others.

PREVIOUS WORK

The major previous work concerning sand and gravel exploration and evaluation in Georgia is that of Teas (1921). Teas performed a thorough survey of sand and gravel resources of the entire State.

The Department of Natural Resources, Environmental Protection Division of Georgia maintains a record of surface mining and land reclamation activities which is updated yearly. This listing includes information on surface mining activities permitted since January 1, 1969. The information includes the product mined, operator, location of operation, acres permitted, acres reclaimed, and the status of the operation (whether active or inactive).

Steele and O'Connor (1987) identified the mining operations in Georgia. This publication lists the mineral commodities by county, producers' names, and the plant locations.

An evaluation of the construction material potential of the eastern and western thirds of the Coastal Plain have been evaluated by Friddell (1987) and Friddell and Brackman (1990), respectively.

PHYSIOGRAPHY

The study area lies within the Coastal Plain Province of Georgia. Six physiographic districts are present in the study area; they are the Fall Line Hills, Vidalia Upland, Bacon Terraces, Okefenokee Basin, Fort Valley Plateau, and Tifton Upland Districts (Figure 2). Clark and Zisa (1976) described these districts as follows:

"Fall Line Hills District - The Fall Line is the northern boundary of this district.... Geologically, it is the contact between the Cretaceous and younger sediments of the Coastal Plain and the older, crystalline rocks of the Piedmont. Several stream characteristics change as they flow south through this area: rapids and shoals are common near the geologic contact, floodplains are considerably wider on the younger sediments and the frequency of stream meanders increases....The southern boundary then closely follows the northernmost occurrence of the undifferentiated Neogene geologic unit which underlies the Vidalia Upland.

The Fall Line Hills District is highly dissected with little level land except the marshy floodplains and their better drained, narrow stream terraces. Stream valleys lie 50 to 250 feet below the adjacent ridge tops... Relief gradually diminishes to the south and east. Maximum elevations are approximately 760 feet between Columbus and Macon and gradually diminish to a minimum elevation of 150 feet south of Augusta.

"Fort Valley Plateau District - [The Fort Valley Plateau District]... is characterized by flat-topped interfluves with narrow, 50-150 feet deep, steep-walled valleys. This area is distinct from the Fall Line Hills in that the broad, flat-topped interfluves are the dominant feature, there are fewer streams, and there is less local relief. The area is less dissected than the Fall Line Hills because it is underlain by the more clayey units of undifferentiated Eocene, Paleocene and possible Cretaceous age sediments. Elevations range from 550 feet in the north to 250 feet in the southeast, indicating a southeast regional dip.

"Tifton Upland District - A well developed, extended, dendritic drainage pattern is formed on the undifferentiated Neogene sediments in the Tifton Upland District. Characteristically, the interfluves are narrow and rounded, rising 50 to 200 feet above the narrow valley floors. Elevations range from 480 feet in the north to 150 feet in the southeast, indicating the regional slope."

"Vidalia Upland District - The Vidalia Upland District is a moderately dissected area with a well developed dendritic stream pattern on gravelly, clayey sands. Floodplains are narrow except along the principal rivers which have a wide expanse of swamp bordering both sides of the channel. Relief varies from 100 to 150 feet. Elevations in the district range from 500 feet in the northwest to 100 feet in the southeast indicating the regional dip. The northern and northwestern boundary approximates the northernmost occurrence of the undifferentiated Neogene geologic unit. The southwestern and southern boundary is the base of the Pelham Escarpment and the southern drainage divide of the Altamaha River. The southeastern boundary follows the Orangeburg Escarpment at approximately the 150 foot eleva-

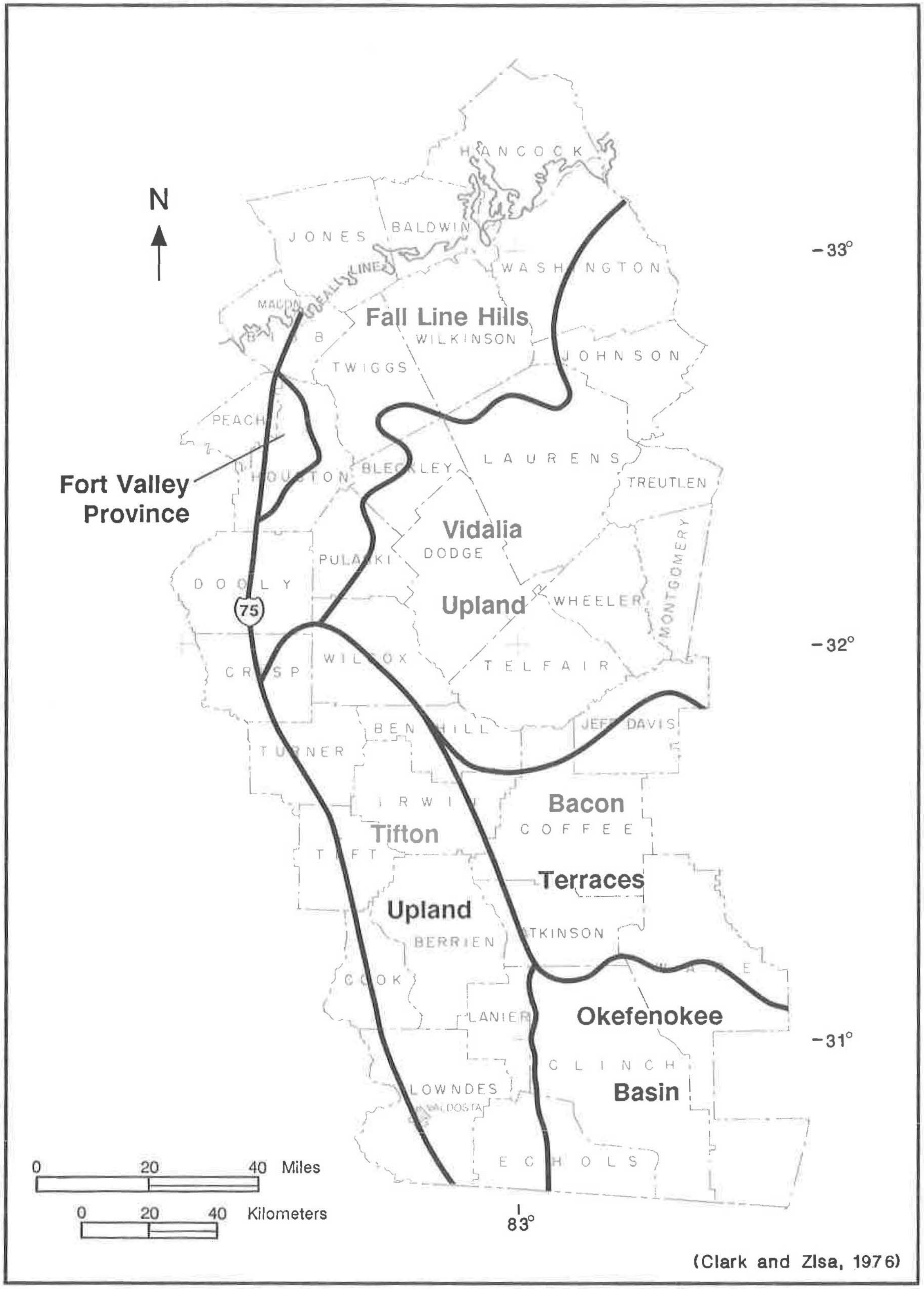


Figure 2. Physiographic map of the study area.

tion. The escarpment rises 50-70 feet above the Barrier Island Sequence District.

"Bacon Terraces District - Several moderately dissected terraces, generally parallel to the present coastline, are detectable on topographic maps of the Bacon Terraces District. However, they are very difficult to observe on the ground because the east facing scarps are very subtle. The terrace levels occur at elevations of 330-310 feet, 295-275 feet, 265-255 feet, 240 feet, 230 feet, 215-190 feet, and 180-160 feet. This district, on the north, west, and south, corresponds to the Satilla River drainage basin with its boundaries on the basin divide. The eastern boundary is the western base of Trail Ridge at approximately the 150 foot elevation. The southeast-trending, very extended, dendritic drainage pattern has formed on Upper Tertiary sediments.

"Okefenokee Basin District - Low relief, decreasing to the southeast, and numerous swamps are characteristic of the Okefenokee Basin District. Relief varies from approximately 50 feet to less than 5 feet. Elevations in the district range from 240 feet in the northwest on Pliocene-Pleistocene deposits to 75 feet in the southeast on Pleistocene deposits... At the extreme southern end of the district the St. Marys River turns east and flows through a gap in Trail Ridge. The northern and western boundaries of the district coincide with the northern and western boundaries of the Suwannee River. The eastern boundary is the western base of Trail Ridge.

GEOLOGY

The geology of the study area is illustrated in Figure 3. This section contains brief descriptions of units cropping out in the study area.

Quaternary alluvium

Quaternary alluvia consist of unconsolidated sediments, found in floodplains of rivers and streams, and eolian sand dunes along major rivers and streams of the study area.

Altamaha Formation

The Altamaha Formation is Miocene to Pliocene in age (Huddlestun, pers. comm.); and, according to Friddell (1987, p. 10), "consists of thin- to thick-bedded, locally cross-bedded, variably indurated, well-to poorly-sorted, feldspathic, argillaceous, locally gravelly, fine- to coarse-grained sand to clay."

Oligocene sediments

These Oligocene sediments are primarily composed of limestone and dolostone.

Barnwell Group

Sediments of the Barnwell Group are Late Eocene in age; and, according to Huddlestun and Hetrick (1985, p. 16-17), are predominately composed of very fine-to very coarse-grained quartz sand in thin to thick, horizontally-bedded layers.

Marshallville Formation

According to Hetrick (1991), the Marshallville Formation consists of fine- to medium-grained sand interlayered with clay. Generally, the Marshallville Formation crops out as channel deposits of fine-grained sand and clay. The Marshallville also occurs as thin to thick beds of cross-bedded, fine- to medium-grained sands. These sediments are Paleocene in age.

Oconee Group

Sediments of the Oconee Group are Upper Cretaceous to Tertiary in age and consist primarily of kaolin, kaolinitic sand, and mica, with minor amounts of heavy minerals present in medium-grained sand (Hetrick and Friddell, 1990).

Hawthorne Group

In the study area, the Hawthorne Group is represented by the Statenville, Cypresshead, and Miccosukee Formations (Huddlestun 1988, p. 92-96, p. 119-129, respectively).

Statenville Formation

The Statenville Formation, middle Miocene in age, consists of cross-bedded "argillaceous, dolomitic, phosphatic sand." It is predominately composed of fine- to coarse-grained well- to poorly-sorted quartz sand.

Cypresshead Formation

The Cypresshead Formation, late Pliocene in

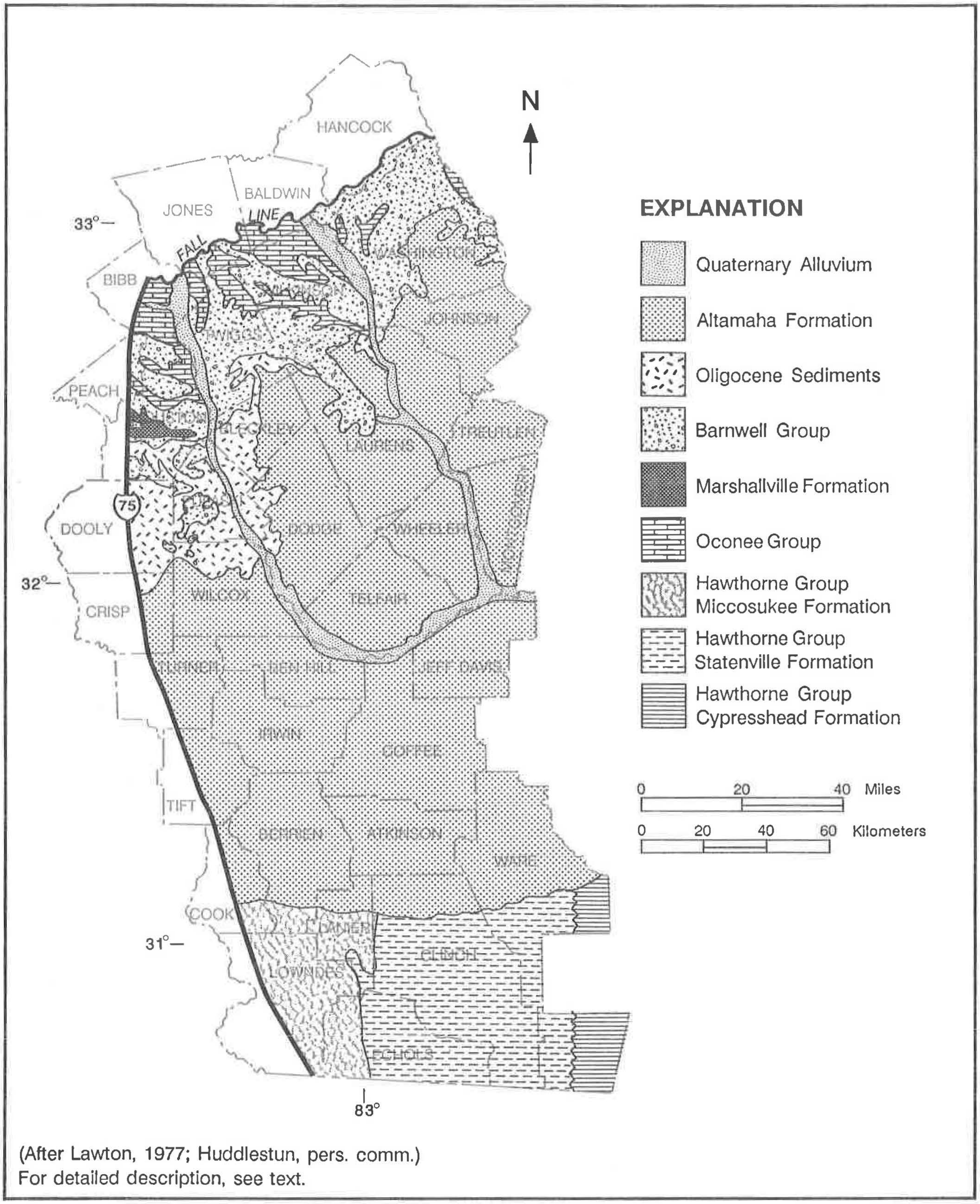


Figure 3. Geologic map of the study area.

age, consists primarily of quartz sand, including some "pebbles and gravel, heavy minerals, mica, trace fossils..."

Miccosukee Formation

The Miccosukee Formation, late Pliocene in age, is primarily composed of sand, with clay being predominant in certain areas. The Miccosukee is usually found in thin beds of fine-to medium-grained sand, and locally, is found occurring as scour and fill structures filled with coarse-grained sediments and gravel stringers.

PROCEDURES AND METHODS

Delineation of Areas with Potential for Aggregate Production

Areas were prioritized based on four factors: 1) soil type; 2) proximity to known sand or gravel localities; 3) proximity to known sand or gravel mining operations; and 4) geomorphic features present.

Soil Type

The soil associations used in targeting areas for potential aggregate production were selected from two types of county soil surveys: 1) detailed 1:20,000 scale, photographic based soil surveys published by the United States Department of Agriculture Soil Conservation Service in cooperation with the University of Georgia College of Agriculture; and, 2) generalized 1:63,360 scale maps on file at the Georgia Geologic Survey, produced by the Georgia Department of Natural Resources' Office of Planning and Research. The detailed, photographic base surveys were preferred; however, these were not available for all counties in the study area (Figure 4).

After reviewing the published grain size data of each county survey for the soil or soils which contained the coarsest sand and the least amount of fine material (<#200 mesh), the following soil associations were chosen from the detailed surveys: Alapaha, Fuquay, Kershaw, Lakeland, Mascotte, Paola, Rutlege, and Troup; and these from the generalized maps: #24 - Chipley, Kershaw, Lakeland; #39 - Fuquay, Lakeland; and #41 - Alapaha, Mascotte, Rutlege. Following the selection of soil types, their areal extent was plotted on 1:24,000 scale topographic maps.

Sand and Gravel Localities

The locations of gravel pits, sand pits, and prospects on file at the Georgia Geologic Survey, as well as localities discussed by Teas (1921), were plotted on 1:24,000 scale topographic maps. In some cases, Teas (1921) localities could not be accurately located on modern maps and were not included.

Sand or Gravel Producers

The Department of Natural Resources, Environmental Protection Division, Office of Surface Mining and Land Reclamation maintains a listing of active or recently inactive (since 1969) commercial aggregate mines in Georgia. These were checked against the listing in the Mining Directory of Georgia (Steele and O'Connor, 1987) published by the Georgia Geologic Survey. The locations were then plotted on the 1:24,000 scale topographic maps used in this study. Finally, a field survey was carried out to verify and update this information and to gather data on the mining operations.

Geomorphic Features

Each topographic map was visually inspected for geomorphic features such as point bars, river terraces and dune complexes that are generally associated with sand and gravel deposits. Point bars were identified by their general lack of vegetation, flat to undulating surface, and their orientation on the convex side of stream banks. Terraces (former valley floors) were identified by their generally flat surface and their proximity to present day streams. Dune fields were recognized as being hills present generally along the north and east sides of major streams. The areal extent of these features was outlined on the 1:24,000 scale topographic maps.

Assignment of Priorities

In order to assign a rank to different areas for aggregate potential, numerical values were assigned on the basis of the four ranking factors. A value of one (1) was assigned to a site where one of the variables existed; a value of two (2) was assigned where two factors overlap. In similar fashion, the overlap of three variables produce a value of three

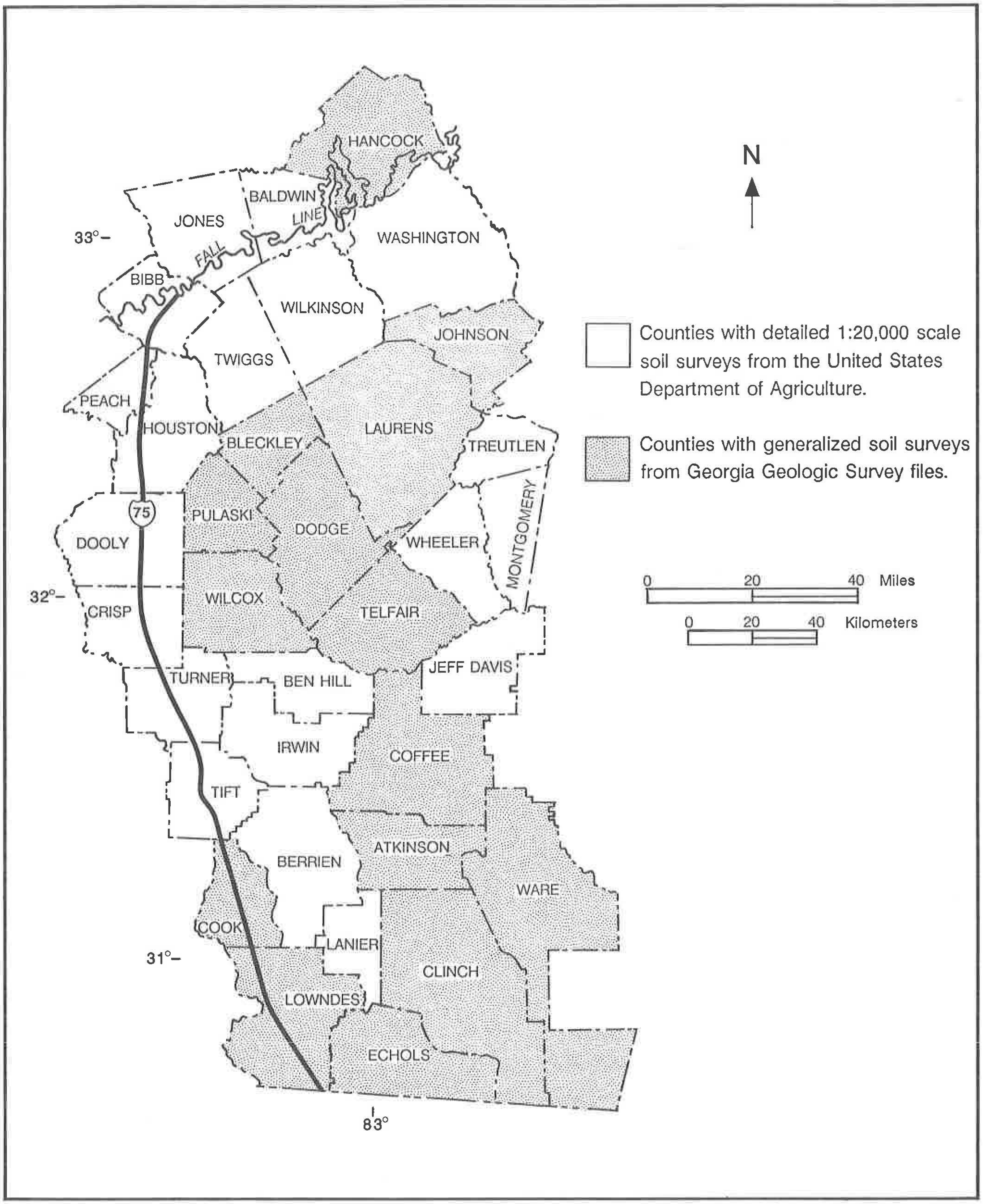


Figure 4. Index of soil maps.

(3), and four variables produce a value of four (4). The priority, or rank, of the areas sampled is listed in the tables under the individual county descriptions.

Plate I (see pocket), which shows the potential for aggregate production, is a compilation of the information plotted on the 1:24,000 scale topographic maps. Interpretation of what constitutes an area of potential for construction materials may have changed slightly from similar work done for the Southwestern Coastal Plain (Friddell, 1987) and for the Eastern Coastal Plain (Friddell and Brackman, 1990). These differences are due to improvements in the database. The plates which show this potential for these three studies may not match up exactly; however, consistency within each study is assured.

Sampling

Areas were sampled in order to field check the information compiled and to evaluate these areas for aggregate production. Accessible areas within each county with high (two or greater, when possible) assigned values for aggregate potential were examined; and, if the areas appeared to have potential aggregate value based on field observations, they were sampled. The sampling method, as described below, was designed to insure that the samples collected would show a true representation of the actual material present. Sediment samples were gathered by either auger or trenching. When possible, sampling was carried out by the use of a truck-mounted Gidding's soil probe equipped with a 4.5" spiral auger. Alternate methods of sampling included trenching, when a natural exposure was encountered, or hand augering when sampling a point bar in a river.

Auger

At most localities, sampling was carried out by the use of a truck-mounted Gidding's soil probe, equipped with a 4.5" spiral auger. The depth of the auger holes varied and depended upon the point at which either the auger could not penetrate the sediment or the sample could not be retrieved. Samples could not be retrieved from below the water table or, in some cases, from clay or clayey sand. At the completion of each four-foot auger run, one-third of the material retained on each flight was retrieved, examined, described, and placed in a labeled sample bag. If, at any sample locality, an appreciable change in grain-size was noticed, a new sample was begun and so designated. At localities where it was not possible to use the Gidding's Soil Probe, such as a sand bar accessible only by boat, a hand augered sample was taken.

Trench

Some localities, such as gullies or road cuts, offered a natural exposure that made augering unnecessary. At such localities trenching provided an adequate sample. The surface of the face to be sampled was cleaned to a depth of approximately one inch and a trench of approximately three to six inches wide was cut into the face. The sample was then collected, examined, described, and placed in a labeled sample bag. As was the case with augered samples, when an appreciable change in grain size was noted, a new sample was begun and so designated.

Sample Identification

Each sample of this report is identified by an abbreviation of the name of the county in which the sample was taken and is numbered consecutively within each county. In the event that more than one sample was taken from a single site, an alphabetical suffix was attached to each sample designation, starting with "a" for the stratigraphically highest sample. Thus, Dod-4a and Dod-4b represent two samples from the fourth sample taken in Dodge County; Dod-4a being the first sample taken at this site.

LABORATORY PROCEDURES

In the laboratory, the samples were placed in a drying oven at 230 degrees Fahrenheit for 24 hours. After drying, the samples containing very coarse material were sieved through a 3/8" sieve and were separated from the other samples. Laboratory procedures continued as described below.

Particles larger than 3/8"

For those samples which contained particles greater than 3/8," the entire sample was weighed and then sieved through 3/4," 1/2," and 3/8" sieves. Particles retained on these sieves were brushed free of clay and fine sand. This finer-grained material was returned to the bulk sample.

The nominal diameter of the particles retained on the 3/4" sieve was measured using calipers. Following this, the weight of each category was recorded. The remainder of the sample was analyzed in the same manner as the samples containing no particles greater than 3/8" (see following section). Following the sieving of the finer fractions, the weight percentage for each sample was calculated using the method of Folk (1974, p. 34-35).

Particles smaller than 3/8"

After drying, each sample was split, using a mechanical splitter,until a sample size of approximately 150 grams was obtained. This material was weighed and the weight recorded. The sample was then washed on a #200 mesh sieve until the water ran clear. The split was placed in the drying oven at 230° Fahrenheit and left overnight. After drying, the sample was reweighed and this washed weight recorded. The dry sample was then sieved mechanically for approximately 15 minutes, using a Ro-Tap machine and a nest of sieves consisting of #4, #8, #16, #30, #50, #100, and #200 mesh. After dry sieving, the weight retained on each sieve was recorded and the weight of the material retained in the pan (less than #200 mesh) was added to the calculated weight of the <#200 mesh fraction. The weight percent passing for each fraction was then calculated.

EVALUATION OF THE SIEVE DATA

The size distribution curves were analyzed according to ASTM Standard C-33, the standard for a fine aggregate (Table 1). In normal commercial processing of aggregate material, the fine-sized material is removed during washing and screening; thus, some material that is naturally substandard is upgraded to a product that meets commonly accepted standards such as those of the American Society of Testing Materials (ASTM). Some of the samples are mixtures of fine and coarse material, and, thus, do not meet ASTM standards for either fine or coarse aggregate. Because such mixtures can be processed to produce aggregate that meets ASTM Standard C-33, these samples are discussed in some detail in the text. Although the major purpose of this study is to analyze sediments of the Coastal Plain for aggregate potential, the majority of materials in their natural state fail to meet ASTM Standard C-33.

In an effort to classify these materials as to which may be best for upgrading to fine or coarse aggregate, Friddell (1987, p. 15) devised a value system. Values assigned to each sample are based on whether the sample meets one or more of Friddell's sieve analysis requirements (see Table 1). Each of Friddell's requirements has a value of one; so the rating of a particular sample can vary from 0 to 3. These rating values are listed in the table for each county.

COUNTY REPORTS

Atkinson County

Geology and Physiography

The surficial sediments of Atkinson County are derived from the Altamaha Formation. Atkinson County lies within the Bacon Terraces and the Tifton Upland Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 153) described medium-grained sand hills along the banks of Seventeenmile Creek (Fig.5, Ts-1) and the Satilla River (Fig.5, Ts-2). The upper portion of this sand is said to be suitable for mortar sand.

Present Study

The soil association used in targeting areas for sampling in Atkinson County was #24 (see p. 7) which is present as sand hills along the Alapaha and Satilla Rivers and Seventeenmile Creek. The geomorphic features used in targeting were the large sand hills present along the Alapaha and Satilla Rivers and Seventeenmile Creek. The preferred soil type, geomorphic features, and the favorable areas described by Teas overlap each other in Atkinson County. Three sites were sampled in Atkinson County (Fig.5, Table 2.).

Evaluation

Sample Atk-1 was taken from a deposit of sandy soil; sample Atk-2 was taken from the sand dunes along the Satilla River. Sample Atk-3 was taken from an area of sandy soil and sand hills along the Alapaha River. Although the site represented by sample Atk-3 contained some coarse material, none of the samples tested met ASTM Standard C-33.

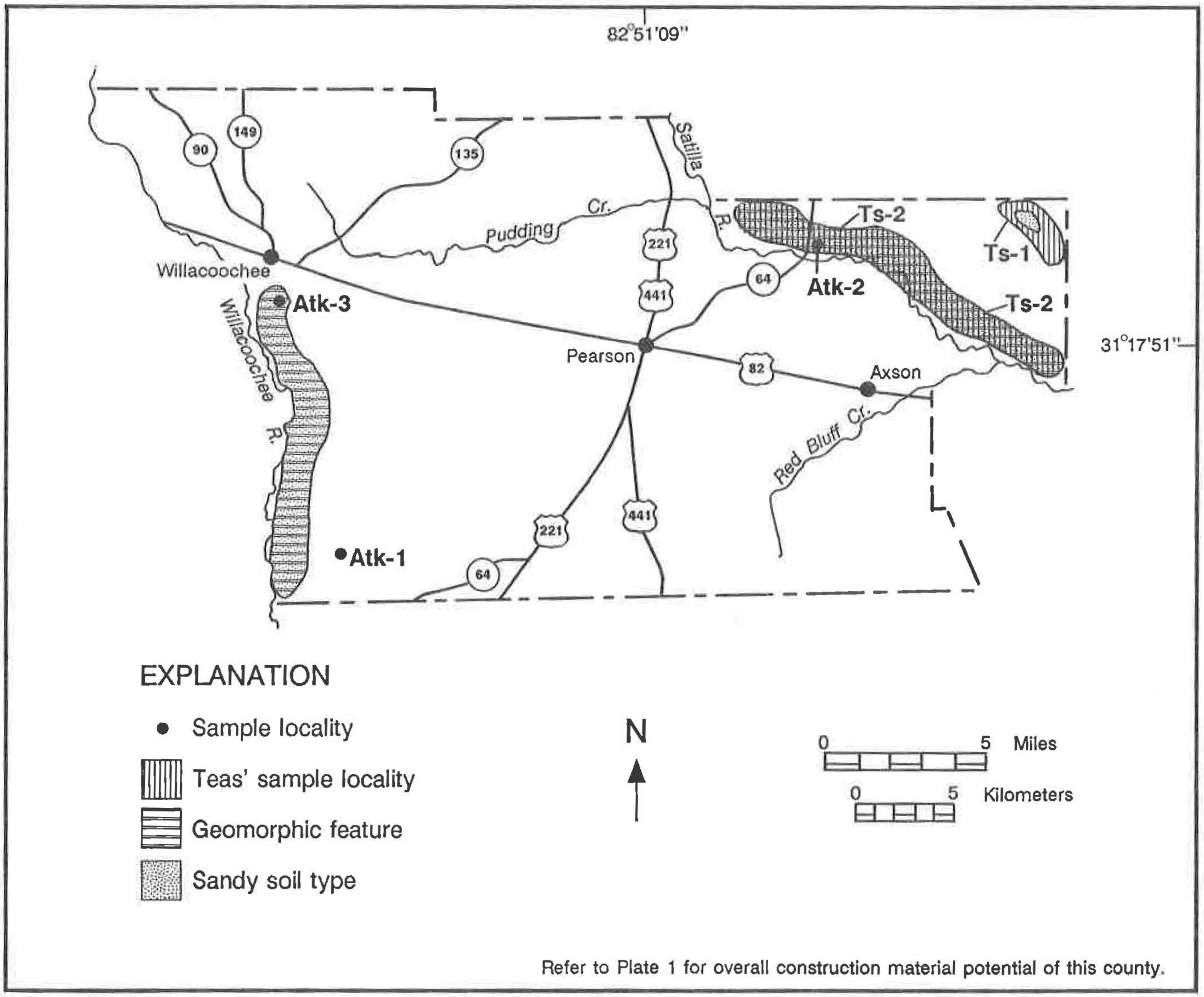


Figure 5. Atkinson County map.

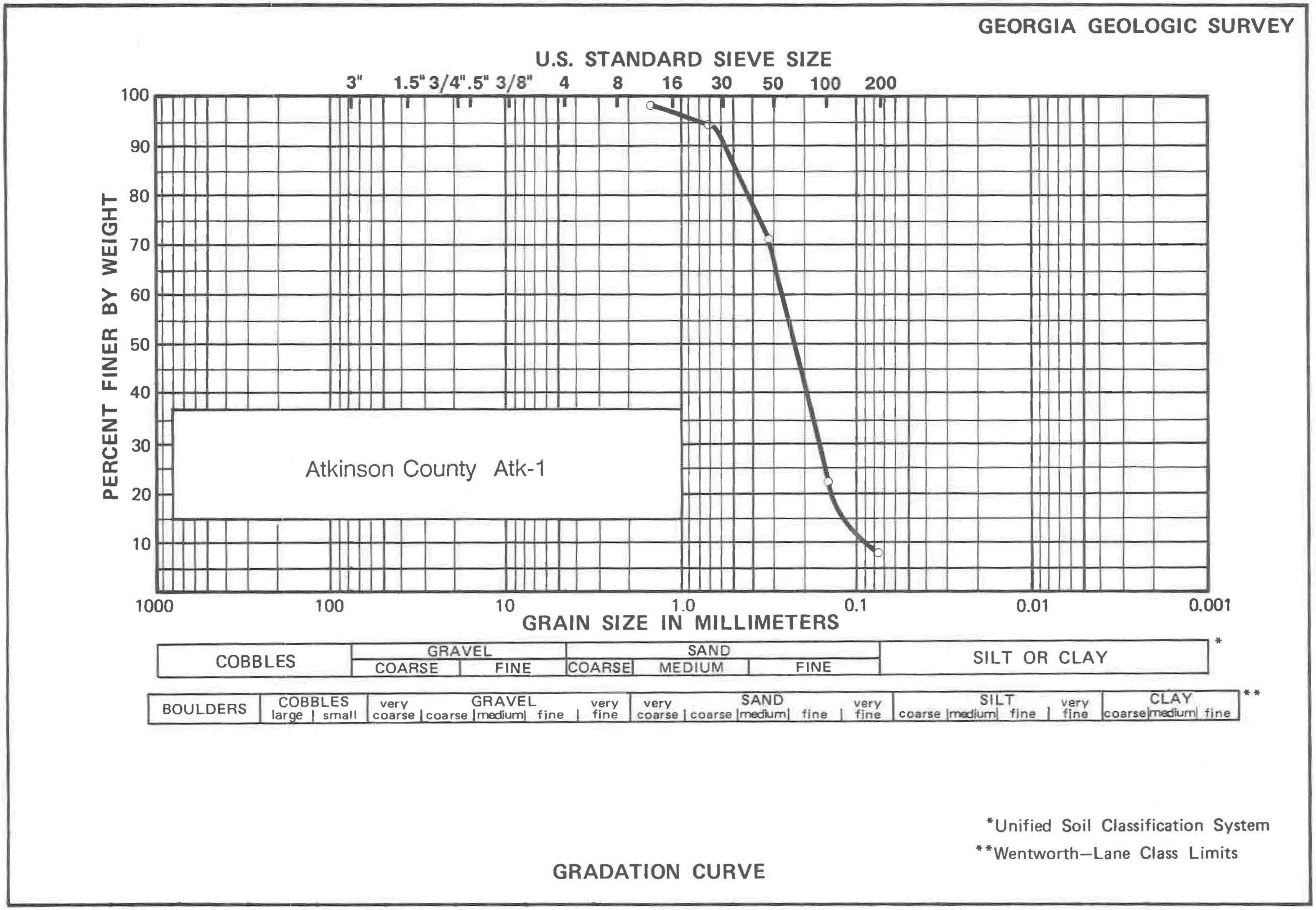


Figure 6. Size distribution curve of Sample Atk-1.

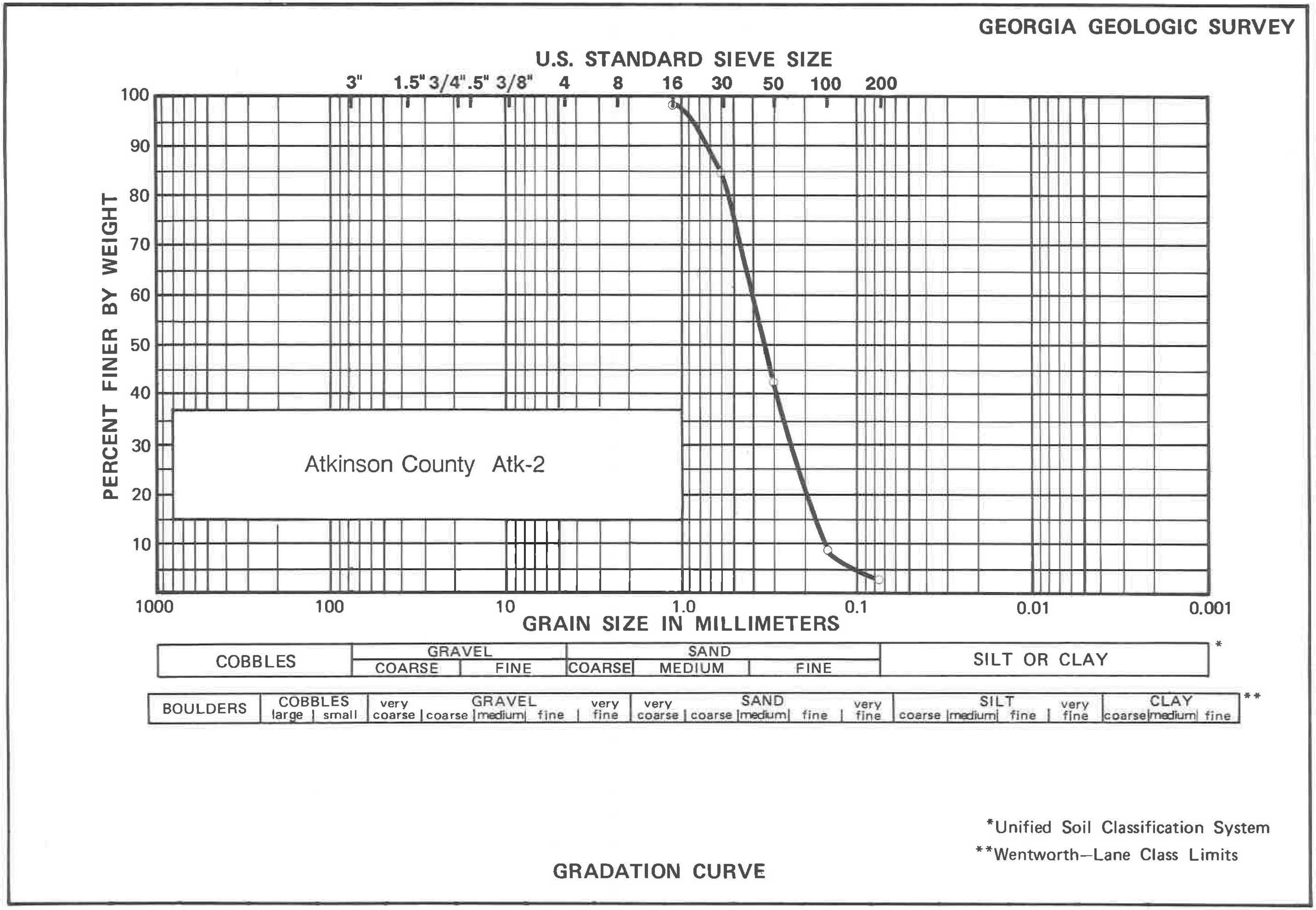


Figure 7. Size distribution curve of Sample Atk-2.

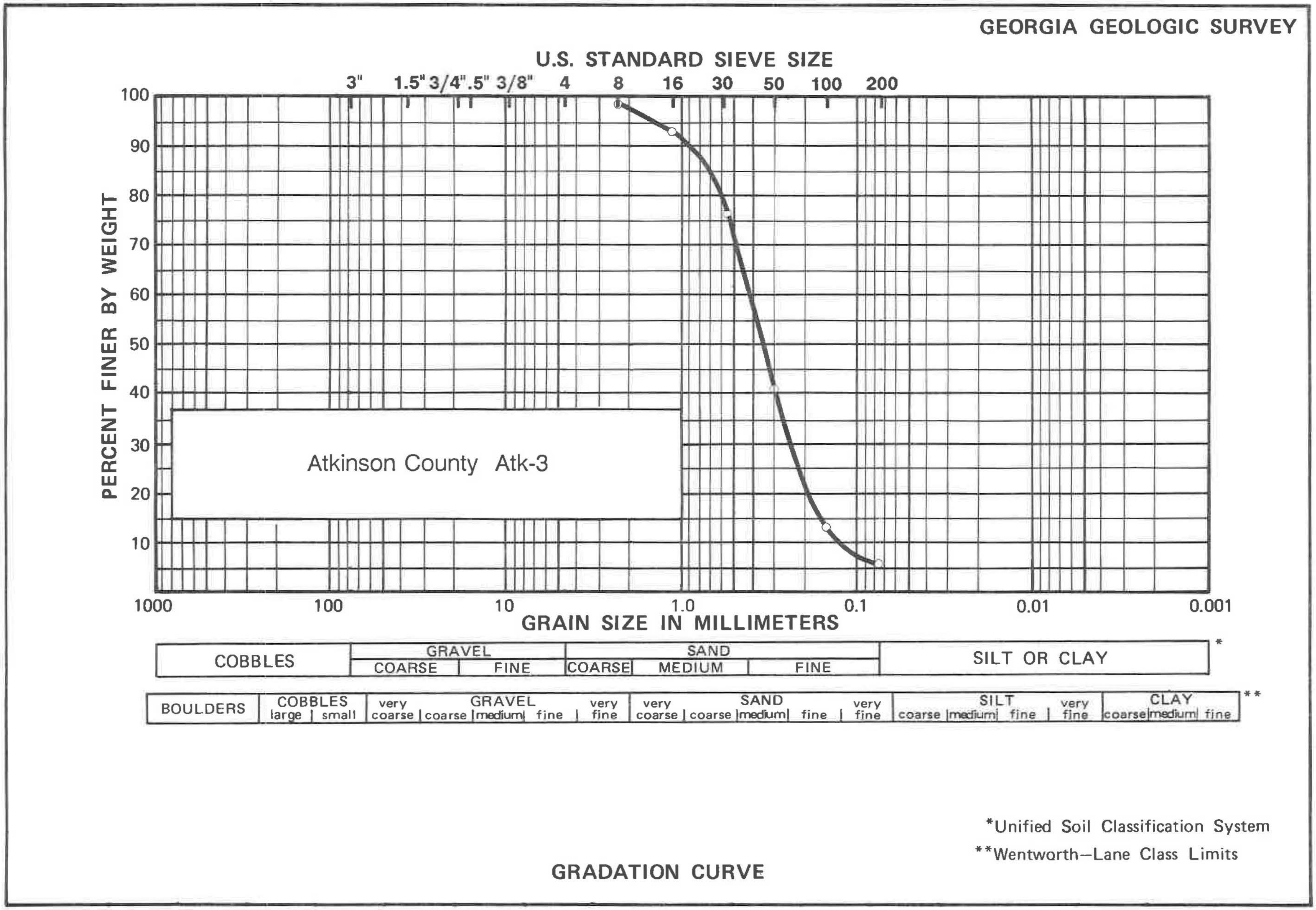


Figure 8. Size distribution curve of Sample Atk-3.

Table 1. Sieve Analysis System

Sieve Size (U.S. Standard)	Sieve Analysis ASTM Percentage Passing	Friddell's Percentage Passing
3/8"	100	
4	95 to 100	95 to 100
8	80 to 100	
16	50 to 85	
30	25 to 60	
50	10 to 30	0 to 40
100	2 to 10	
200	0 to 3	0 to 15

Table 2. Atkinson County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Atk-1	8'	auger	8'	2	no	1
Atk-2	9.5'	auger	9.5'	3	no	2
Atk-3	16'	auger	16'	2	no	2

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

Mining Activity

There are no active or recently inactive mining operations in Atkinson County.

Summary Evaluation

There are extensive sand dunes in Atkinson County; however, these do not contain enough coarse-grained material and are too well-sorted for use in construction aggregate. The construction material potential for Atkinson County is considered to be low.

Baldwin County

Geology and Physiography

The surficial sediments in Baldwin County are derived from the crystalline rocks of the Piedmont Province, the Oconee Group, and Quaternary alluvium. Most of Baldwin County lies outside the study area within the Piedmont Province, but the southern portion of the county lies within the Fall Line Hills District of the Coastal Plain Province.

Previous Study

Teas (1921) reported no commercially suitable sand present in the Coastal Plain of Baldwin County.

Present Study

The soil series used in targeting sites in Baldwin County was Lakeland. This soil type is present sporadically throughout the county as terrace deposits and sand dunes. The geomorphic features targeted are the sand hills on the eastern side of the Oconee River south of Milledgeville.

Three sites were sampled in Baldwin County (Fig.9; Table 3).

Evaluation

Sample Bal-1 was taken along the periphery of an abandoned sand pit (Fig.9). Sample Bal-2 was taken at the site of a reported occurrence of sandy soil. These samples were analyzed and proved to be too fine-grained for use as construction aggregate, and do not meet ASTM Standard C-33. However, sample Bal-3 does meet these standards. Sample Bal-3 is from a possible terrace deposit of the Oconee River consisting of a layer of coarse-grained sand. This terrace deposit occurs over an area of approximately 5 acres with a thickness of approximately 9 feet. This terrace deposit could yield reserves of 99,000 tons.

Mining Activity

There are several small, abandoned sand pits in Baldwin County for which no information is available. There is, however, one active aggregate operation. M & W Sand of Haddock, Georgia (Fig.9) operates a 46 acre pit in southwestern Baldwin County. M & W has an average yearly production of 50,000 to 100,000 tons, and a production capacity of 60 tons per hour. Mining is done by hydraulics, followed by screen washing. The approximate wastage is 30%. M & W Sand uses trucks to send concrete and masonry sand to various areas of Central Georgia.

Summary Evaluation

There are sites in Baldwin County that can provide construction material as evidenced by the site of sample Bal-3 and the site of M & W Sand. The construction material potential for Baldwin County is considered to be moderate to high.

Table 3. Baldwin County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Bal-1	6'	auger	30'	1	no	1
Bal-2	7.5'	auger	7.5'	2	no	1
Bal-3	9'	trench	9'	2	no[4]	1

[1] For trench samples, this figure is the vertical length of the trench.

[2] Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations; thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.

[3] Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

[4] Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

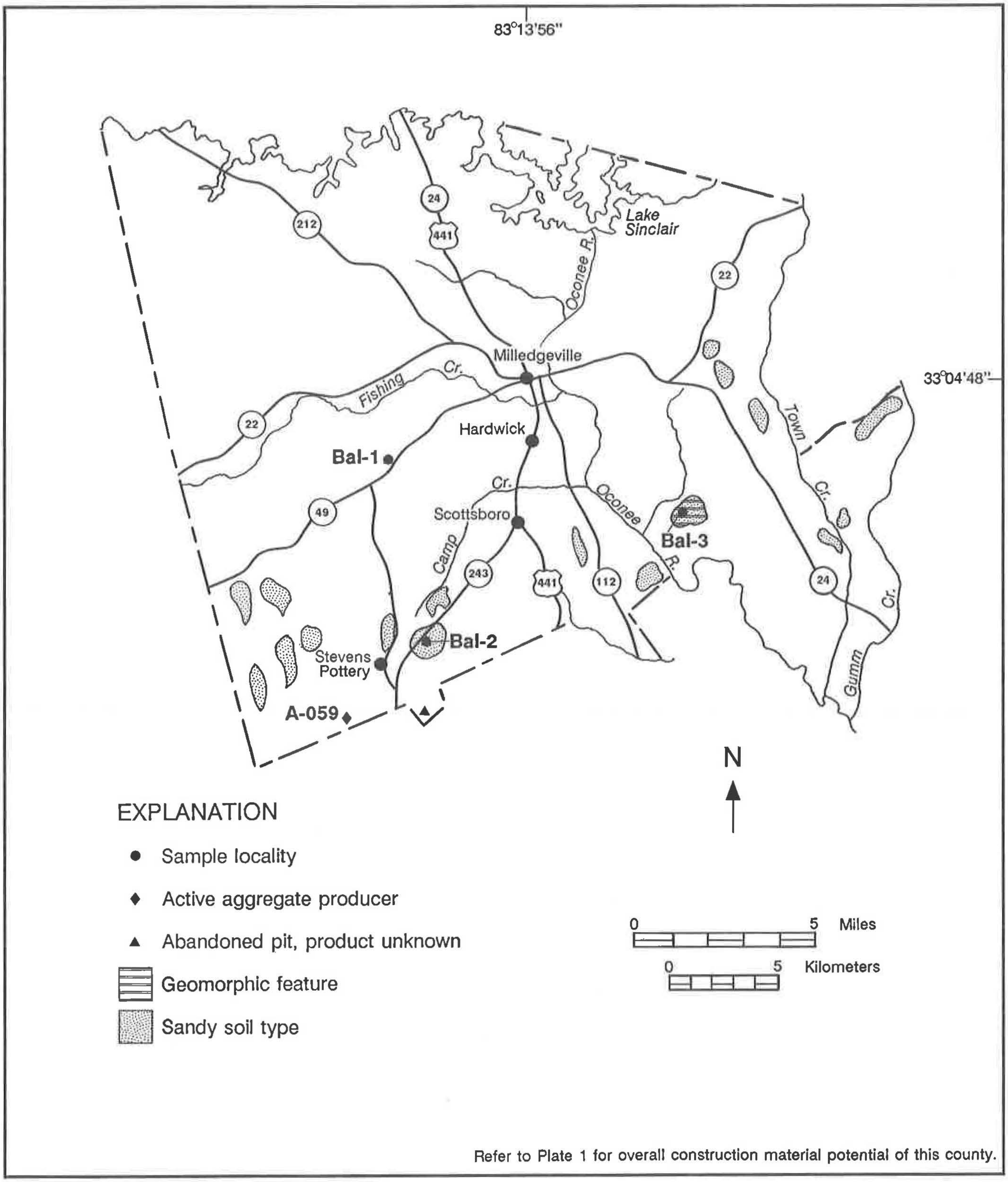


Figure 9. Baldwin County map.

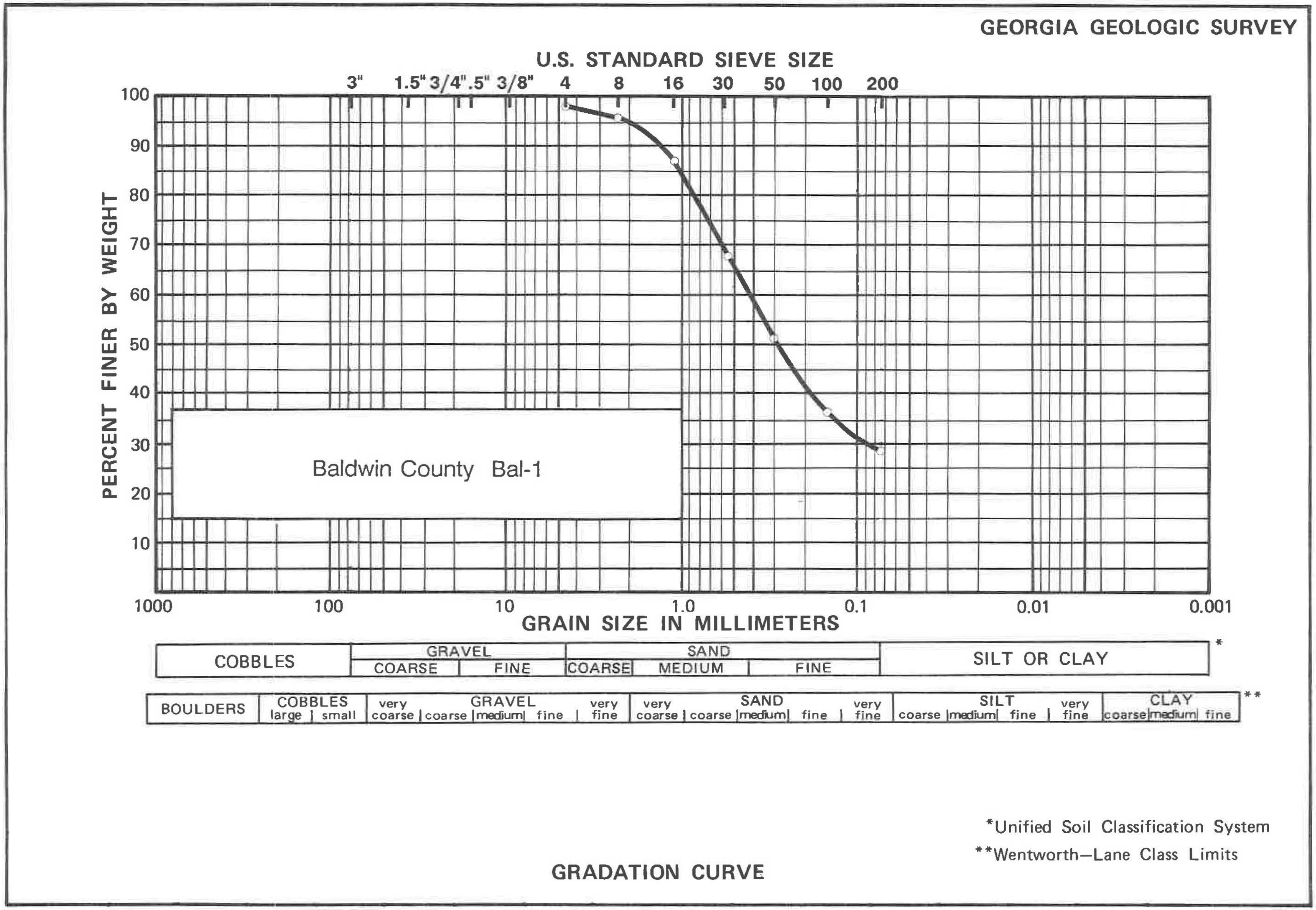


Figure 10. Size distribution curve of Sample Bal-1.

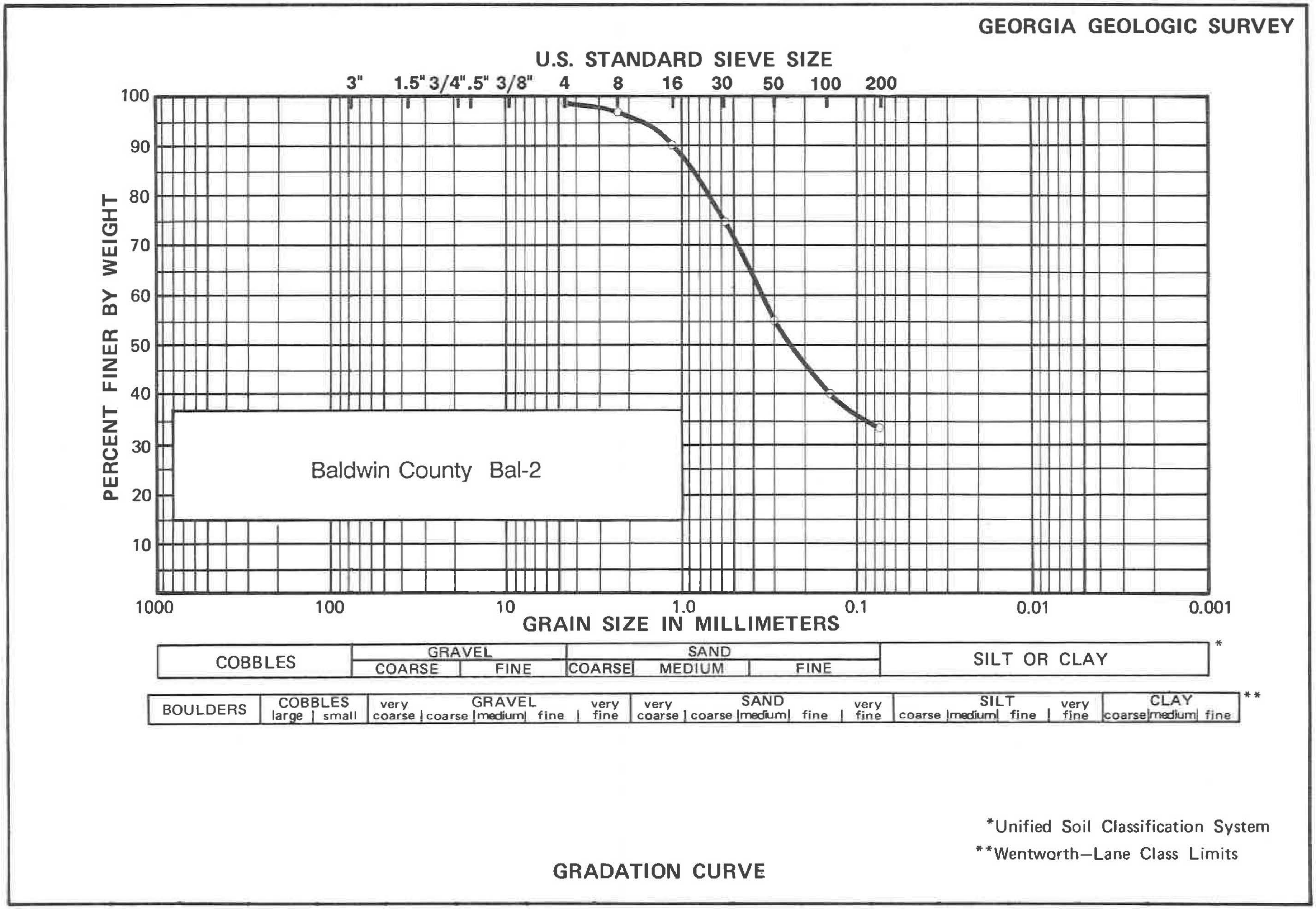


Figure 11. Size distribution curve of Sample Bal-2.

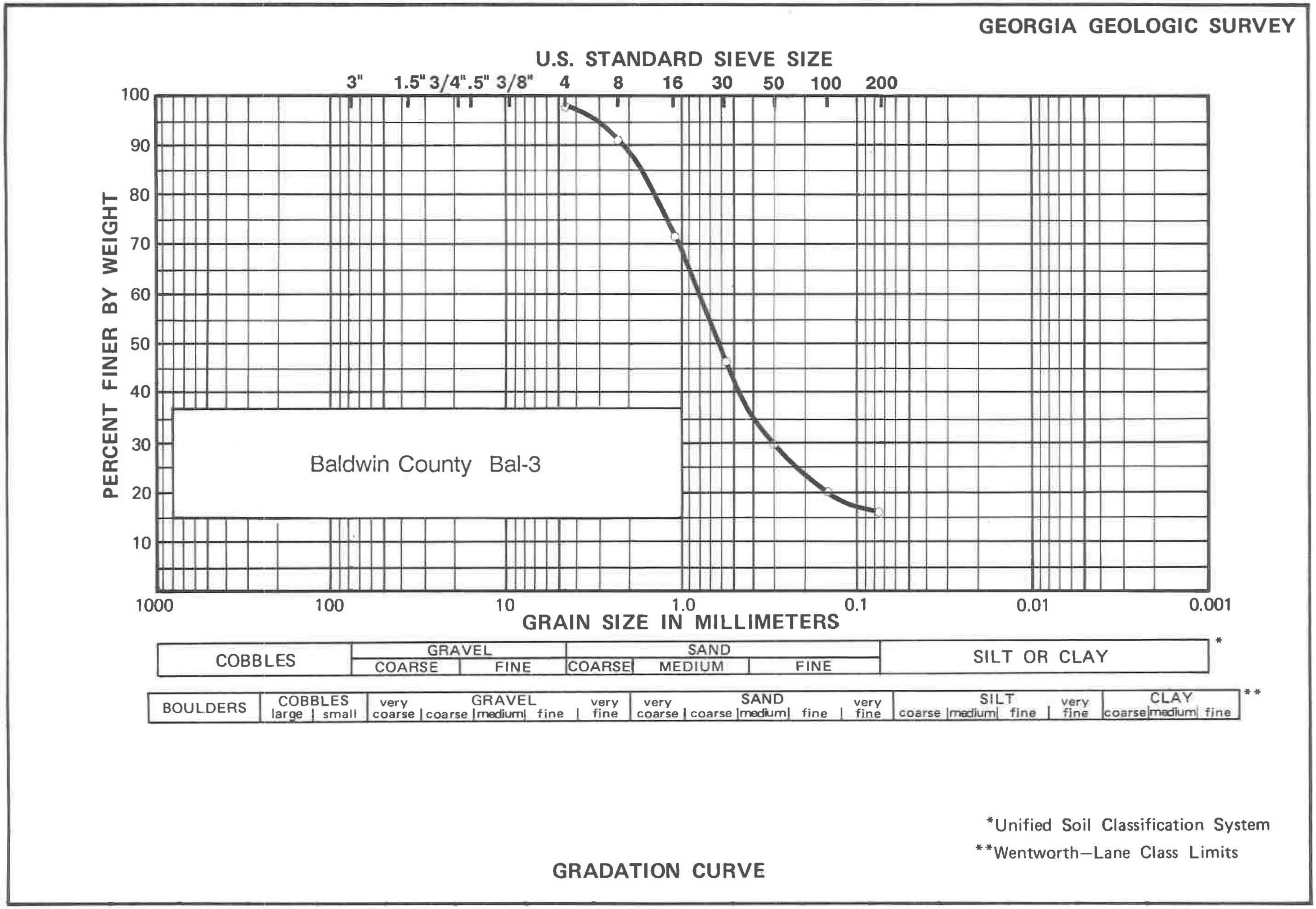


Figure 12. Size distribution curve of Sample Bal-3.

Ben Hill County

Geology and Physiography

The surficial sediments present in Ben Hill County are derived from the Altamaha Formation and Quaternary alluvium. Ben Hill County lies entirely within the Coastal Plain Province and is represented by the Vidalia Upland, Bacon Terraces, and Tifton Upland Districts.

Previous Study

Teas (1921, p. 156) reported an apparent terrace deposit consisting of coarse sand three miles northwest of Fitzgerald (Fig. 13, Ts-3). This sand had been mined previous to Teas' time, and at the time of Teas' report was being used locally for concrete sand. Teas (1921, p. 157) also noted the presence of a large sand belt that extends along the Alapaha River throughout western Ben Hill County, (Fig. 13, Ts-4); and he, particularly, noted the extensiveness of the belt near Rebecca (Fig. 13, Ts-5). Teas (1921, p. 157) also noted the presence of coarse sand in the Ocmulgee River bed.

Present Study

The soil associations used in targeting areas for sampling in Ben Hill County were Alapaha, Fuquay, Kershaw, and Troup. These are present throughout the county as sand hills and terrace deposits. The geomorphic features targeted are possible terraces and sand bars associated with the Ocmulgee River and sand hills along the Alapaha River. Four sites were sampled in Ben Hill County (Fig. 13, Table 4).

Evaluation

None of the samples analyzed met ASTM Standard C-33. Sample BeH-1 was taken from a favorable soil body, but proved to be too fine-grained for use as construction aggregate. Samples BeH-2, BeH-3a, BeH-3b and BeH-4 were taken from favorable sites noted by Teas (Fig. 13, Ts-4, Ts-5, and Ts-3, respectively). These are too well-sorted and too fine-grained for use as construction aggregate.

Mining Activity

There is no active or recently inactive mining activity in Ben Hill County.

Summary Evaluation

There were no sites found that could provide construction aggregate in Ben Hill County. The construction material potential for Ben Hill County is considered to be low.

Table 4. Ben Hill County Sample Data

Sample designation	Depth	Sample type[1]	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
BeH-1	12'	auger	12'	1	no	0
BeH-2	12'	auger	12'	3	no	1
BeH-3a	16'	trench	24'	3	no	2
BeH-3b	8'	auger	24'	3	no	1
BeH-4	12'	auger	8'	2	no	1

[1]For trench samples, this figure is the vertical length of the trench.

[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.

[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

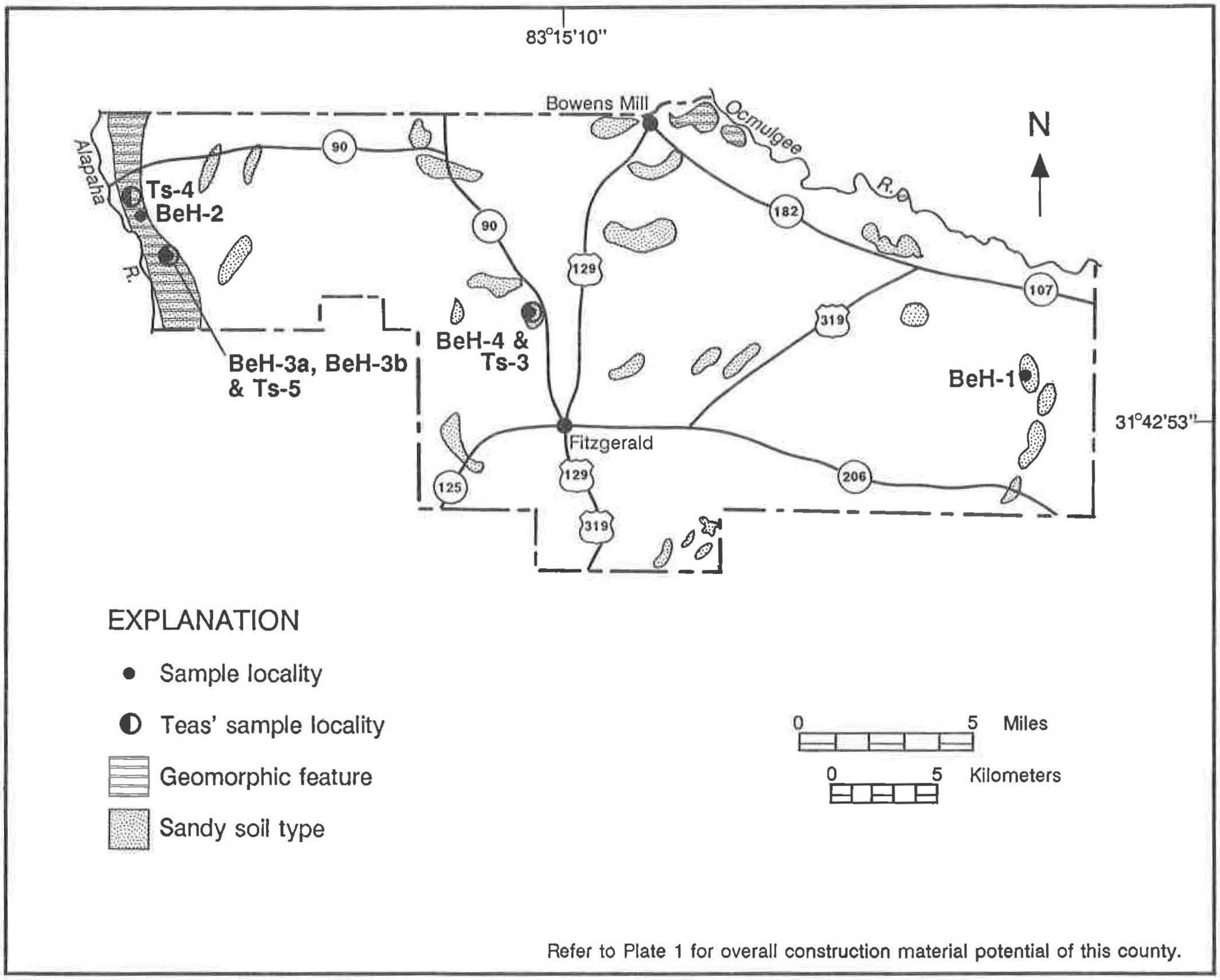


Figure 13. Ben Hill County map.

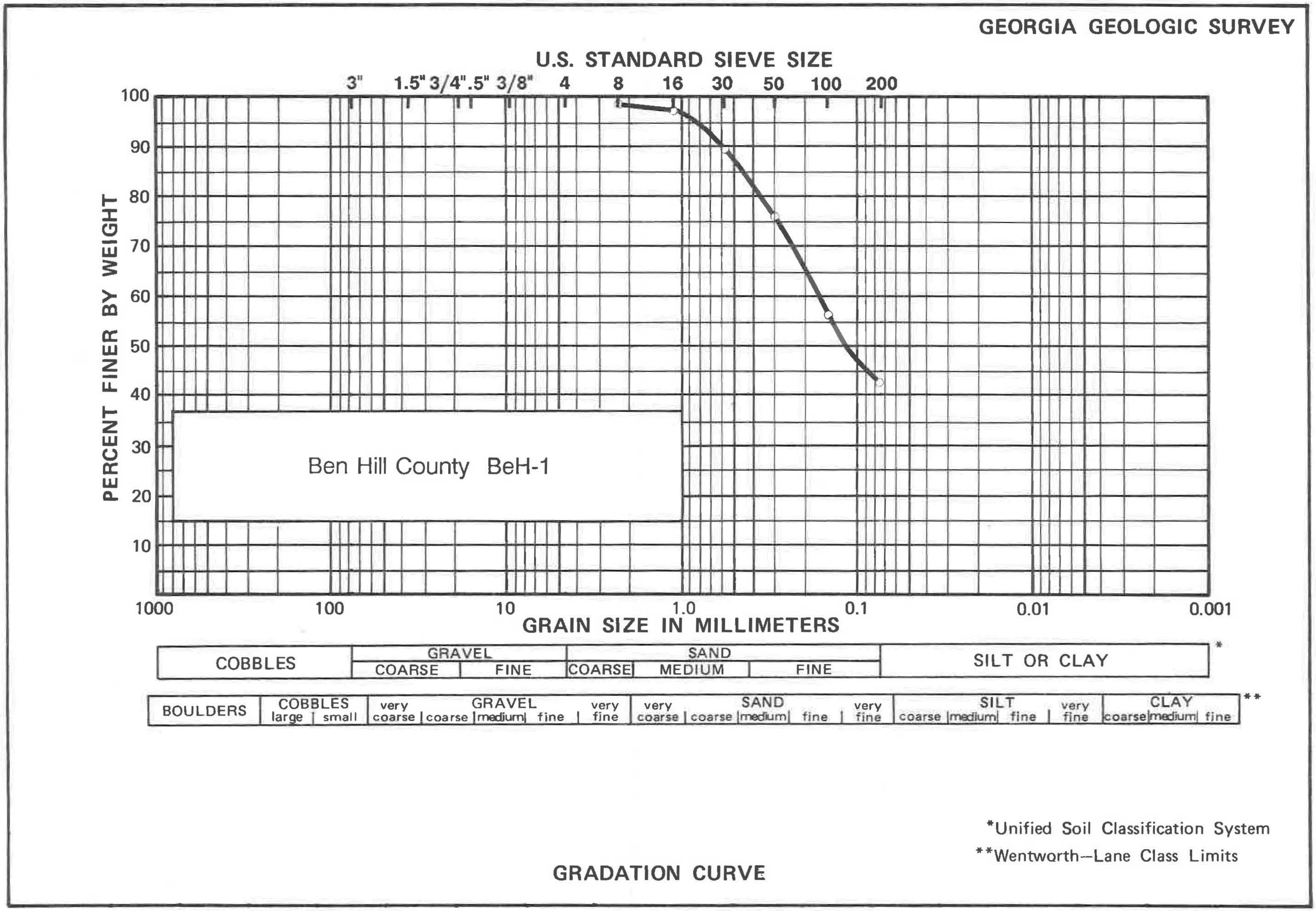


Figure 14. Size distribution curve of Sample BeH-1.

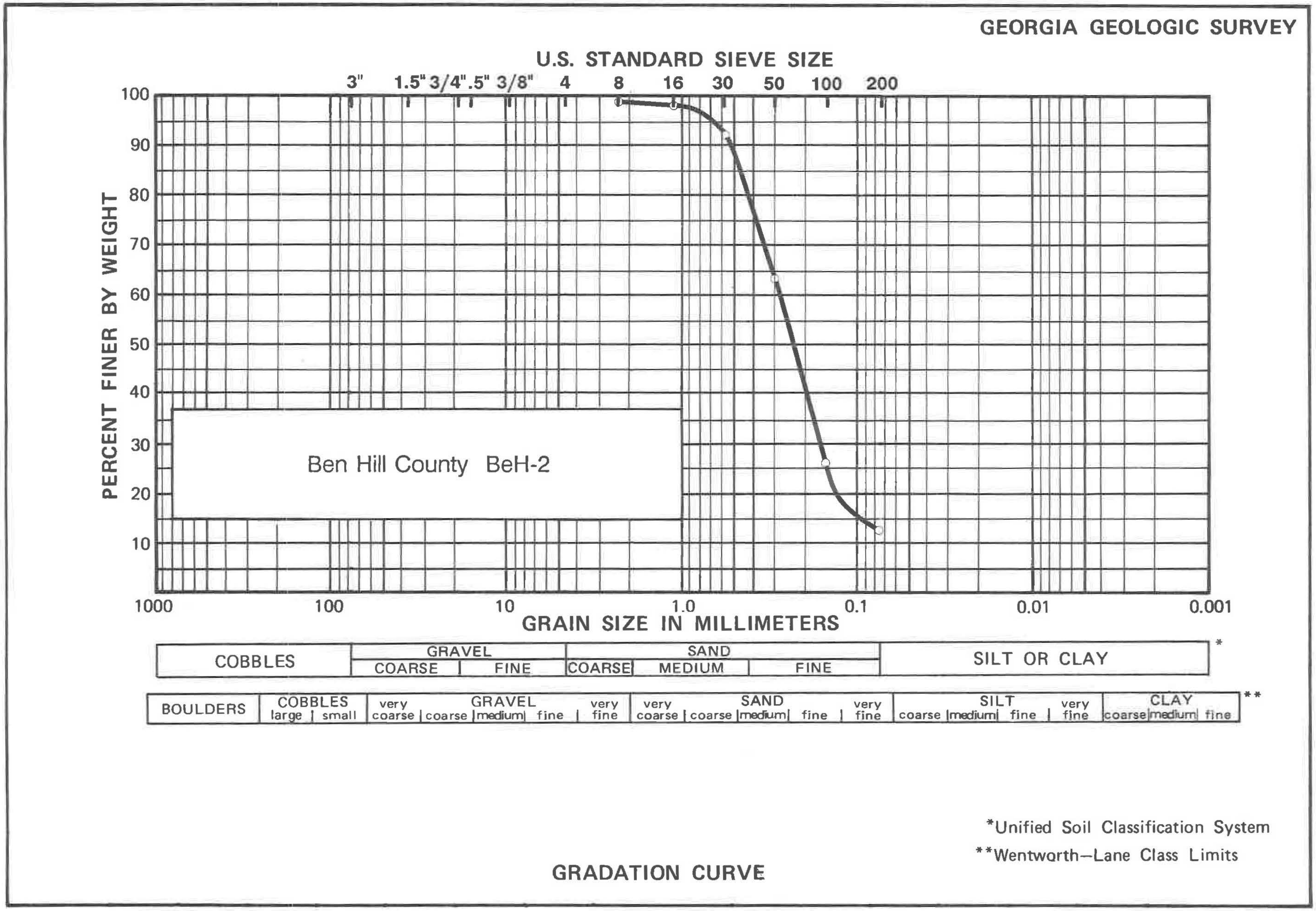


Figure 15. Size distribution curve of Sample BeH-2.

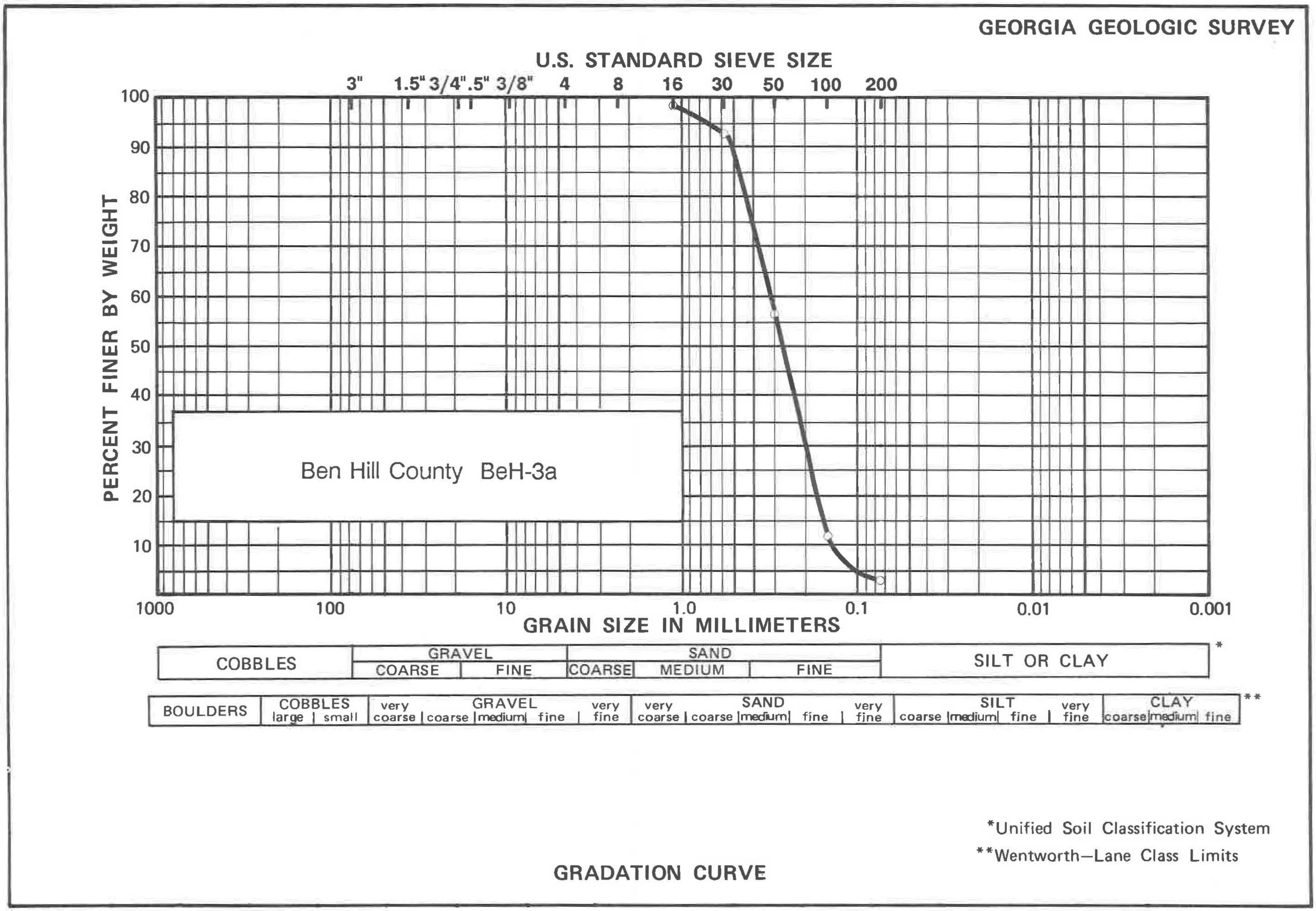


Figure 16. Size distribution curve of Sample BeH-3a.

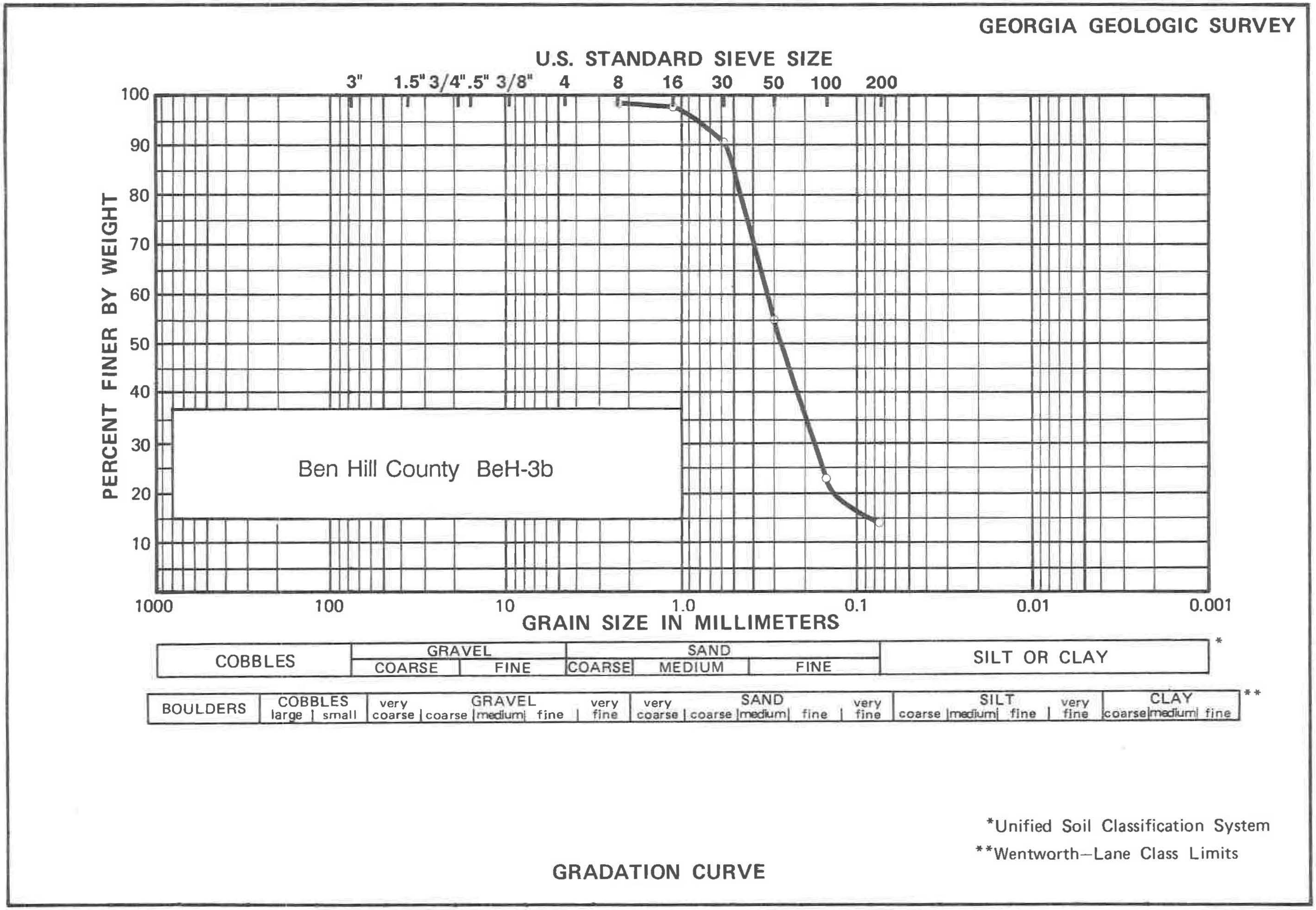


Figure 17. Size distribution curve of Sample BeH-3b.

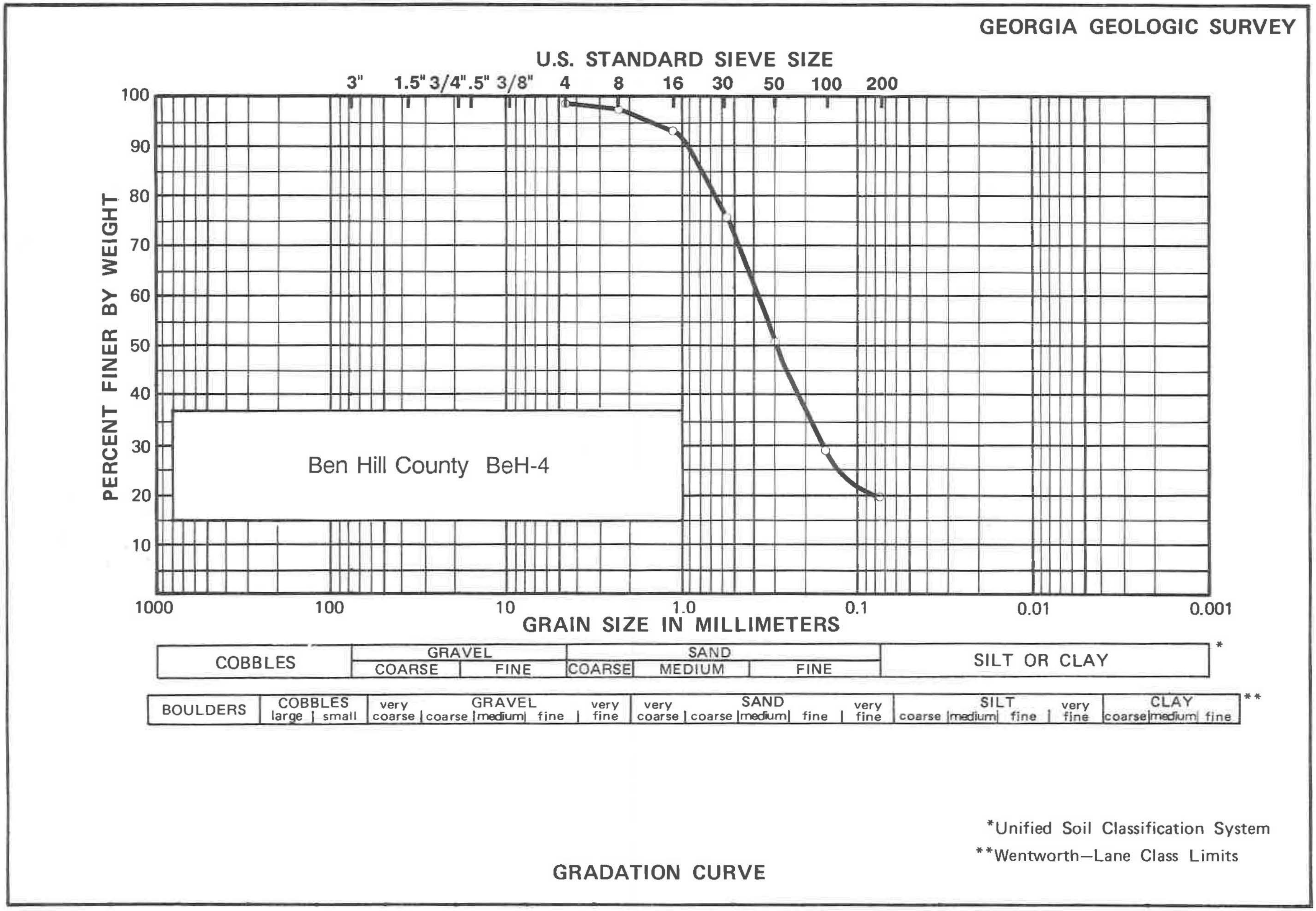


Figure 18. Size distribution curve of Sample BeH-4.

Berrien County

Geology and Physiography

The surficial sediments of Berrien County are derived from the Altamaha Formation and the Miccosukee Formation. Berrien County lies entirely within the Tifton Upland District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 157) noted the presence of fairly coarse-grained sand overlain by fine-grained sand near Nashville (Fig. 19, Ts-6). This sand was used locally at the time of Teas' report. East of the Alapaha River, within the sand belt, there is a particular occurrence of coarse sand noted by Teas (Fig. 19, Ts-7).

Present Study

The soil series used in targeting sites in Berrien County were Fuquay, Mascotte and Rutlege. These soil types are present as terraces and sand dunes along the Alapaha, New, and Willacoochee Rivers. The geomorphic features targeted were sand dunes along the Alapaha and New Rivers, and correspond to the preferred soil types. Five sites were sampled in Berrien County (Fig. 19, Table 5).

Evaluation

Ber-1 was taken from a sand dune along the Alapaha River. Ber-2 and Ber-4 were taken from a preferred soil type. Sample Ber-3 was taken from a site of the preferred soil type, and near a locality noted by Teas (1921). Sample Ber-5 was taken from a preferred soil type, and a possible terrace deposit. None of the samples analyzed met ASTM Standard C-33.

Mining Activity

There are no active or recently inactive mining operations in Berrien County.

Summary Evaluation

All the sites represented by samples in Berrien County apparently contain sand that is too fine-grained for use as construction aggregate; therefore, the construction material potential for Berrien County is considered to be low.

Table 5. Berrien County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Ber-1	12'	auger	12'	2	no	0
Ber-2	8'	auger	8'	2	no	0
Ber-3	6.5'	auger	6.5'	2	no	0
Ber-4	8'	auger	4'	1	no	0
Ber-5	8'	auger	7'	2		

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

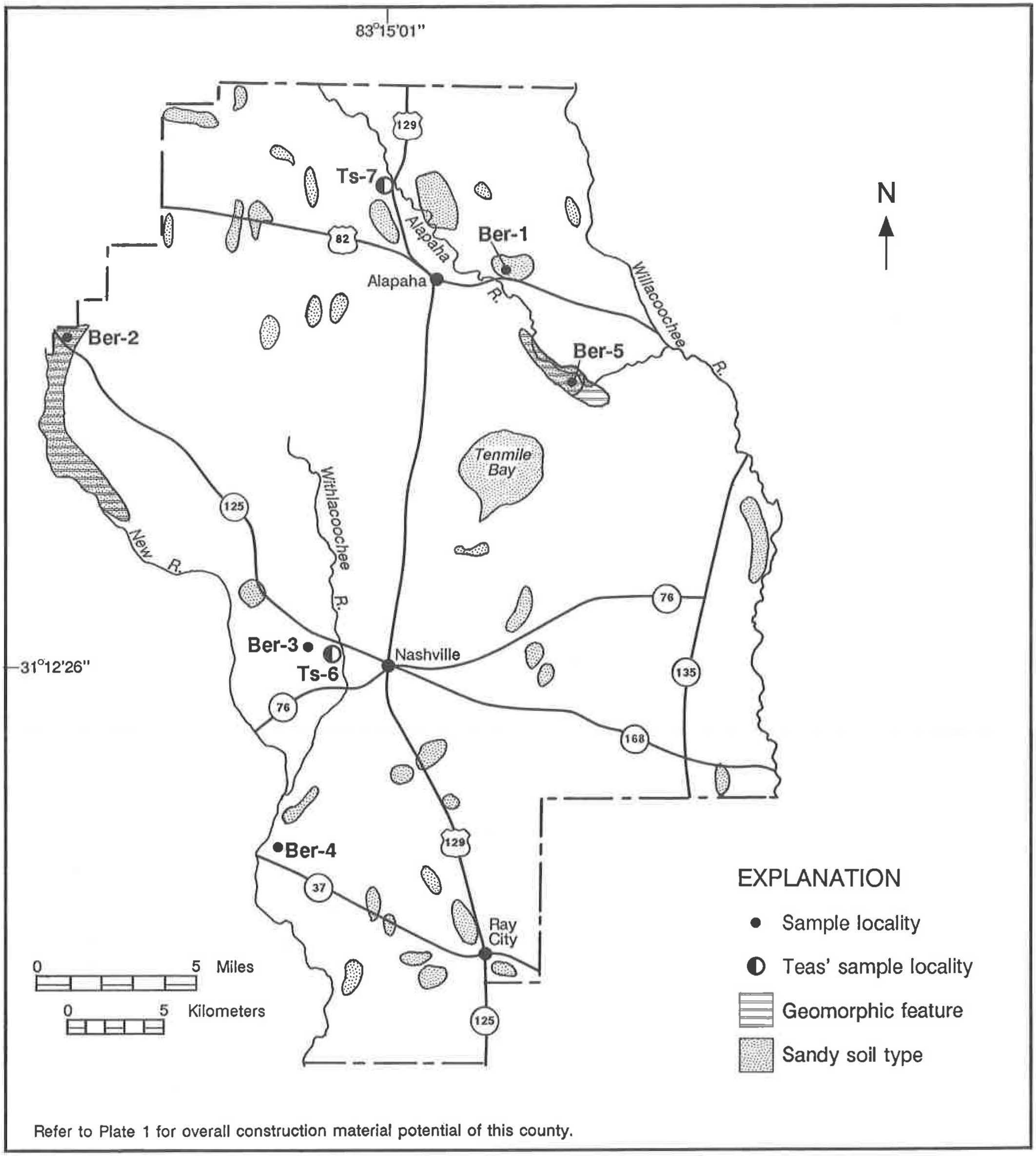


Figure 19. Berrien County map.

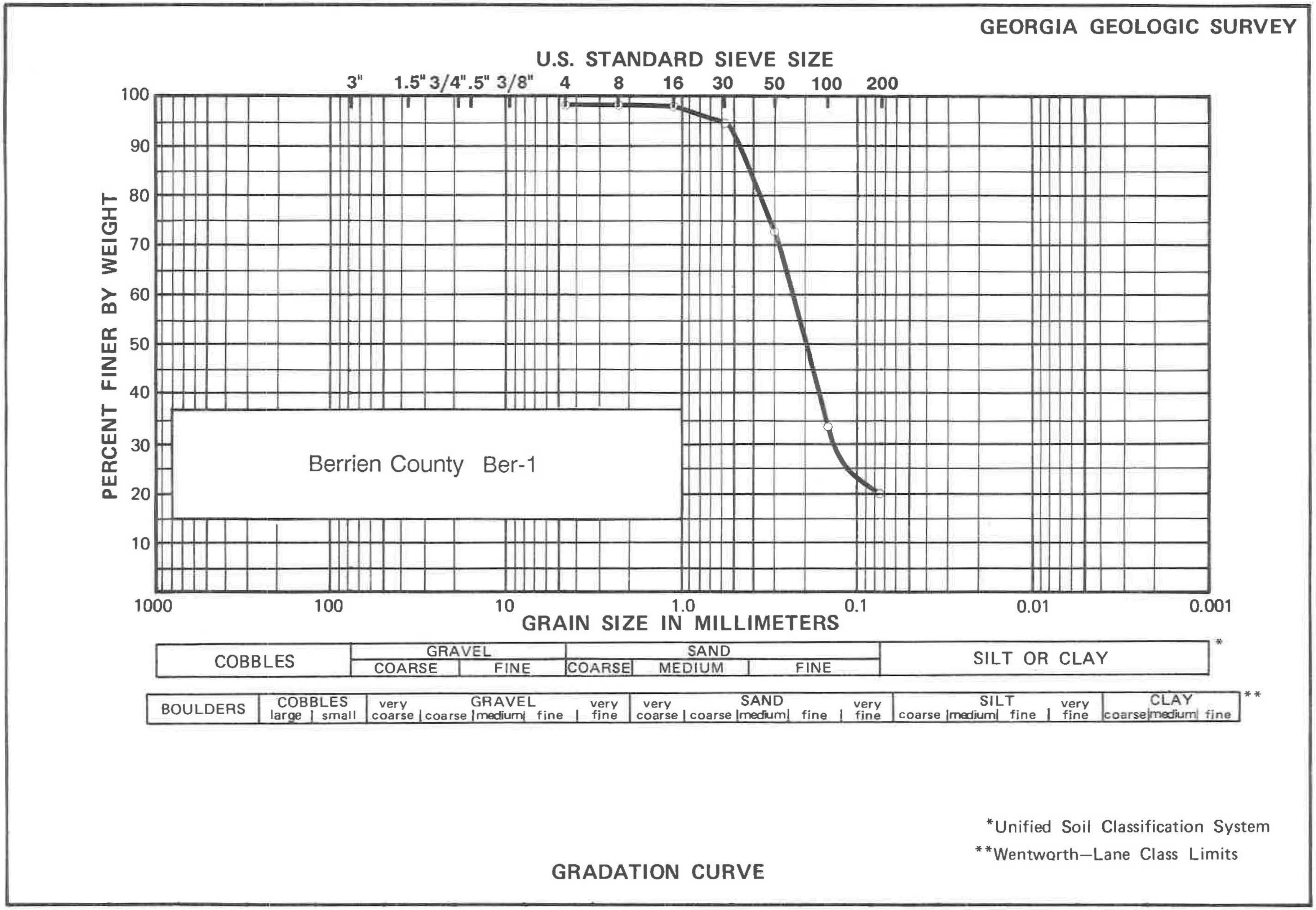


Figure 20. Size distribution curve of Sample Ber-1.

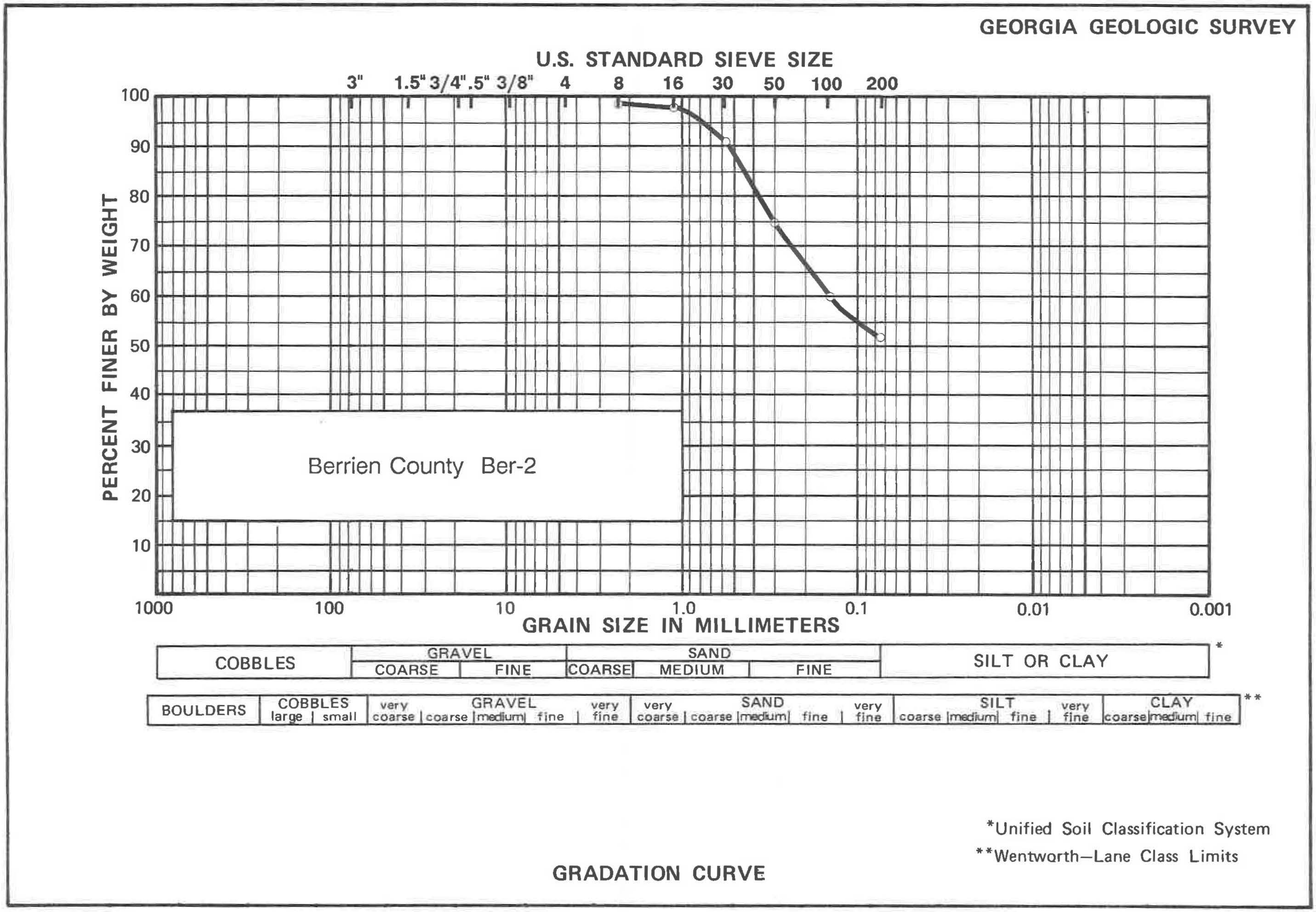


Figure 21. Size distribution curve of Sample Ber-2.

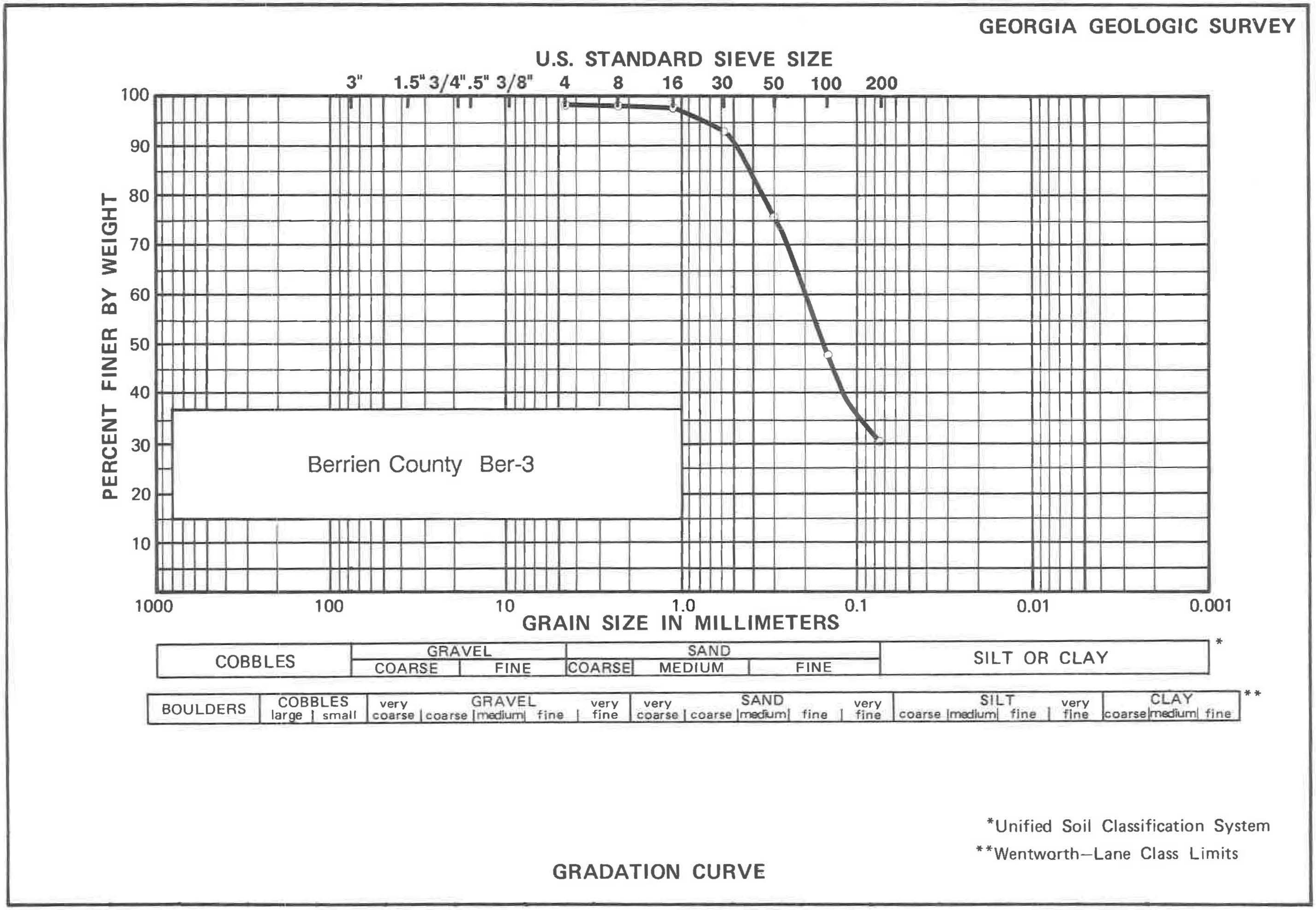


Figure 22. Size distribution curve of Sample Ber-3.

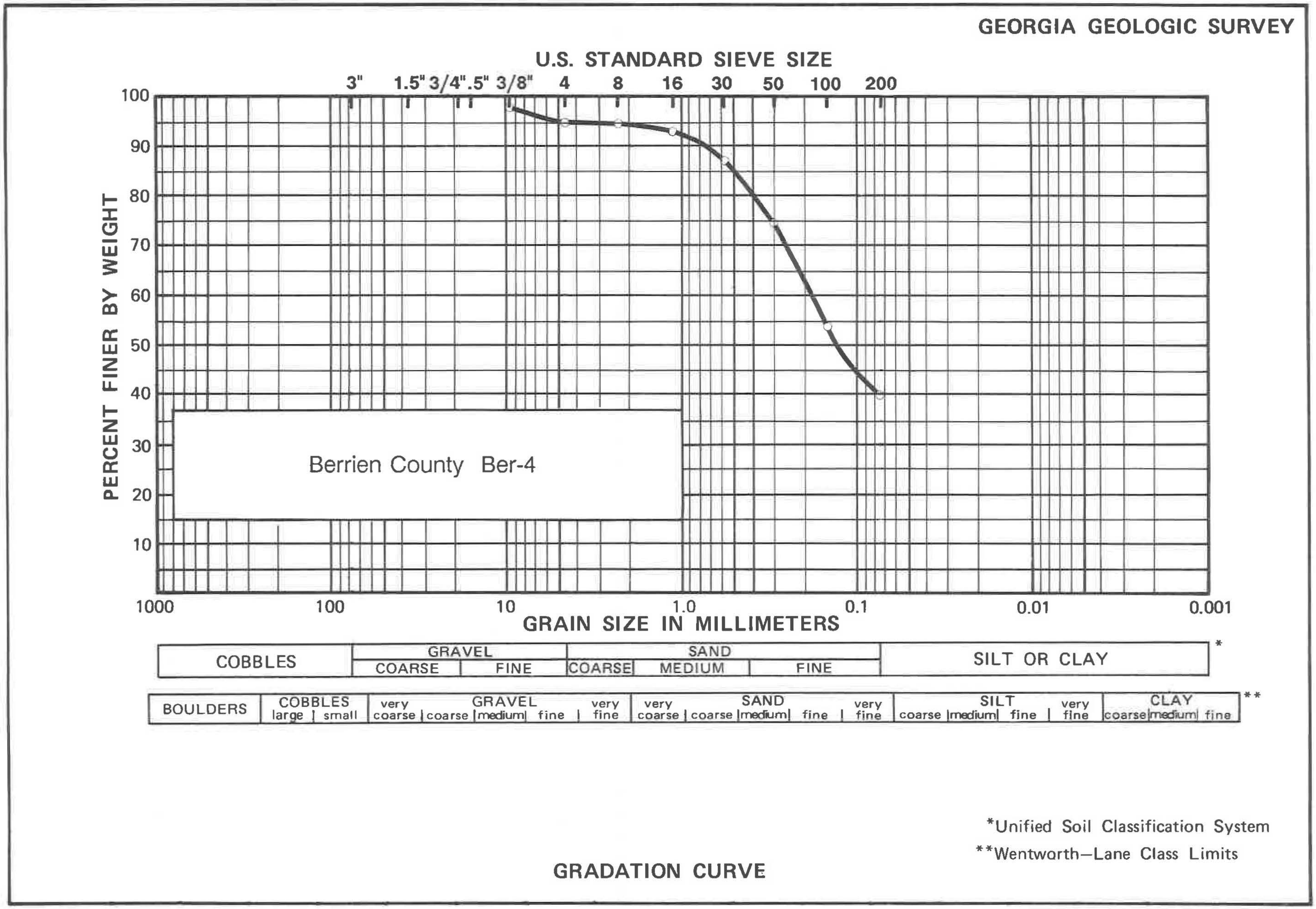


Figure 23. Size distribution curve of Sample Ber-4.

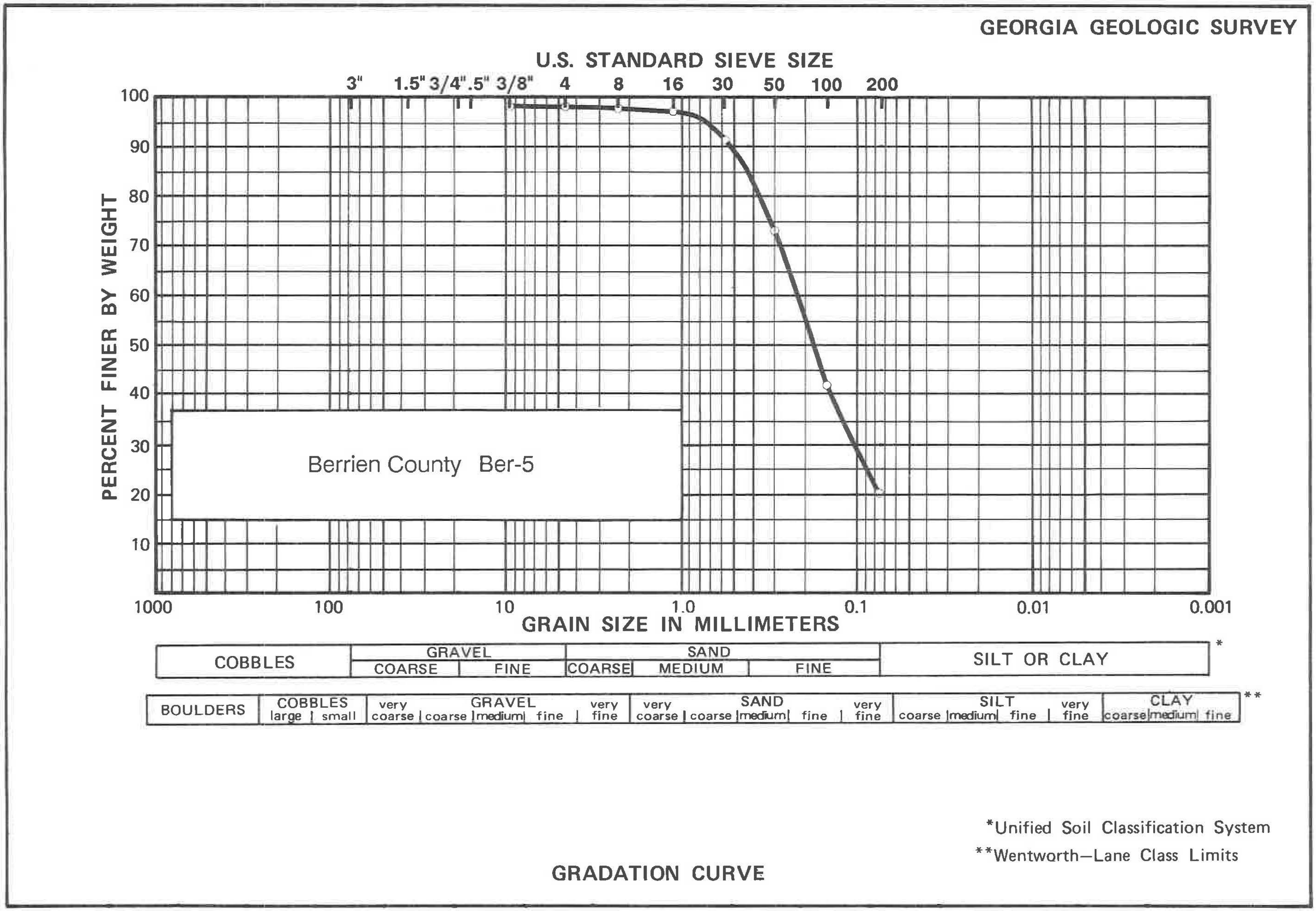


Figure 24. Size distribution curve of Sample Ber-5.

Bibb County

Note: A description of the aggregate potential for that part of Bibb County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 23-28).

Geology and Physiography

The surficial sediments of Bibb County are derived from the crystalline rocks of the Piedmont, the Oconee Group, and Quaternary alluvium. The part of Bibb County that is within the study area lies within the Fall Line Hills District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 159) reported that the Macon Sand and Supply Company had a sand operation on the west bank of the Ocmulgee River (Fig.25, Ts-8) and shipped the sand at least as far as Atlanta. Finer-grained sand is reported east of this site (Teas, 1921, p. 160; Fig.25, Ts-9).

Present Study

The soil series used in targeting sites for sampling was Lakeland. The geomorphic features present are possible terrace deposits near the Ocmulgee River. Five samples representing four sites were analyzed from Bibb County (Fig.25, Table 6).

Evaluation

Samples Bib-1a, Bib-1b, and Bib-4 were taken near the sites of aggregate quarries operated by Williams Brothers (Fig.25, A-024 and A-023, respectively). Neither of these samples met ASTM Standard C-33. Bib-1 was too well-sorted and Bib-4 was too fine-grained for use as construction aggregate in its natural state. However, samples Bib-2 and Bib-3 represent an abandoned sand pit; and they both met ASTM Standard C-33.

Mining Activity

Williams Brothers operates three aggregate pits in Bibb County (Fig.25, A-022, A-023, A-024) but would not reveal any information concerning their operation. All that is known is that there are active construction aggregate pits in Bibb County.

Table 6. Bibb County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Bib-1a	10'	trench	30'	2	no	1
Bib-1b	20'	trench	30'	2	no	1
Bib-2	15'	trench	20.5'	2	no[4]	2
Bib-3	10.5'	auger	25.5'	2	no[4]	1
Bib-4	4'	auger	4'	1	no	0

[1]For trench samples, this figure is the vertical length of the trench.

[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.

[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

[4]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

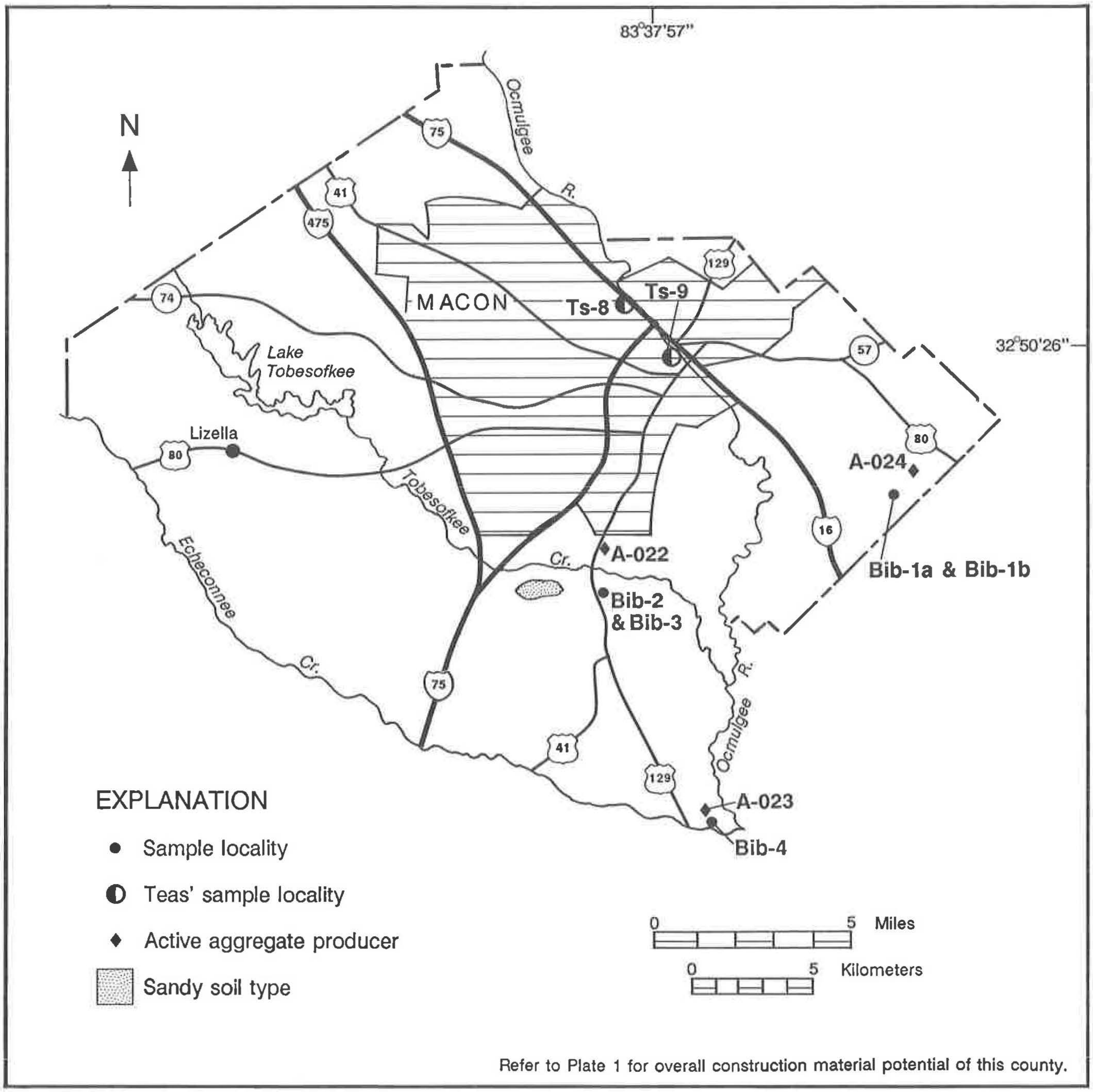


Figure 25. Bibb County map.

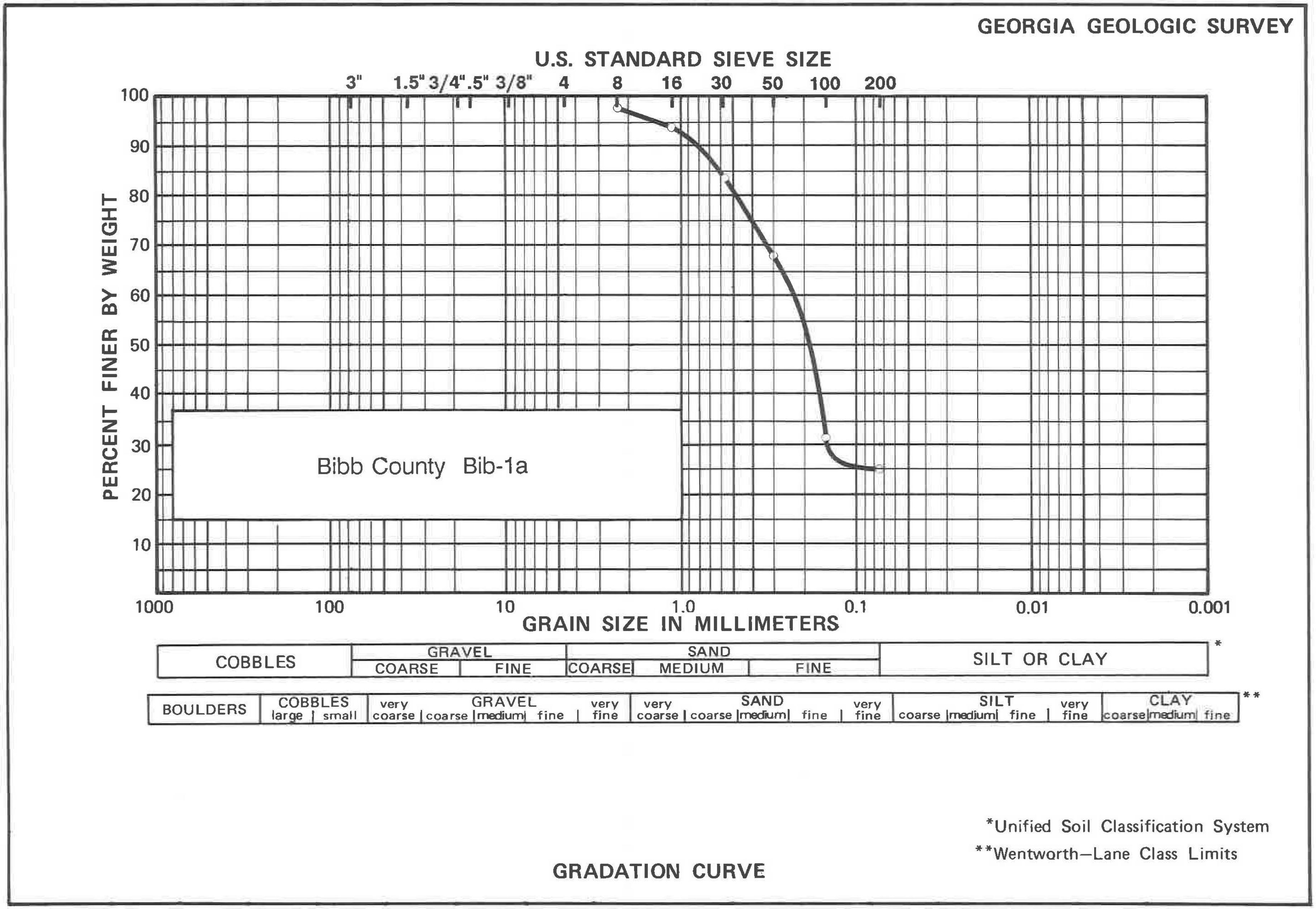


Figure 26. Size distribution curve of Sample Bib-1a.

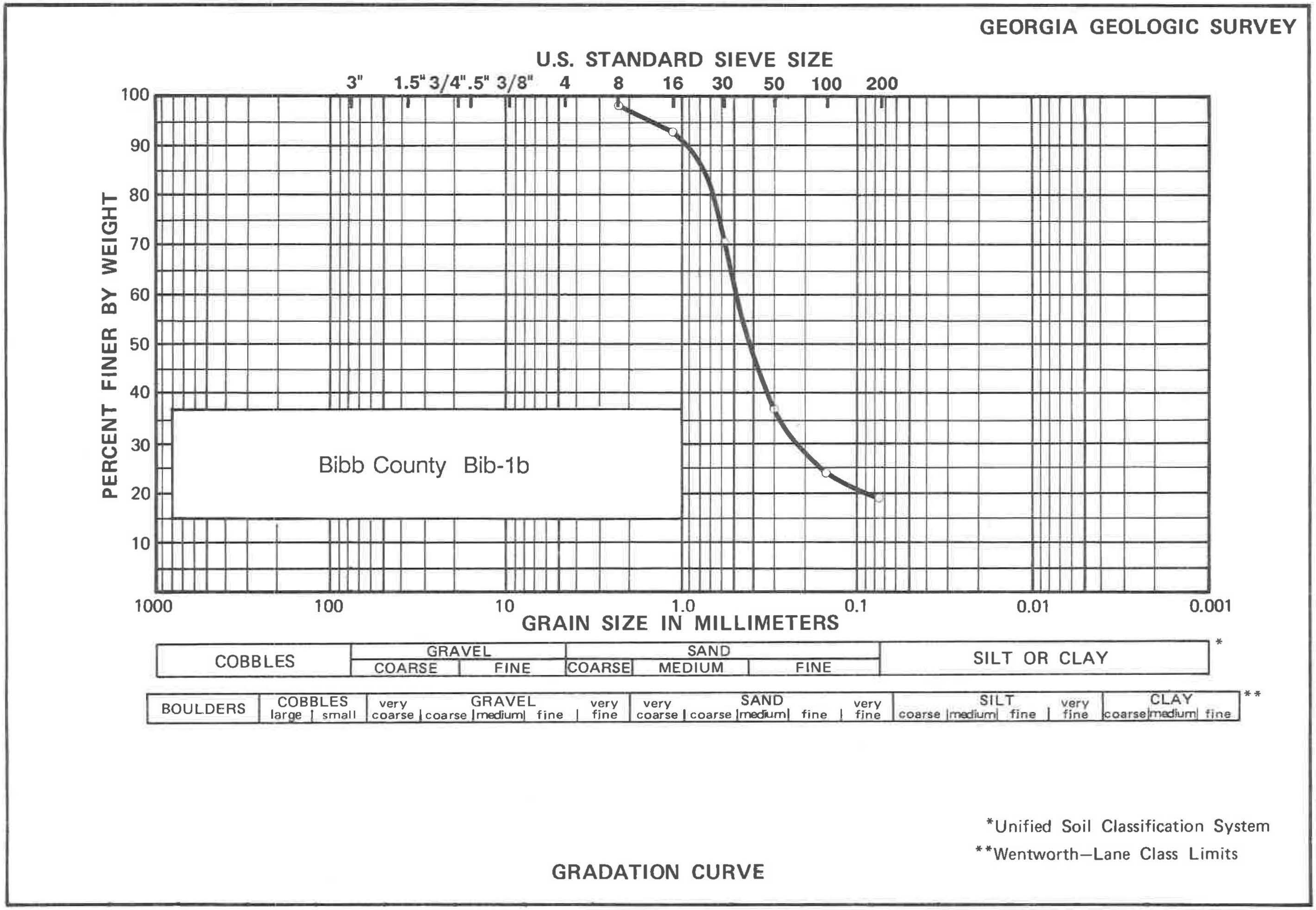


Figure 27. Size distribution curve of Sample Bib-1b.

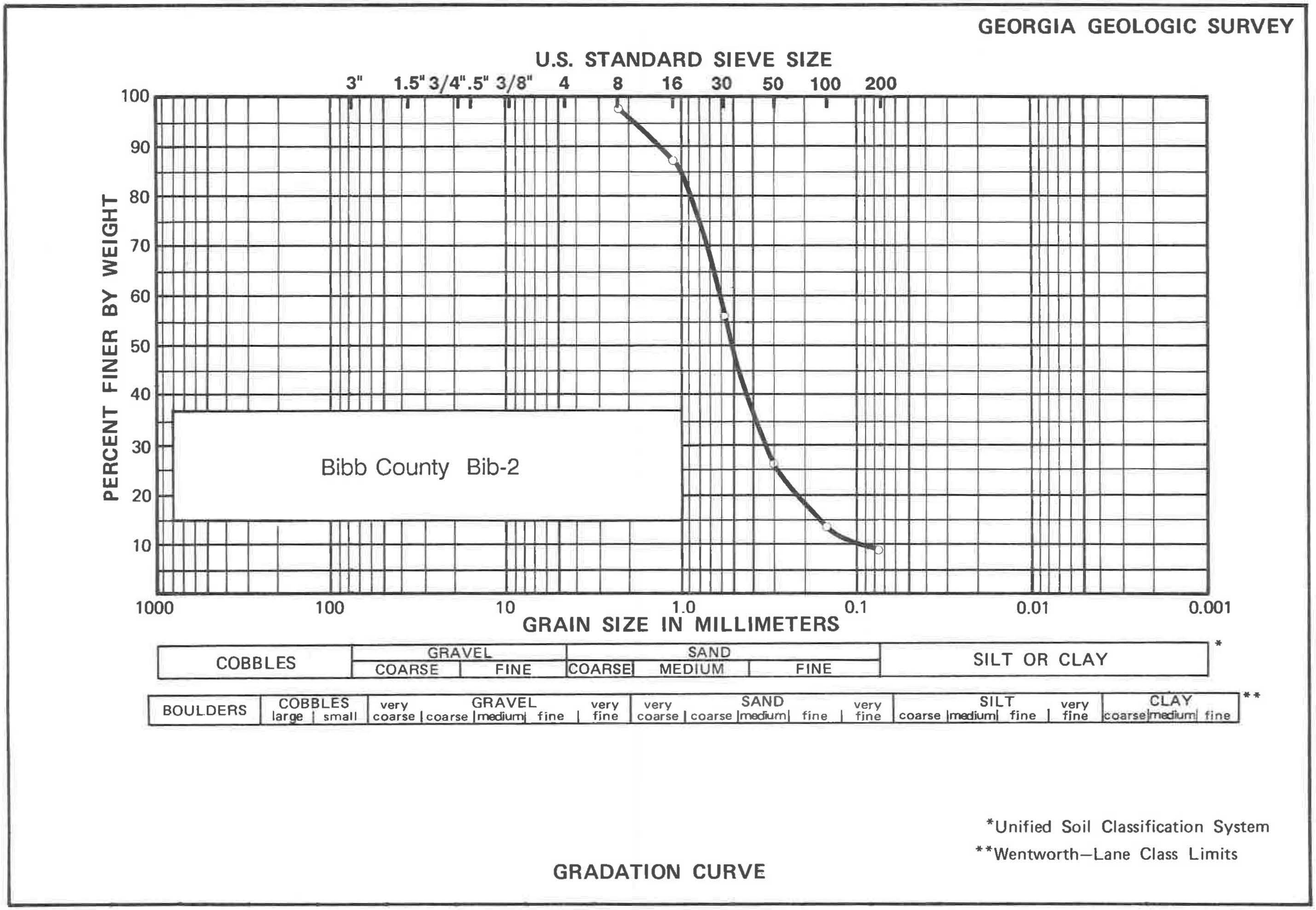


Figure 28. Size distribution curve of Sample Bib-2.

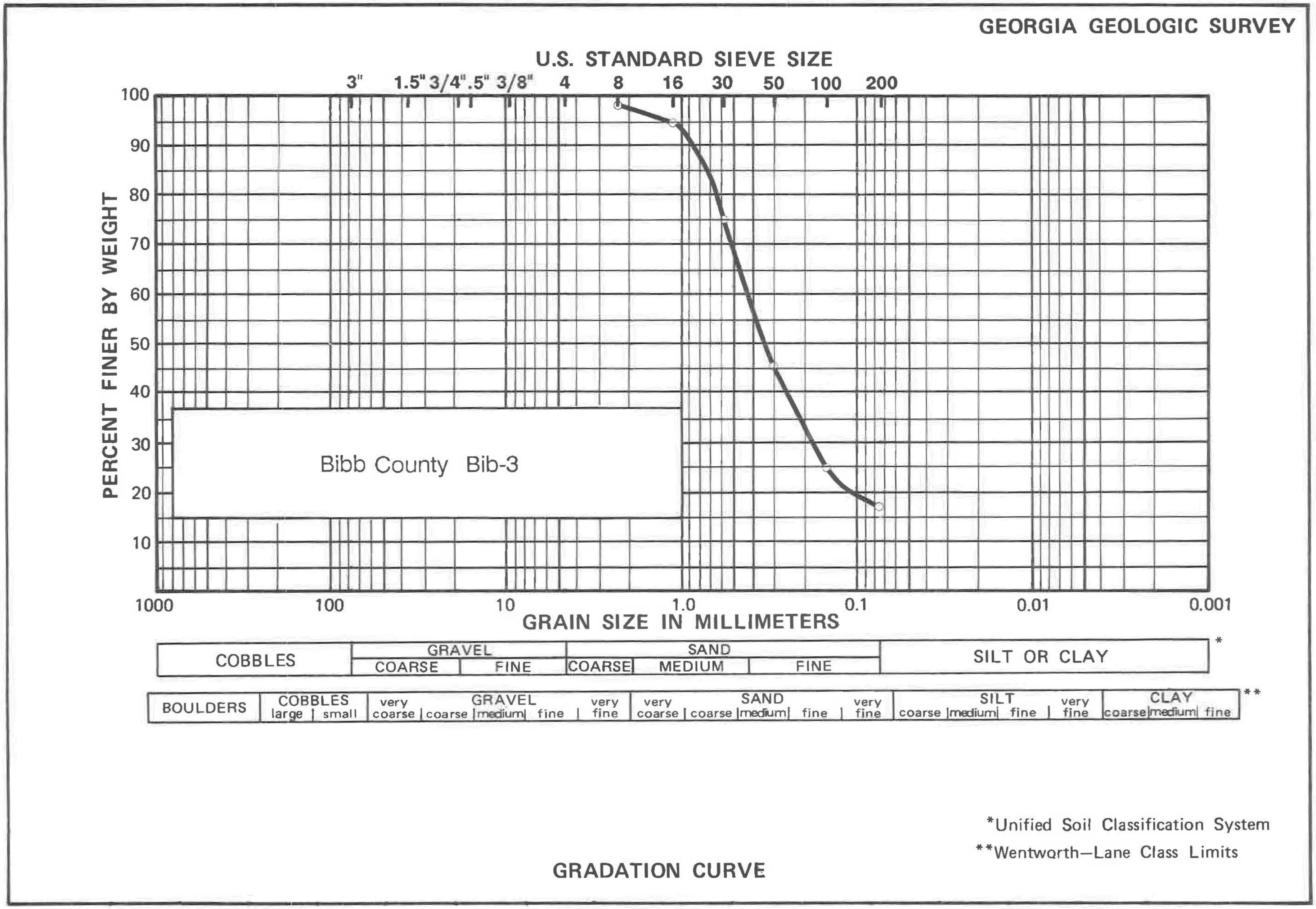


Figure 29. Size distribution curve of Sample Bib-3.

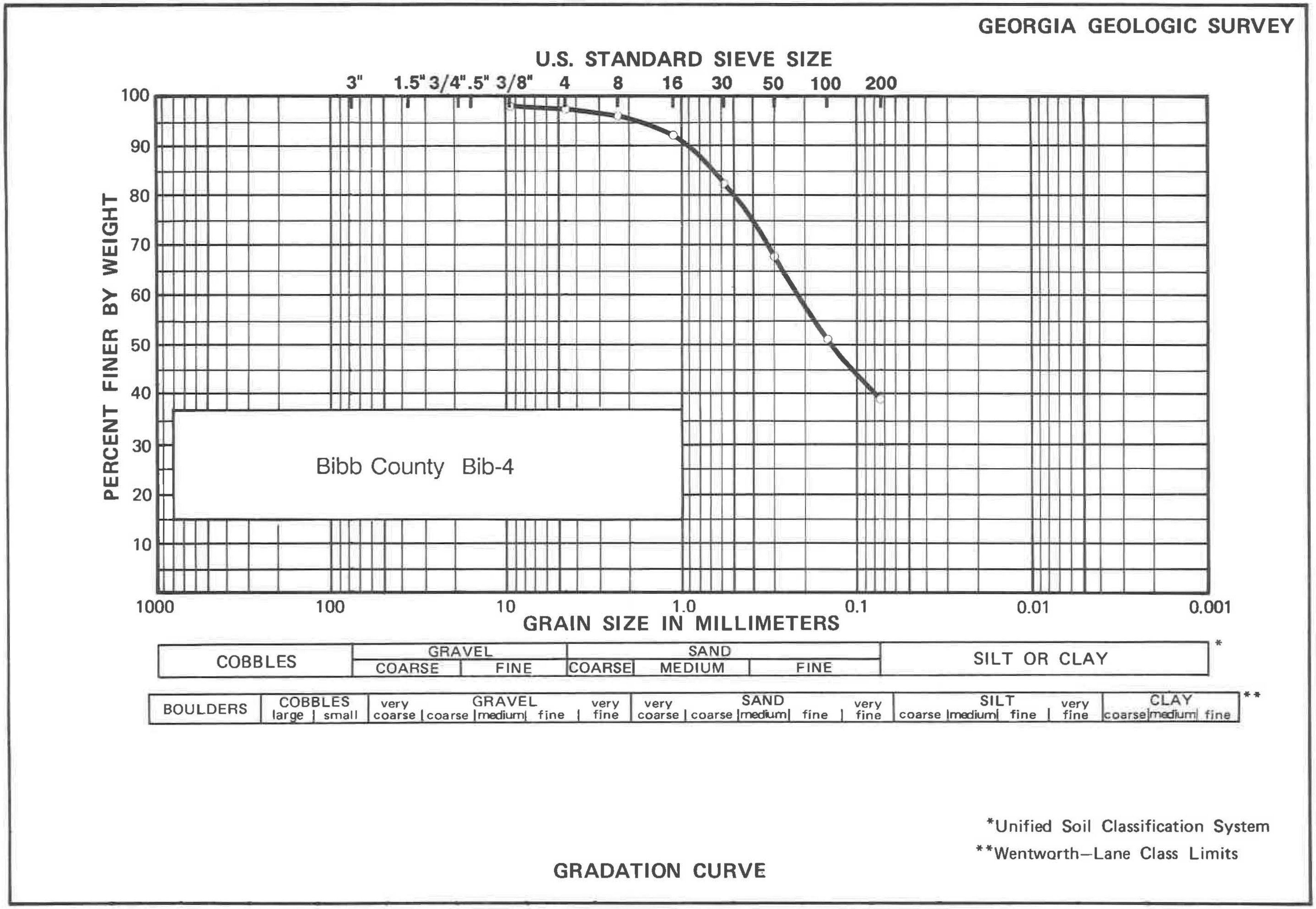


Figure 30. Size distribution curve of Sample Bib-4.

Summary Evaluation

The sites represented by samples Bib-1 and Bib-4 were, respectively, too well-sorted and too fine-grained for use as construction aggregate. Their proximity to existing sand operations roughly defines the extent of these existing pits. The most favorable area for new aggregate potential in Bibb County is represented by samples Bib-2 and Bib-3. The deposit sampled occurs over an area of approximately 10 acres and to a depth of at least 25.5 feet; this deposit could yield 555,000 tons of material. The construction material potential in this part of Bibb County is considered to be moderate.

Bleckley County

Geology and Physiography

The surficial sediments of Bleckley County are derived from the Barnwell Group, the Altamaha Formation, and deposits of Oligocene age. Bleckley County lies within the Fall Line Hills and Vidalia Upland Districts of the Coastal Plain Province.

Previous Study

Teas (1921) reported no significant amount of suitable sand in Bleckley County.

Present Study

The soil association targeted in Bleckley County was #24 (see p. 7), which is present as isolated areas remotely associated with the Ocmulgee River. There were no apparent geomorphic features indicative of sand or gravel deposits. Three samples, representing two sites, were analyzed for aggregate potential (Fig.31; Table 7).

Evaluation

Samples Ble-2a and Ble-2b represent the preferred soil type. The material failed to meet ASTM Standard C-33 and is too well-sorted for use as construction aggregate. Sample Ble-1 represents a four foot exposure of clayey sand with occasional pebbles. This site extends for approximately 20 acres and to a depth of four feet. This clayey sand deposit could produce as much as 174,000 tons before upgrading. Although this

Table 7. Bleckley County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Ble-1	4'	trench	4'	1	no[4]	1
Ble-2a	5'	auger	9.5'	2	no	0
Ble-2b	4.5'	auger	9.5'	2	no	0

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[4]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

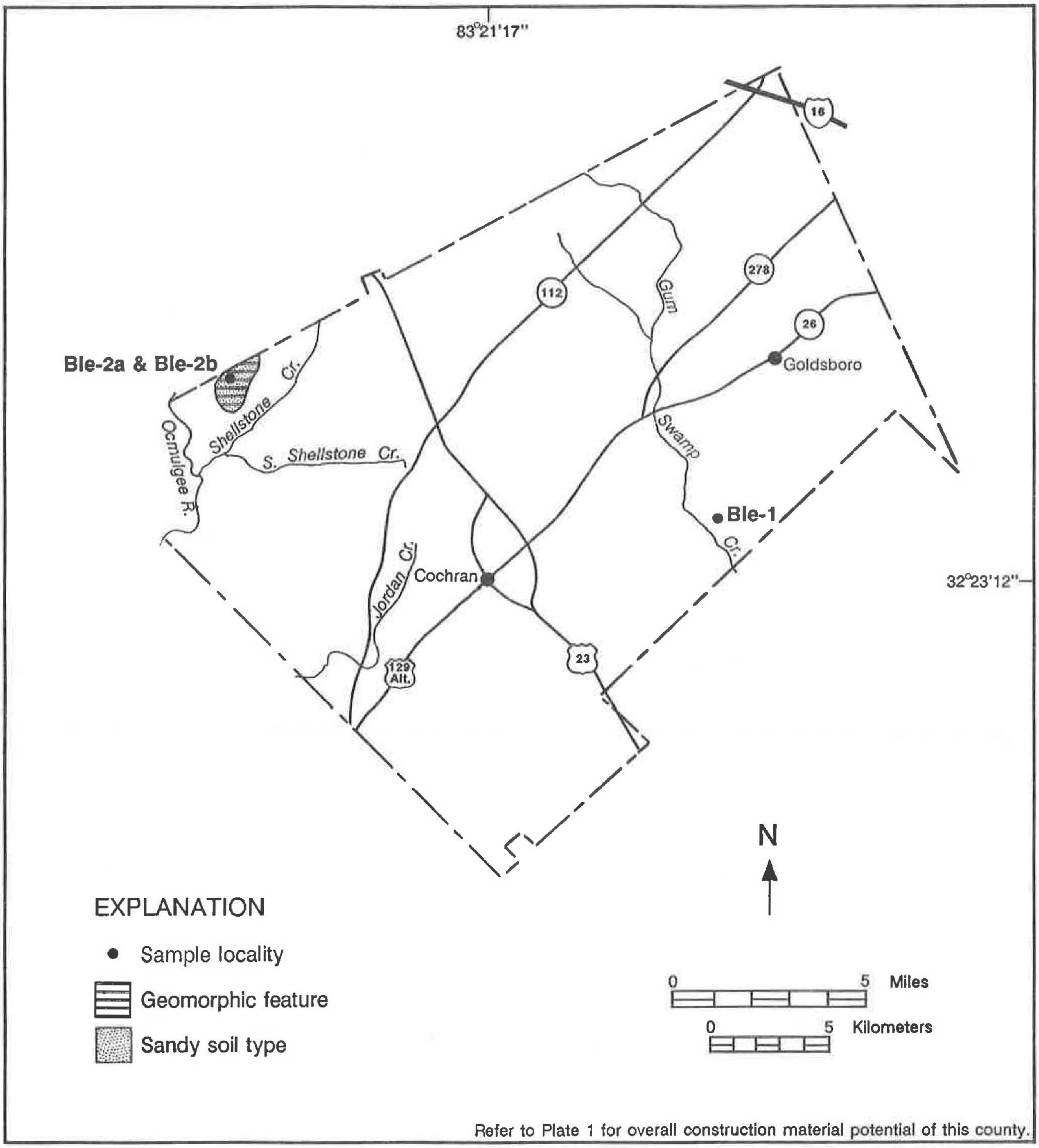


Figure 31. Bleckley County map.

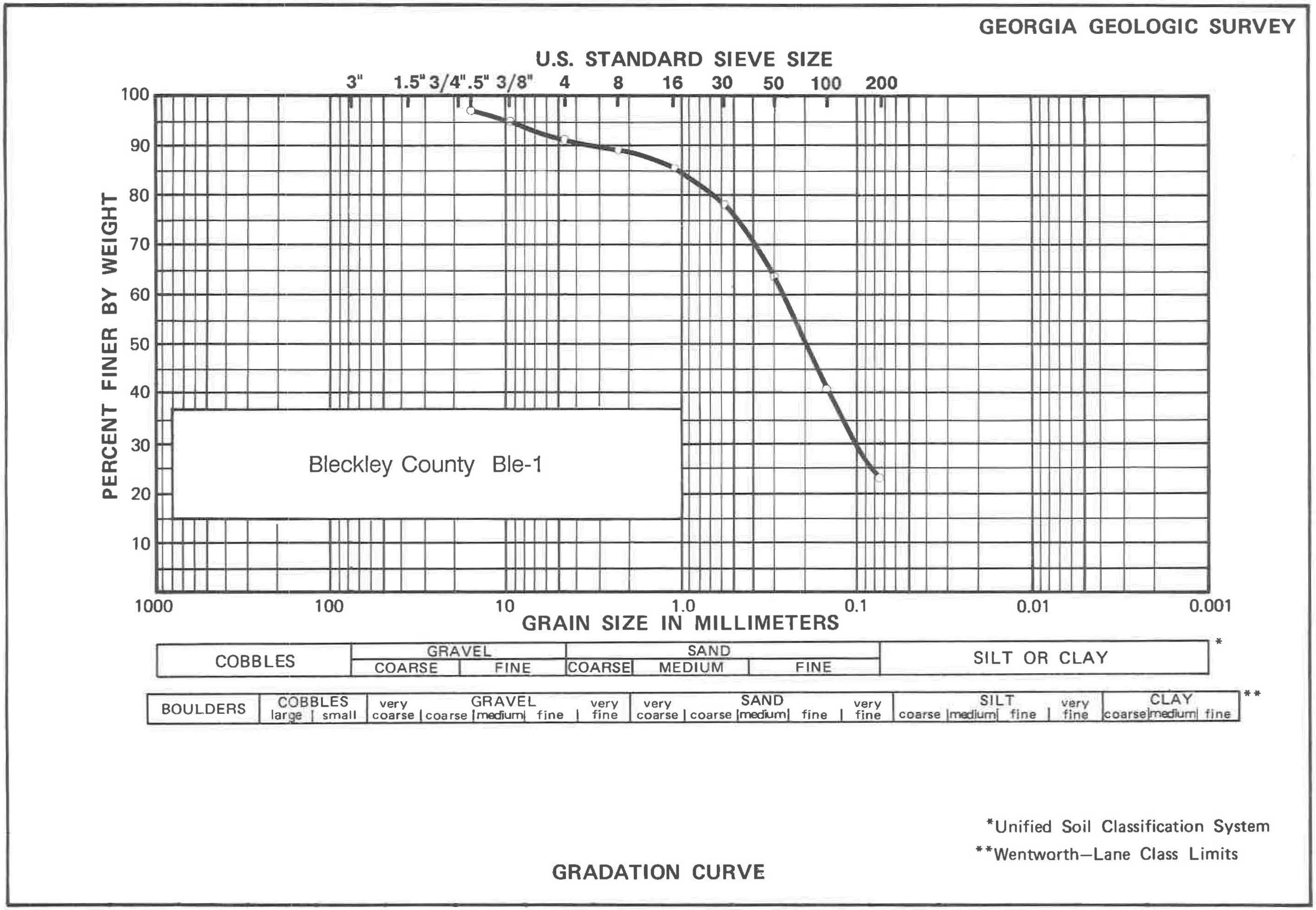


Figure 32. Size distribution curve of Sample Ble-1.

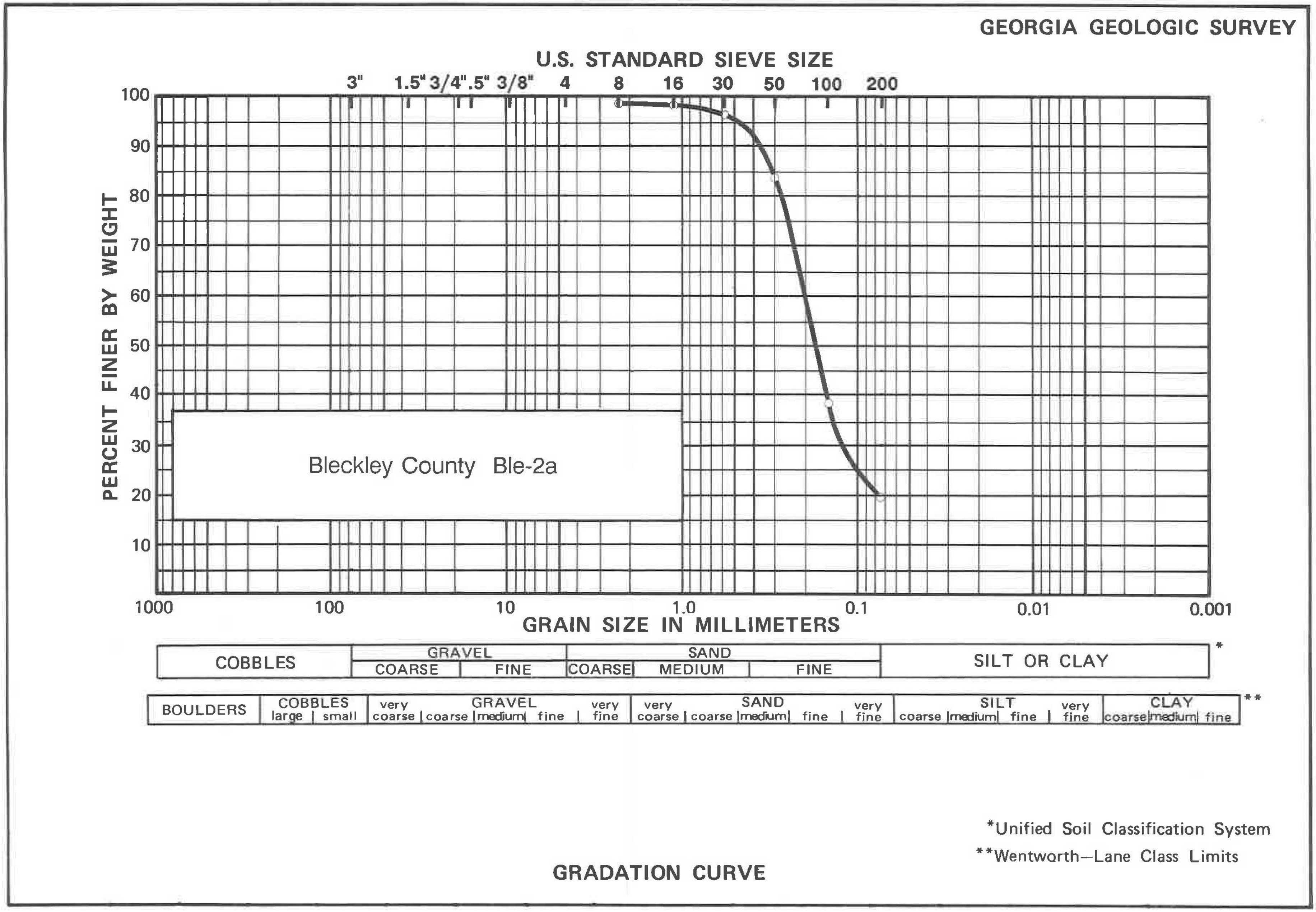


Figure 33. Size distribution curve of Sample Ble-2a.

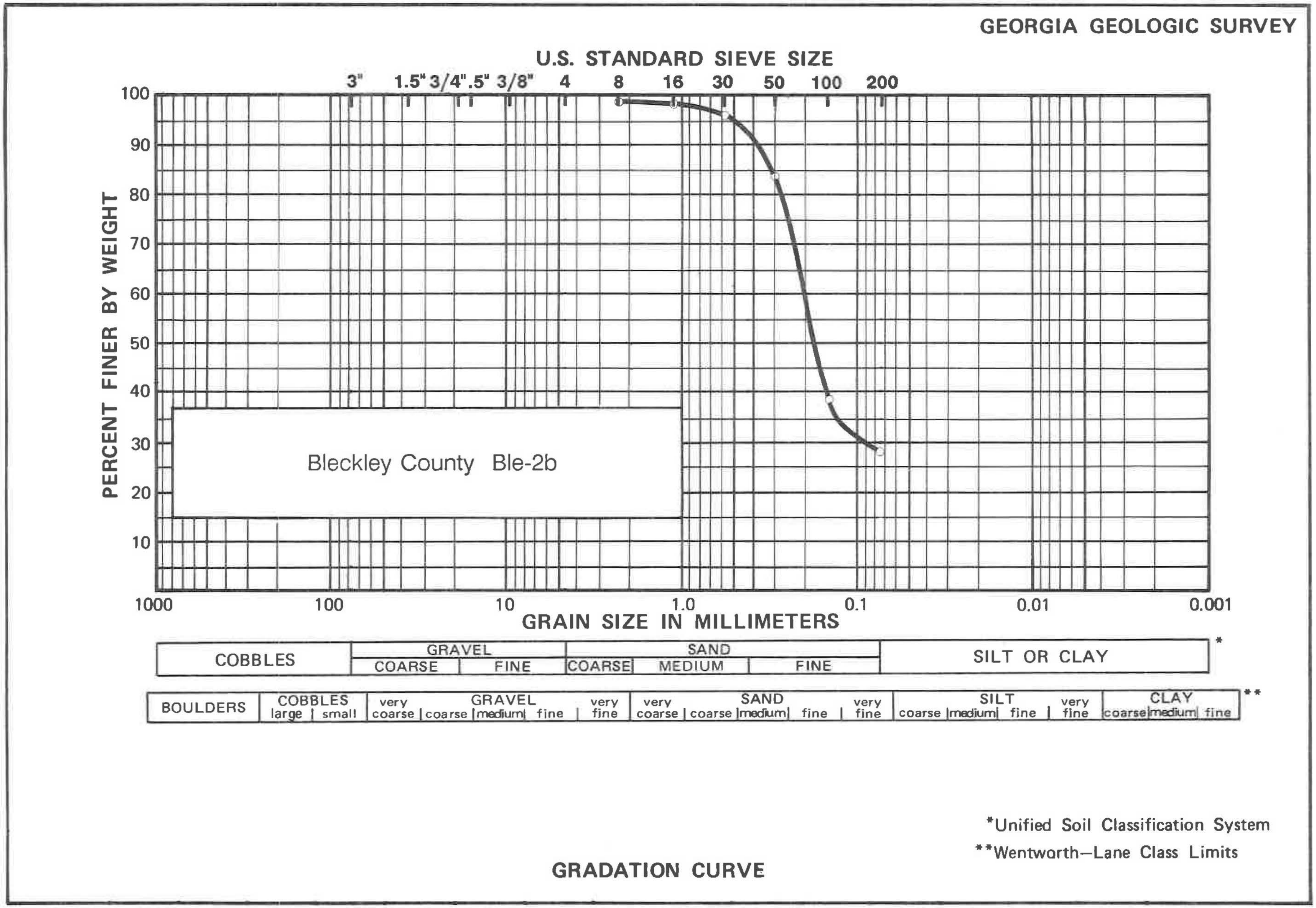


Figure 34. Size distribution curve of Sample Ble-2b.

sample failed to meet ASTM Standard C-33, it may be upgraded and made suitable for construction aggregate.

Mining Activity

There are no active or recently inactive mining operations in Bleckley County.

Summary Evaluation

Sample Ble-1 represents the most favorable site for aggregate potential in Bleckley County; however, this material did not meet ASTM Standard C-33. The construction material potential for Bleckley County is considered to be low to moderate.

<u>Clinch County</u>

Geology and Physiography

The surficial sediments of Clinch County are derived from the Altamaha Formation and the Statenville Formation of the Hawthorne Group. Clinch County lies almost entirely within the Okefenokee Basin District, but has small areas within the Bacon Terraces and Tifton Uplands Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 178) noted the presence of surficial sand on the Satilla Terrace along the Alapaha River, but none of this sand is of aggregate quality (Fig.35, Ts-10).

Present Study

The soil association used in targeting sites in Clinch County was #41 (see p. 7), which is present as surficial material throughout the county. There were no apparent geomorphic features indicative of sand or gravel deposits in Clinch County. Four sites were sampled and analyzed for construction aggregate in Clinch County (Fig.35; Table 8).

Evaluation

All samples were taken from the preferred soil type, however, all are too fine-grained and too well-sorted for use as construction aggregate.

Mining Activity

There are no active or recently inactive aggregate operations in Clinch County.

Summary Evaluation

All samples proved to be too fine-grained and too well-sorted for use as construction aggregate, therefore, the construction material potential for Clinch County is considered to be low.

Table 8. Clinch County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Cln-1	8'	auger	8'	1	no	1
Cln-2	4'	auger	4'	1	no	0
Cln-3	12'	auger	12'	1	no	2
Cln-4	8'	auger	8'	1	no	0

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

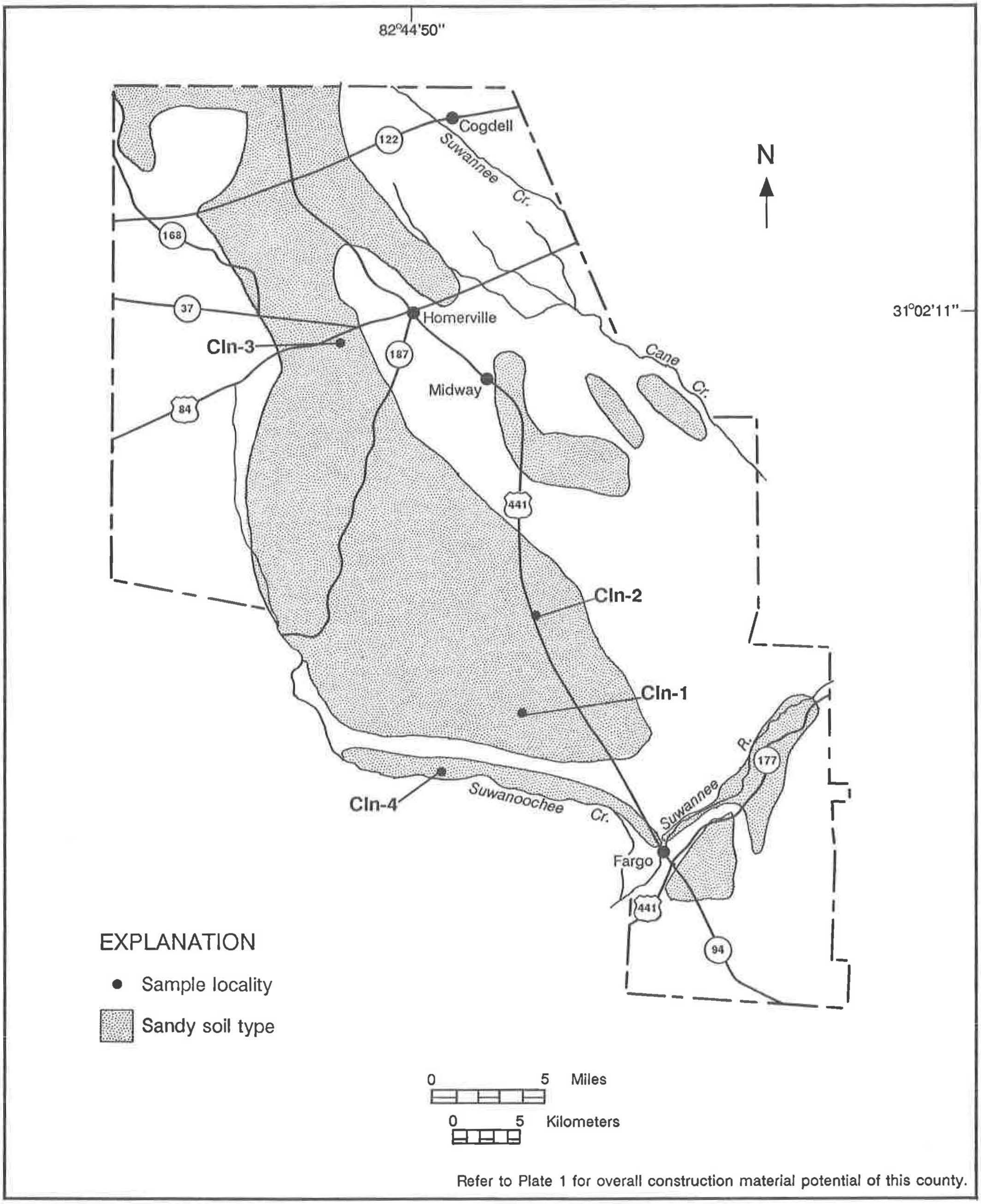


Figure 35. Clinch County map.

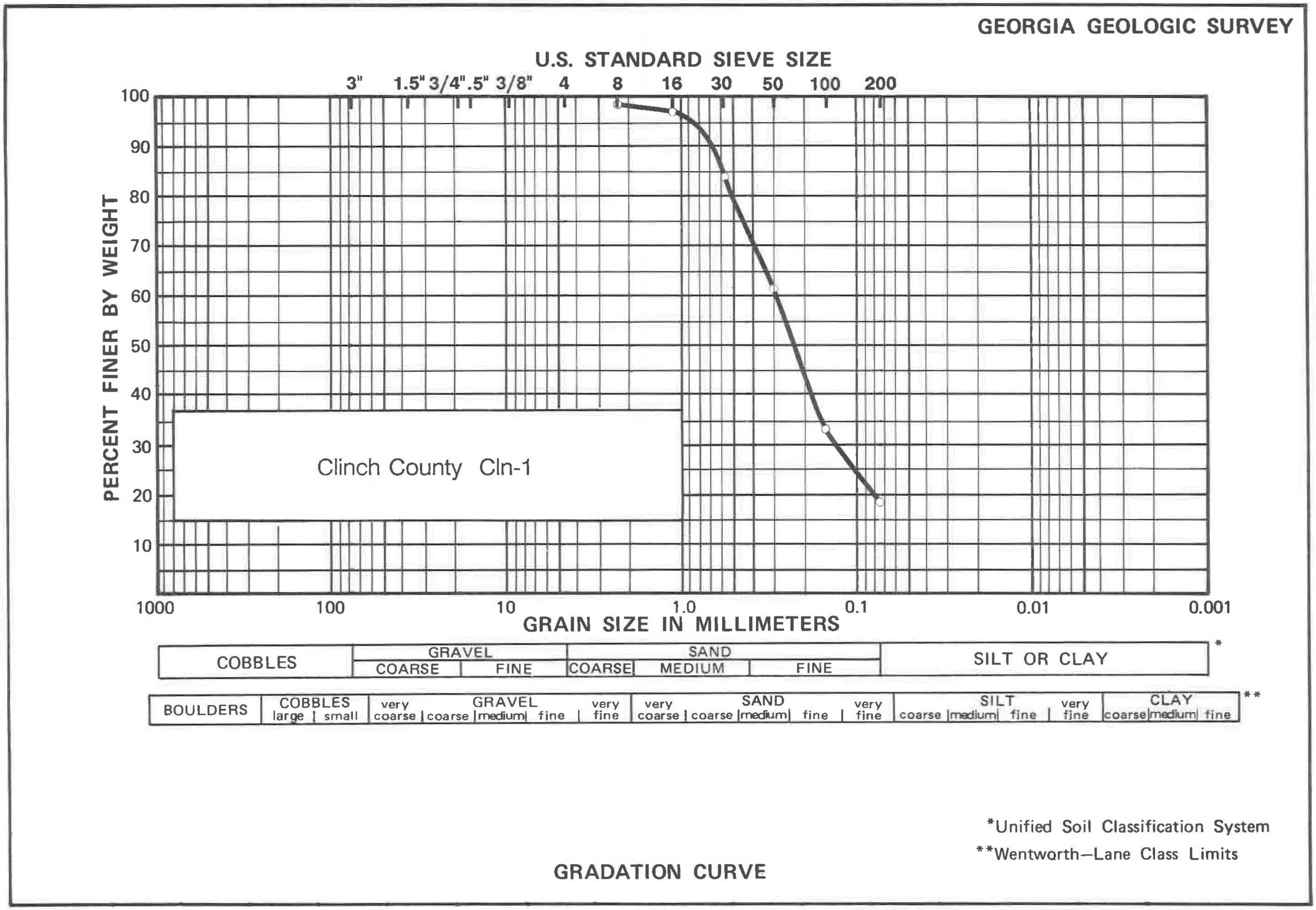


Figure 36. Size distribution curve of Sample Cln-1.

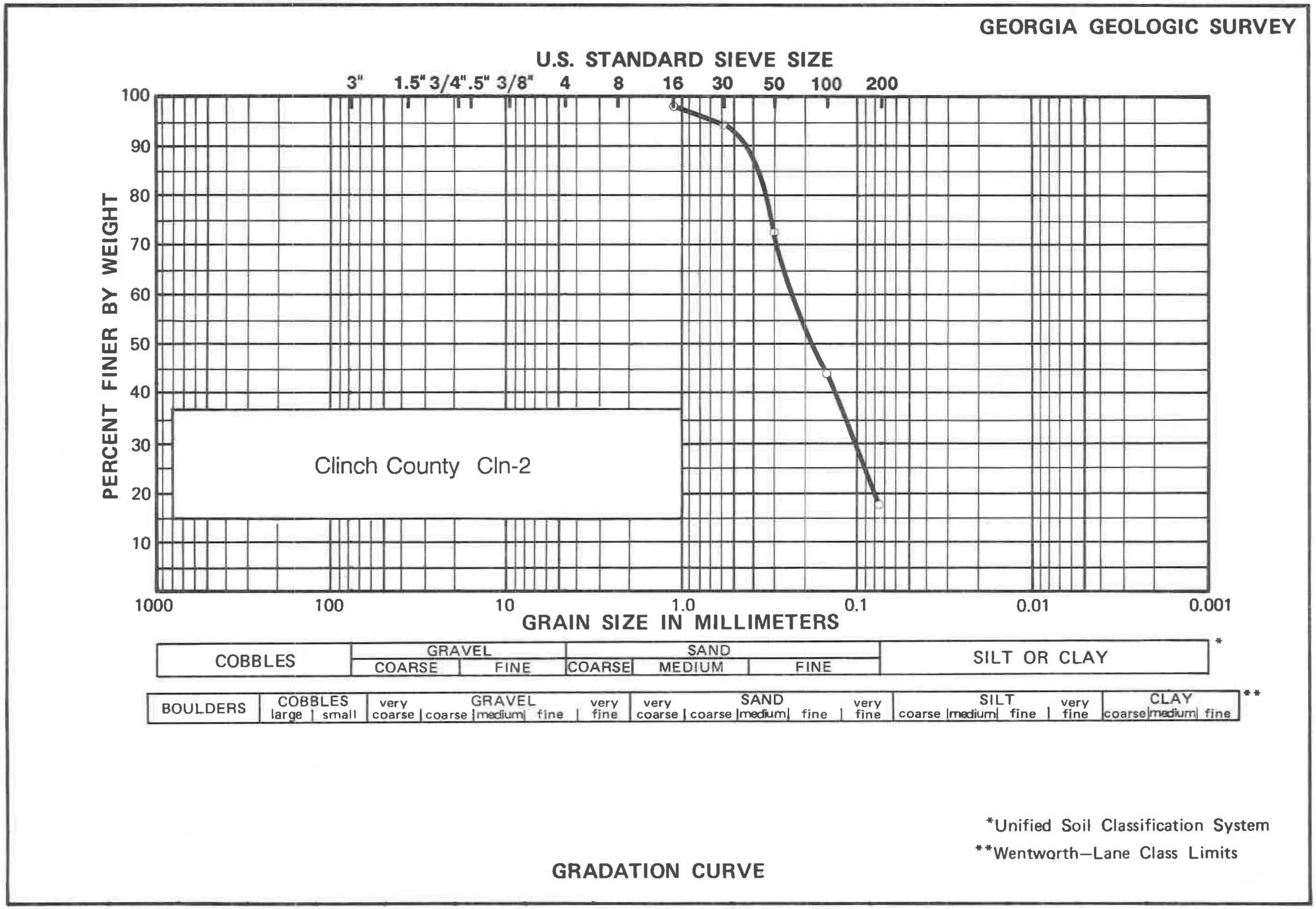


Figure 37. Size distribution curve of Sample Cln-2.

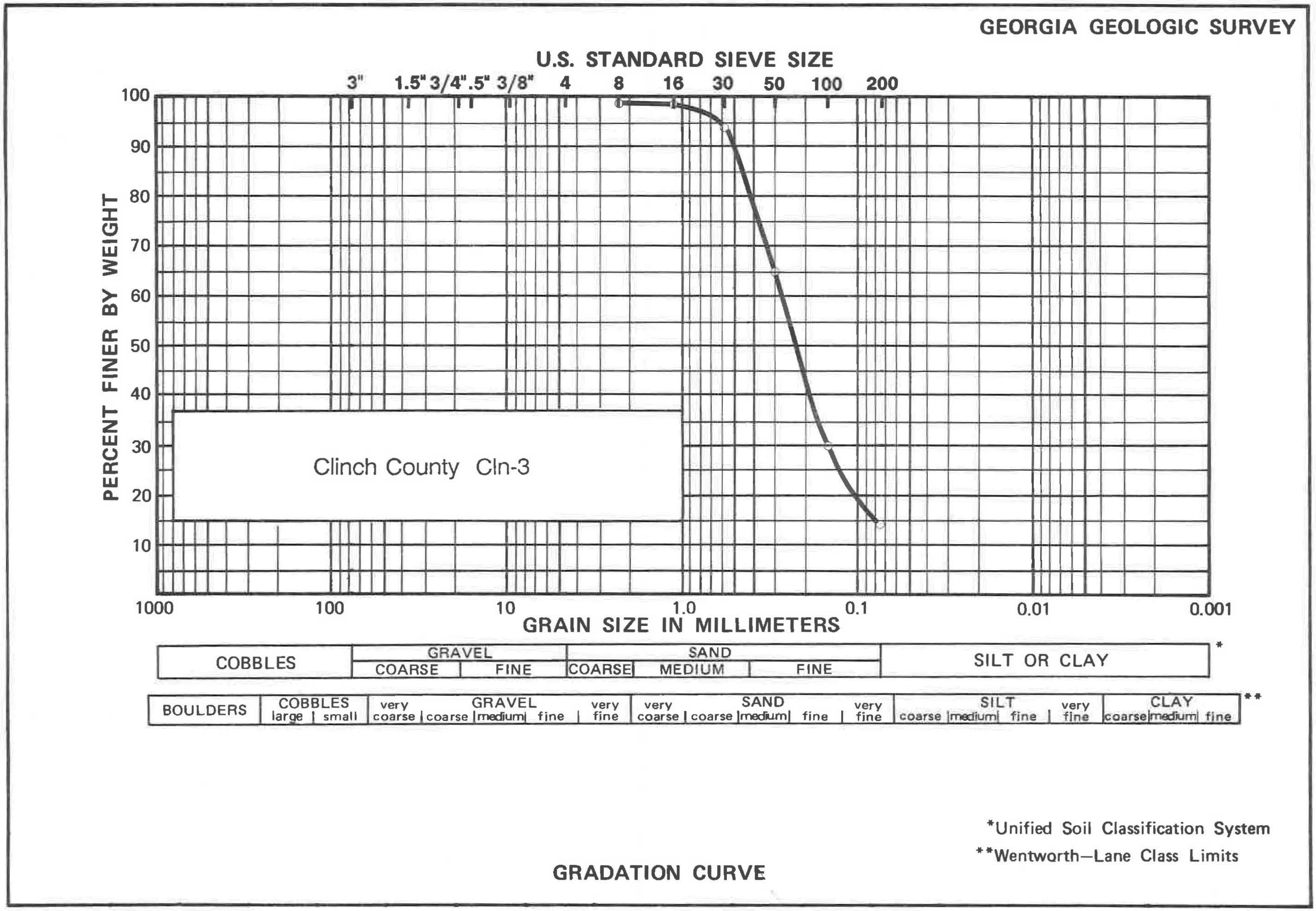


Figure 38. Size distribution curve of Sample Cln-3.

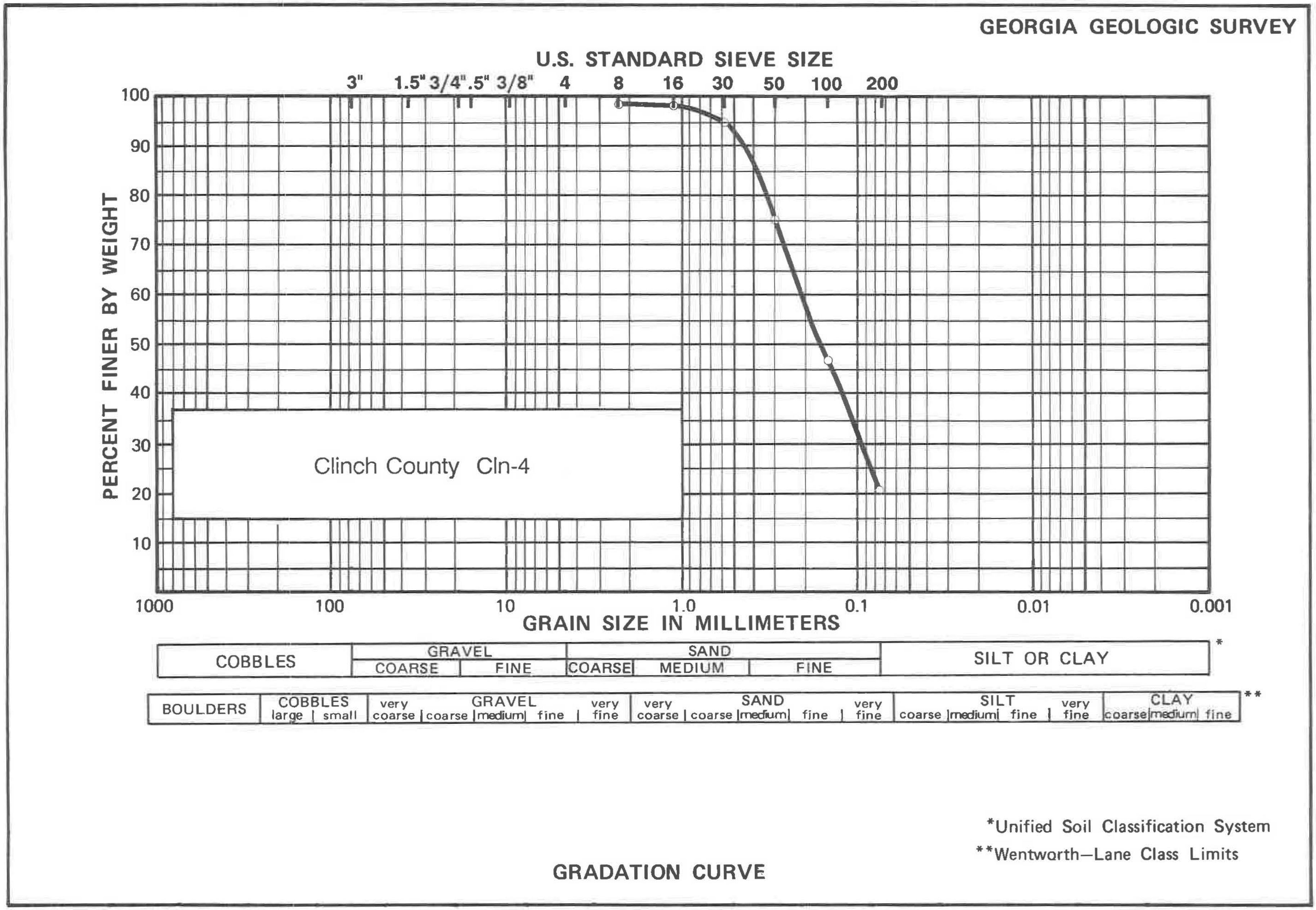


Figure 39. Size distribution curve of Sample Cln-4.

Coffee County

Geology and Physiography

The surficial sediments in Coffee County are derived from the Altamaha Formation and Quaternary alluvium. Coffee County lies entirely within the Coastal Plain Province, with the greater portion of Coffee County lying within the Bacon Terraces District, and the remainder being situated in the Vidalia Upland and Tifton Upland Districts.

Previous Study

A large sand belt along Seventeenmile Creek was reported by Teas, (1921, p. 178; Fig.40, Ts-11). He also noted a small sand pit (p. 178; Fig.40, Ts-12) that has been worked intermittently, with the sand being used for local paving, as well as foundry use. More sand of this type was reported by Teas (1921) along the railroad north of Douglas (p. 179; Fig.40, Ts-13). Teas also reported the presence of coarse sand bars in the Ocmulgee River.

Present Study

The soil association used in targeting sites in Coffee County was #24 (see p. 7), which corresponds to the geomorphic features targeted; the large sand hills along the banks of the Satilla River and Seventeenmile River. Four sites were sampled and analyzed for aggregate (Fig.40; Table 9).

Evaluation

The area from which samples Cof-1 and Cof-4 were taken represents the favorable soil type, the targeted geomorphic feature, and was an area mentioned by Teas (1921, p. 178-179). The material present at these sites failed to meet ASTM Standard C-33. The sediments are too fine-grained and too well-sorted for use as construction aggregate. Samples Cof-2, and Cof-3 marginally failed ASTM Standard C-33, but could be upgraded. These two samples were taken from areas similar to the sites for Cof-1 and Cof-4, but may be suitable for construction aggregate, if upgraded.

Mining Activity

There are no active or recently inactive mining operations in Coffee County.

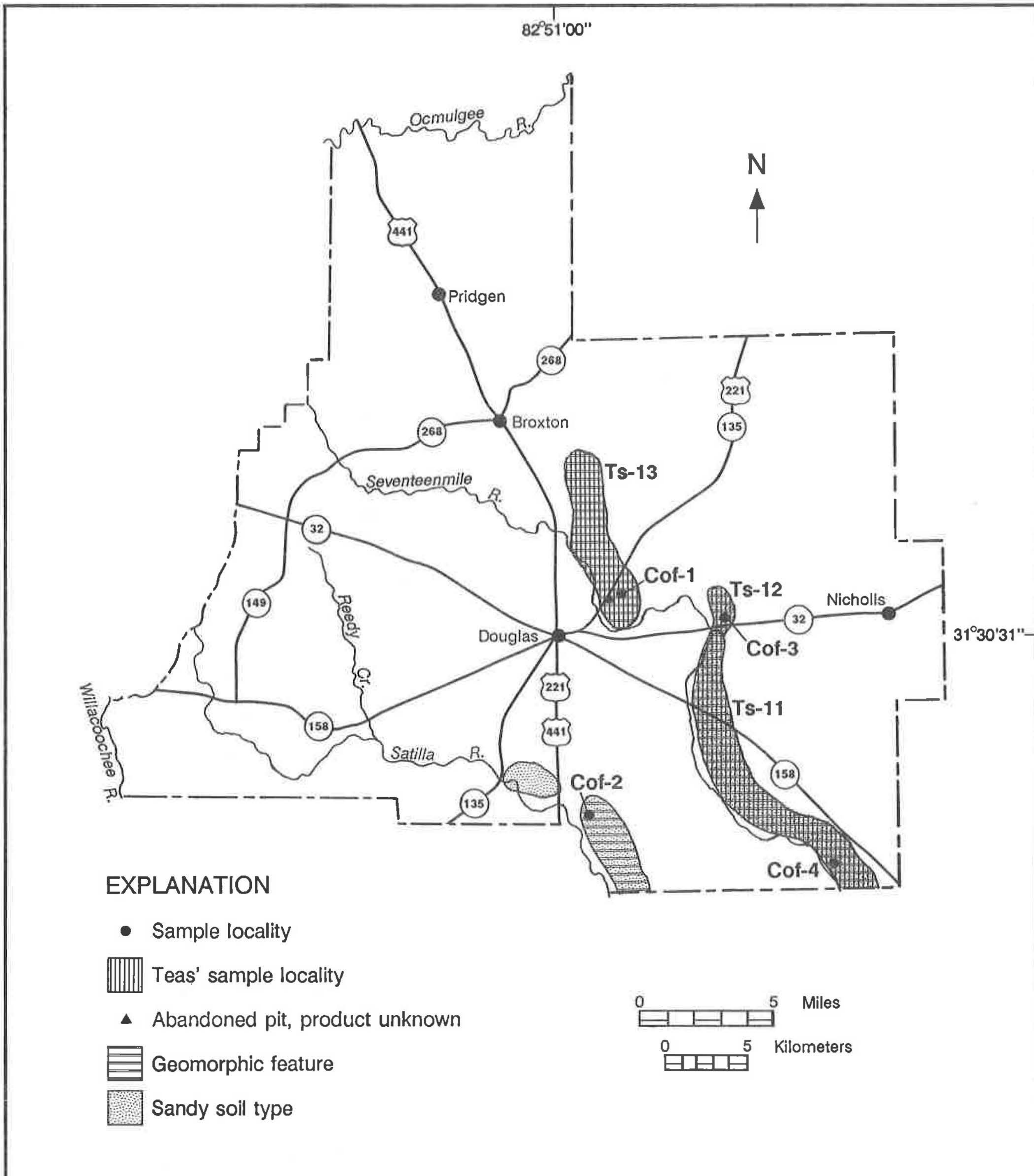
Summary Evaluation

The deposits represented by Cof-2 and Cof-3 could be sources of construction aggregate. Cof-2 represents a site of about 20 acres, and approximately 12 feet in thickness. Reserves could prove to yield 500,000 tons, before upgrading. The site represented by Cof-3 encompasses approximately 200 acres, with a thickness of approximately 16 feet; reserves could yield 6,000,000 tons, before upgrading. The construction material potential of Coffee County is considered to be moderate.

Table 9. Coffee County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Cof-1	8'	auger	8'	3	no	2
Cof-2	14'	auger	14'	2	no[2]	2
Cof-3	16'	auger	16'	3	no[2]	2
Cof-4	16'	auger	16'	3	no[2]	2

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[2]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.



Refer to Plate 1 for overall construction material potential of this county.

Figure 40. Coffee County map.

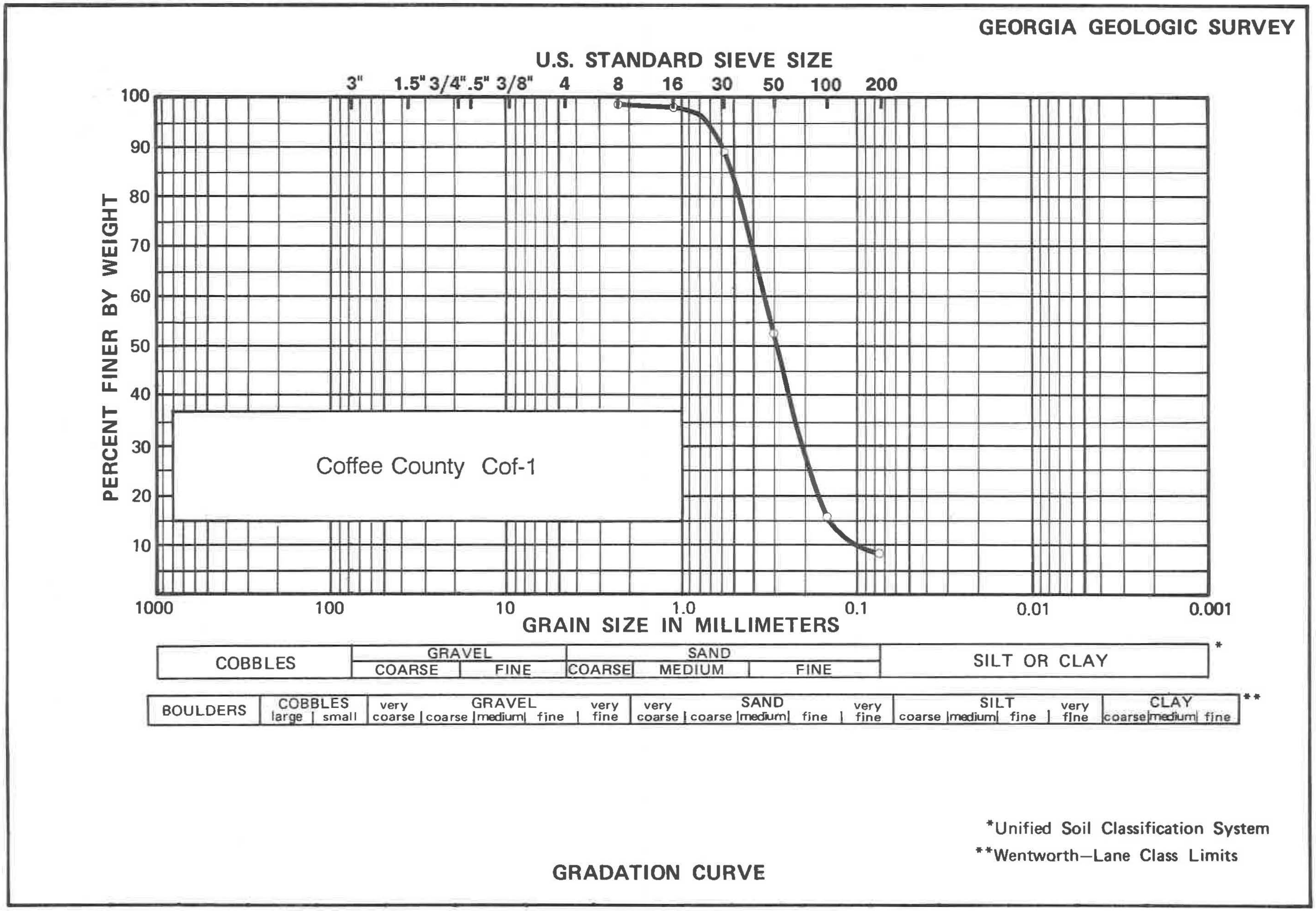


Figure 41. Size distribution curve of Sample Cof-1.

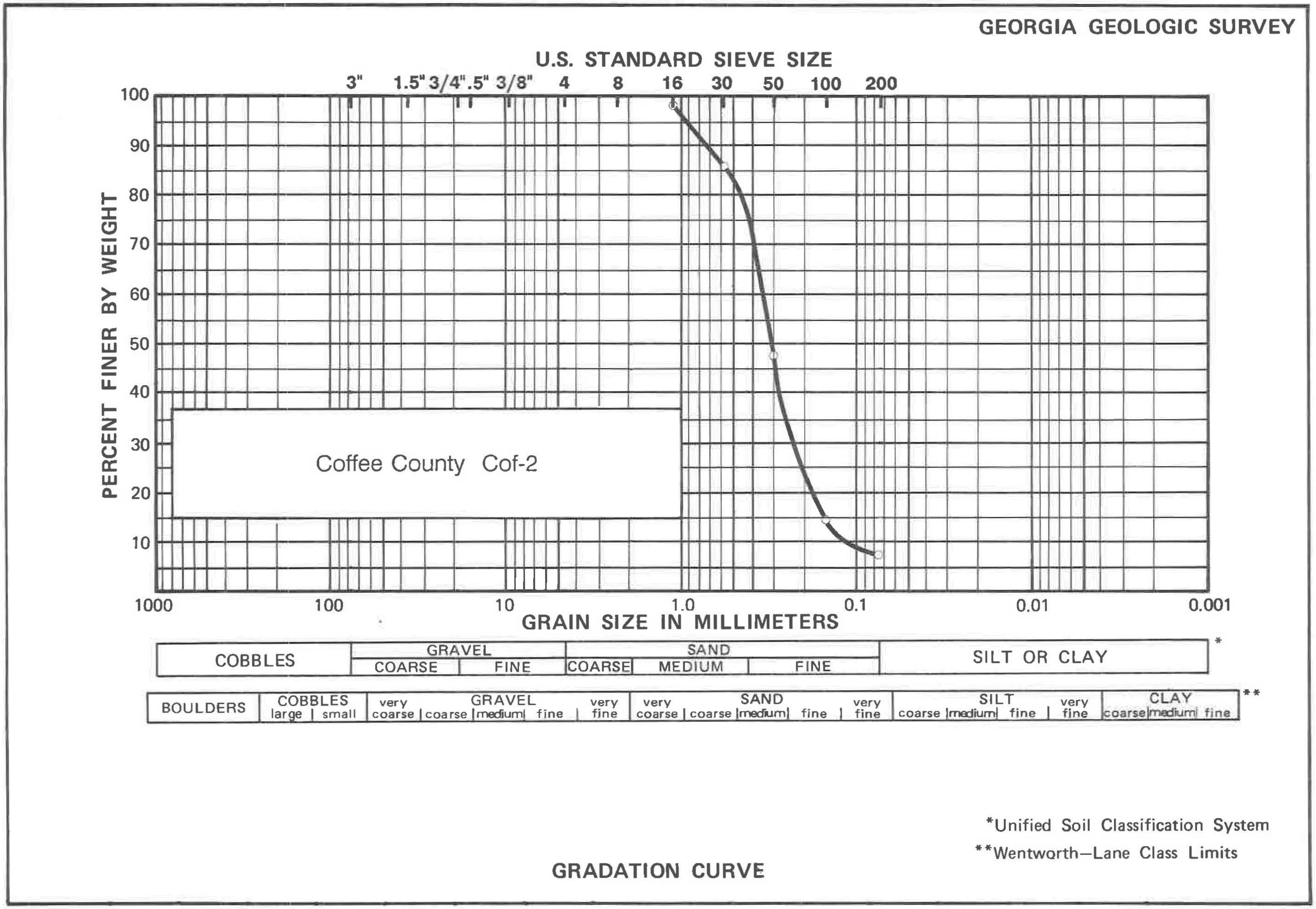


Figure 42. Size distribution curve of Sample Cof-2.

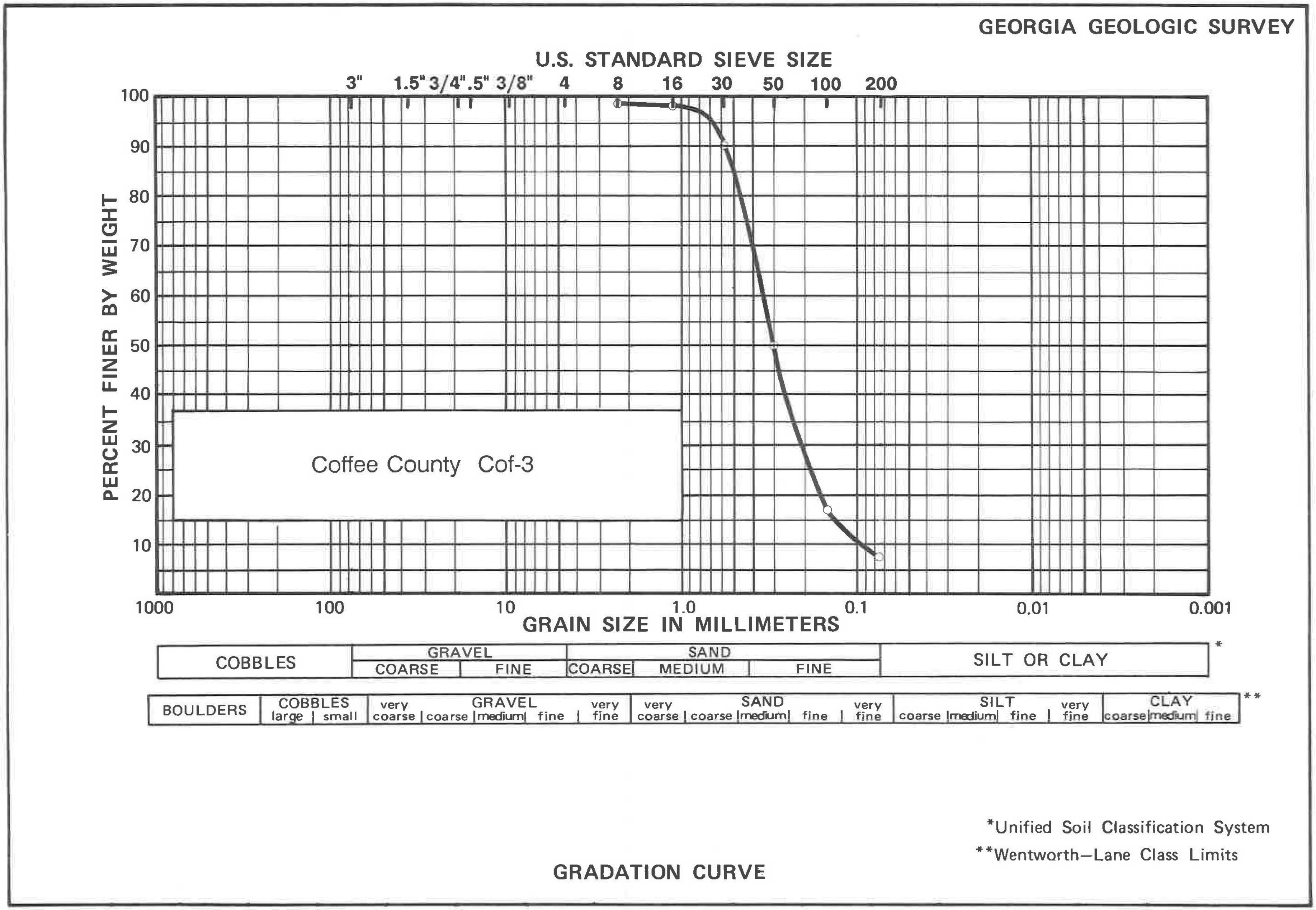


Figure 43. Size distribution curve of Sample Cof-3.

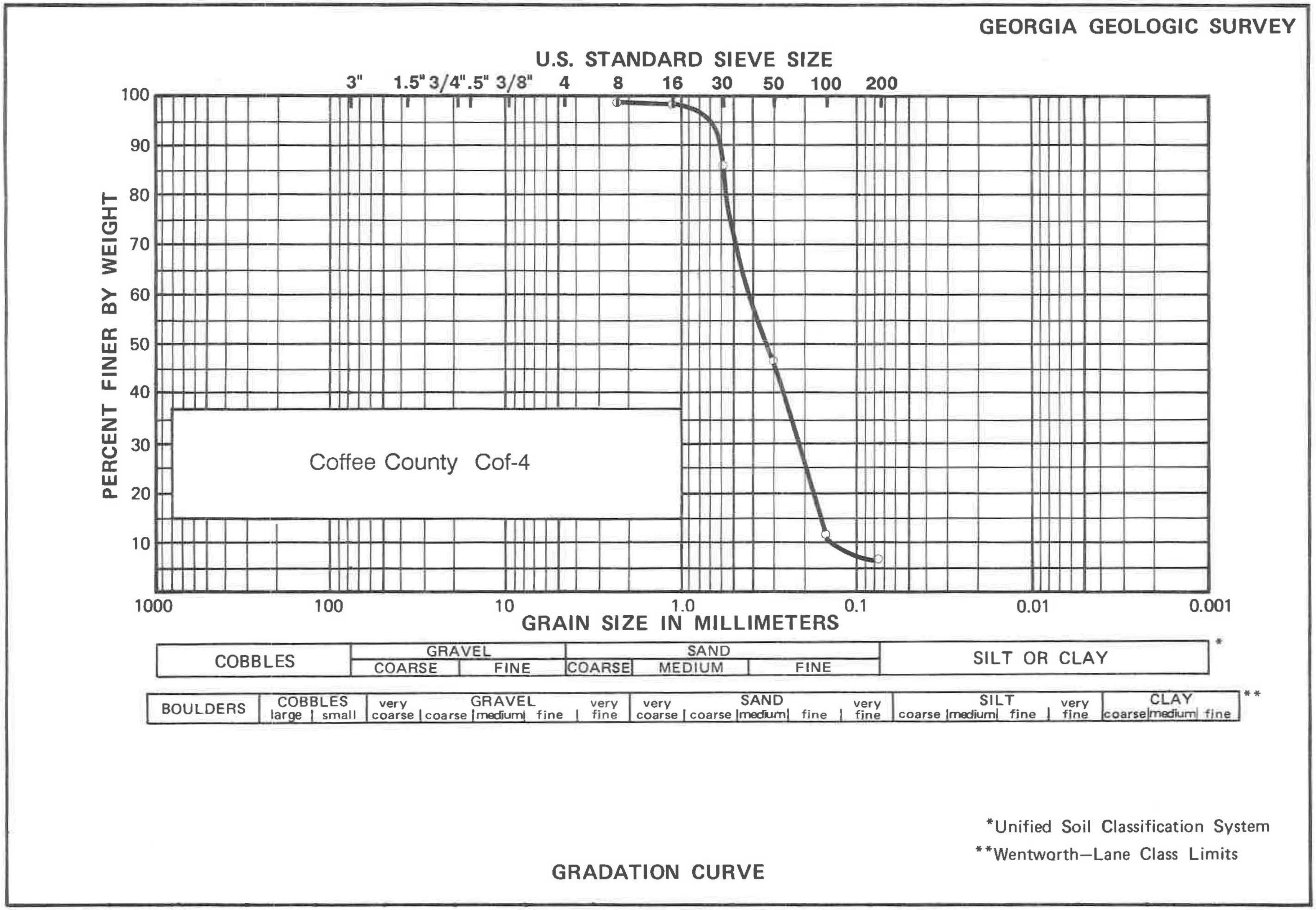


Figure 44. Size distribution curve of Sample Cof-4.

Cook County

Note: A description of the aggregate potential for that part of Cook County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 52-54).

Geology and Physiography

The surficial sediments of Cook County are derived from the Altamaha Formation and the Miccosukee Formation. Cook County lies entirely within the Tifton Upland District of the Coastal Plain Province.

Previous Study

Teas reported no significant amount or quality of sand suitable for commercial use in Cook County.

Present Study

The soil association used in targeting sites for sampling in Cook County was #39 (see p. 7) which is present at higher elevations in the county. There were no apparent geomorphic features indicative of sand or gravel deposits in Cook County. Two sites were sampled in Cook County, (Fig.45, Table 10).

Evaluation

Sample Coo-1 was taken from a preferred soil type, but it failed to meet ASTM Standard C-33, because the material is too fine-grained. Sample Coo-2 was also taken from a preferred soil type. The material marginally failed ASTM Standard C-33, but could be upgraded.

Mining Activity

There are no active or recently inactive mining operations in Cook County.

Summary Evaluation

The site represented by sample Coo-2 could be a possible source of aggregate, but the construction material potential of this part of Cook County is considered to be low.

Crisp County

Note: A description of the aggregate potential for that part of Crisp County which lies west of I-75

Table 10. Cook County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Coo-1	12'	auger	12'	2	no	0
Coo-2	8'	auger	7'	1	no[3]	2

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

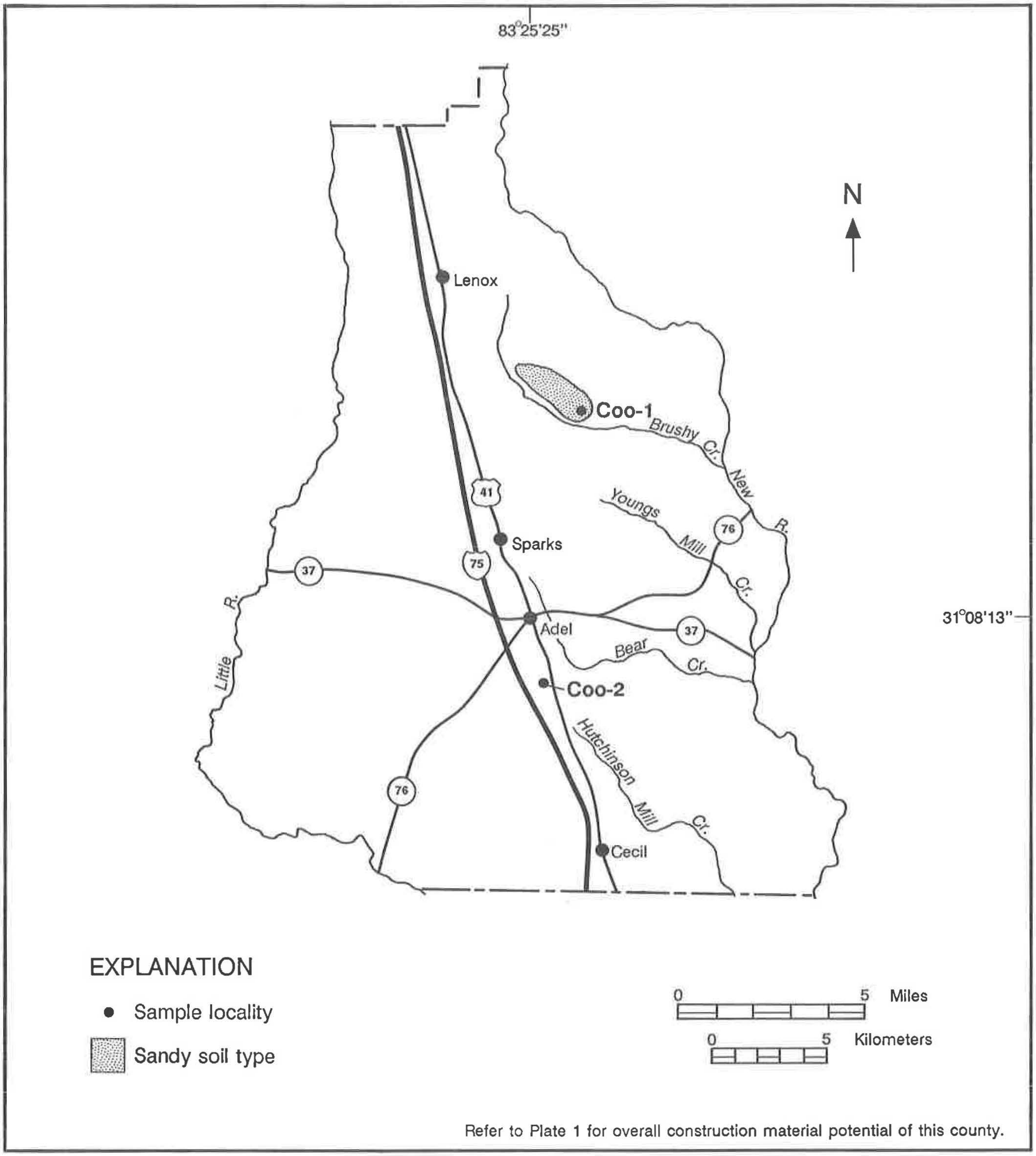


Figure 45. Cook County map.

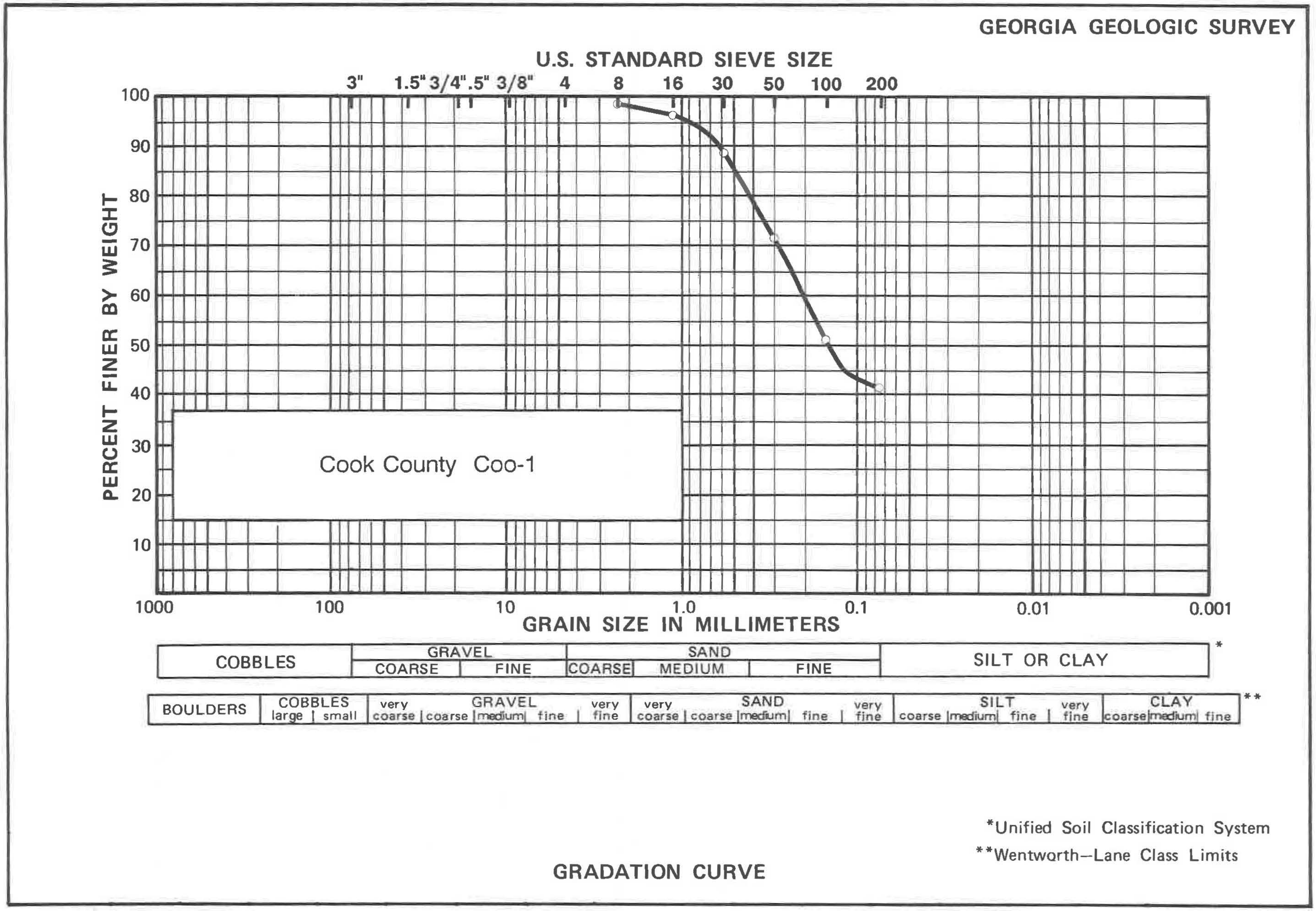


Figure 46. Size distribution curve of Sample Coo-1.

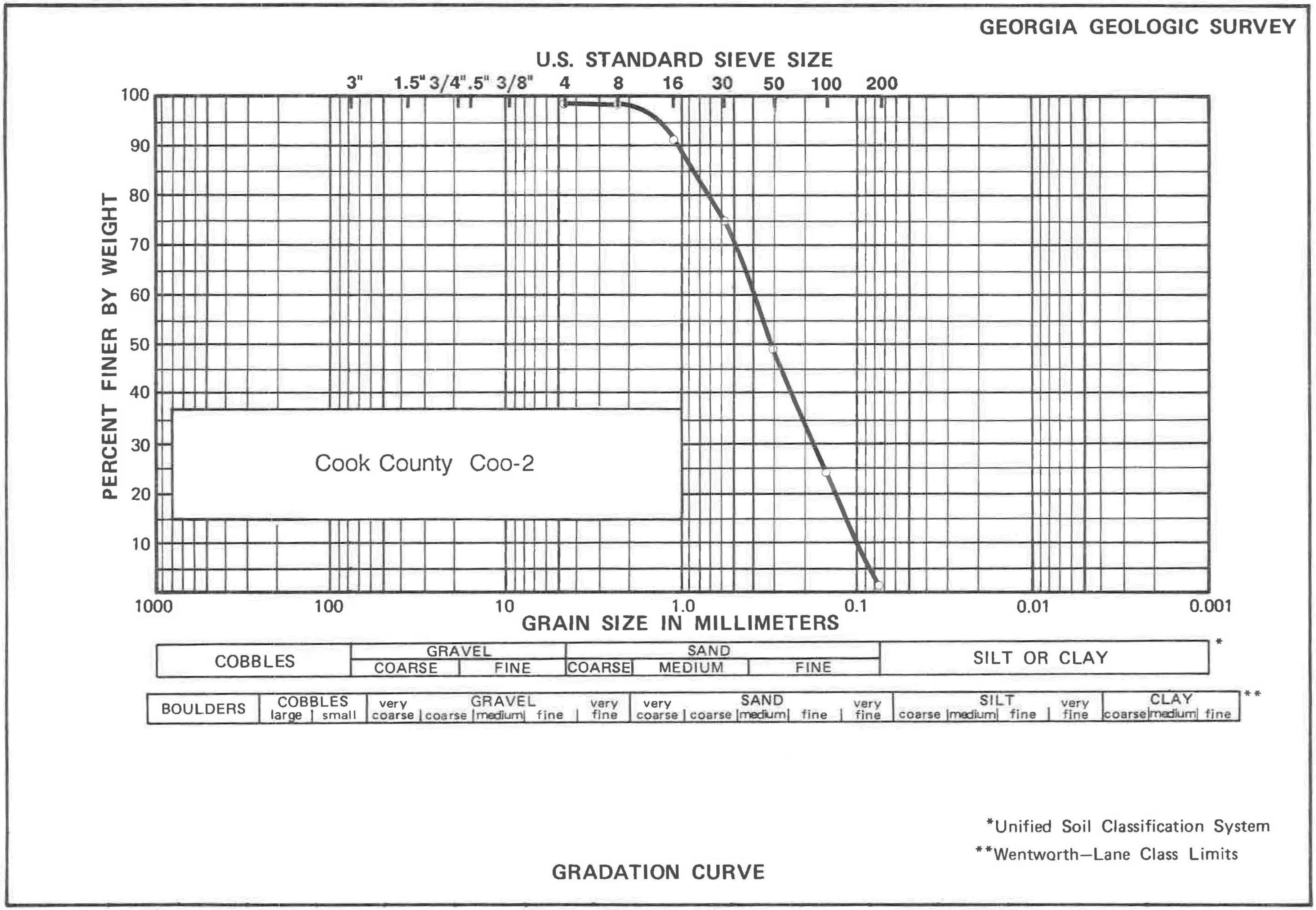


Figure 47. Size distribution curve of Sample Coo-2.

may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia : An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 64-66).

Geology and Physiography

The surficial sediments of Crisp County are derived from the Altamaha Formation and deposits of Oligocene age. Crisp County lies within the Tifton Upland District of the Coastal Plain Province.

Previous Study

Teas reported no suitable amount or quality of sand for commercial use in Crisp County.

Present Study

The soil series used for targeting sampling sites in Crisp County was Lakeland, which is present as isolated pods. There were no apparent geomorphic features indicative of sand or gravel deposits in Crisp County, and only one site was sampled for analysis (Fig.48, Table 11).

Evaluation

Sample Cri-1 was taken from a preferred soil body. The material is too fine-grained to meet ASTM Standard C-33.

Mining Activity

There are no active or recently inactive mining operations in Crisp County.

Summary Evaluation

The sample containing the coarsest grained sand is too fine-grained for use as construction aggregate. The construction aggregate potential for this part of Crisp County is considered to be low.

Dodge County

Geology and Physiography

The surficial sediments of Dodge County are derived from the Altamaha Formation and deposits of Oligocene age. Dodge County lies entirely within the Vidalia Uplands District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 189) reported fine-grained sand near Eastman (Fig.50, Ts-14) suitable for building purposes. He also reported that medium- to coarse-grained sand is found on sand bars throughout the Ocmulgee River (Teas, 1921, p. 189; Fig.50, Ts-15). Teas (1921, p. 189-190) reported an occurrence of gravel with pebbles up to two inches in diameter northwest of Eastman (Fig.50, Ts-16). This gravel had been used for building and roads. A thin gravelly deposit two miles long, near Gresston, (Fig.50, Ts-17) was reported by Teas (1921, p. 190).

Present Study

The soil association #39 (see p. 7) was used in targeting sites in Dodge County and can be found

Table 11. Crisp County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Cri-1	7'	auger	7'	1	no	0

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

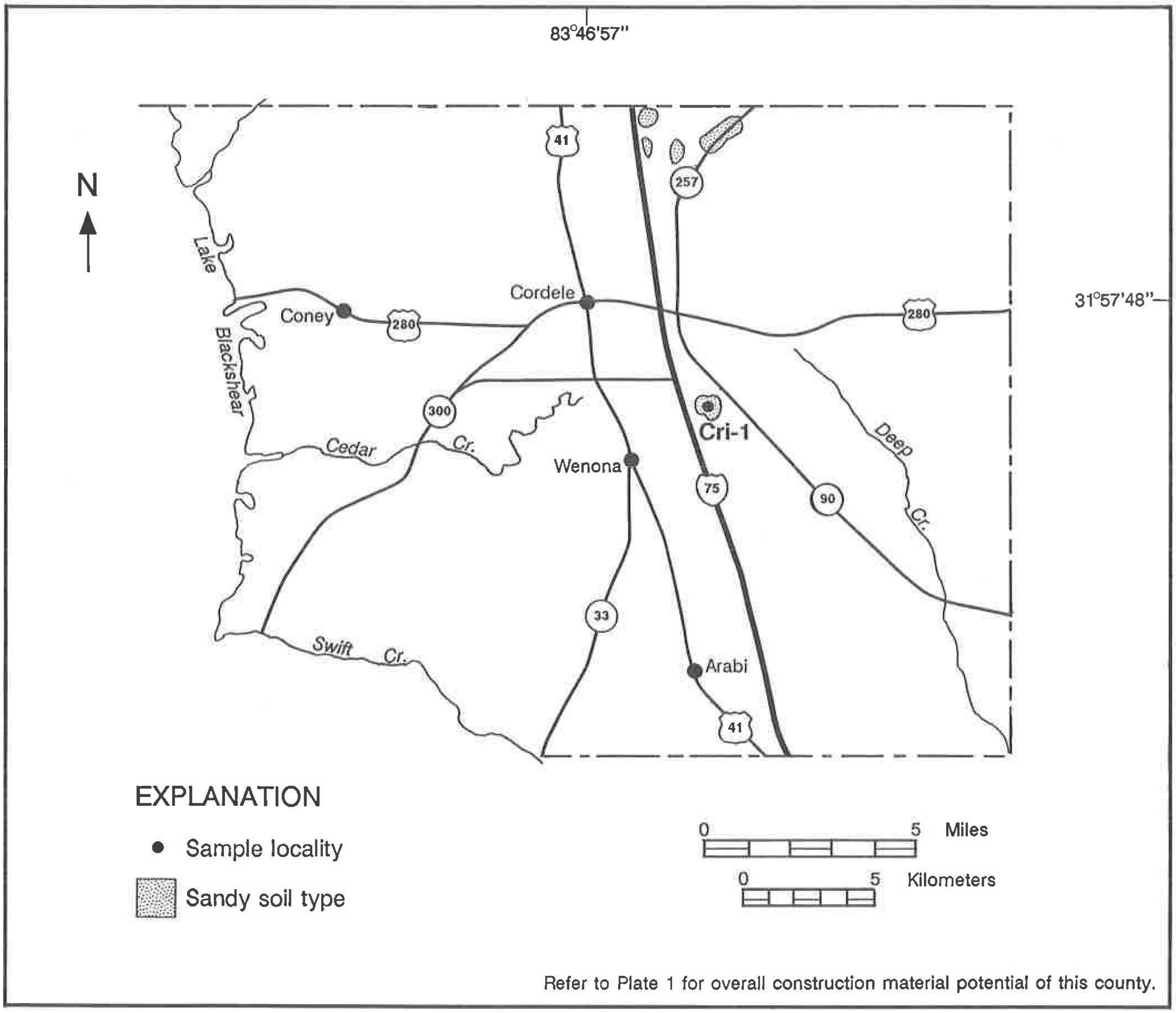


Figure 48. Crisp County map.

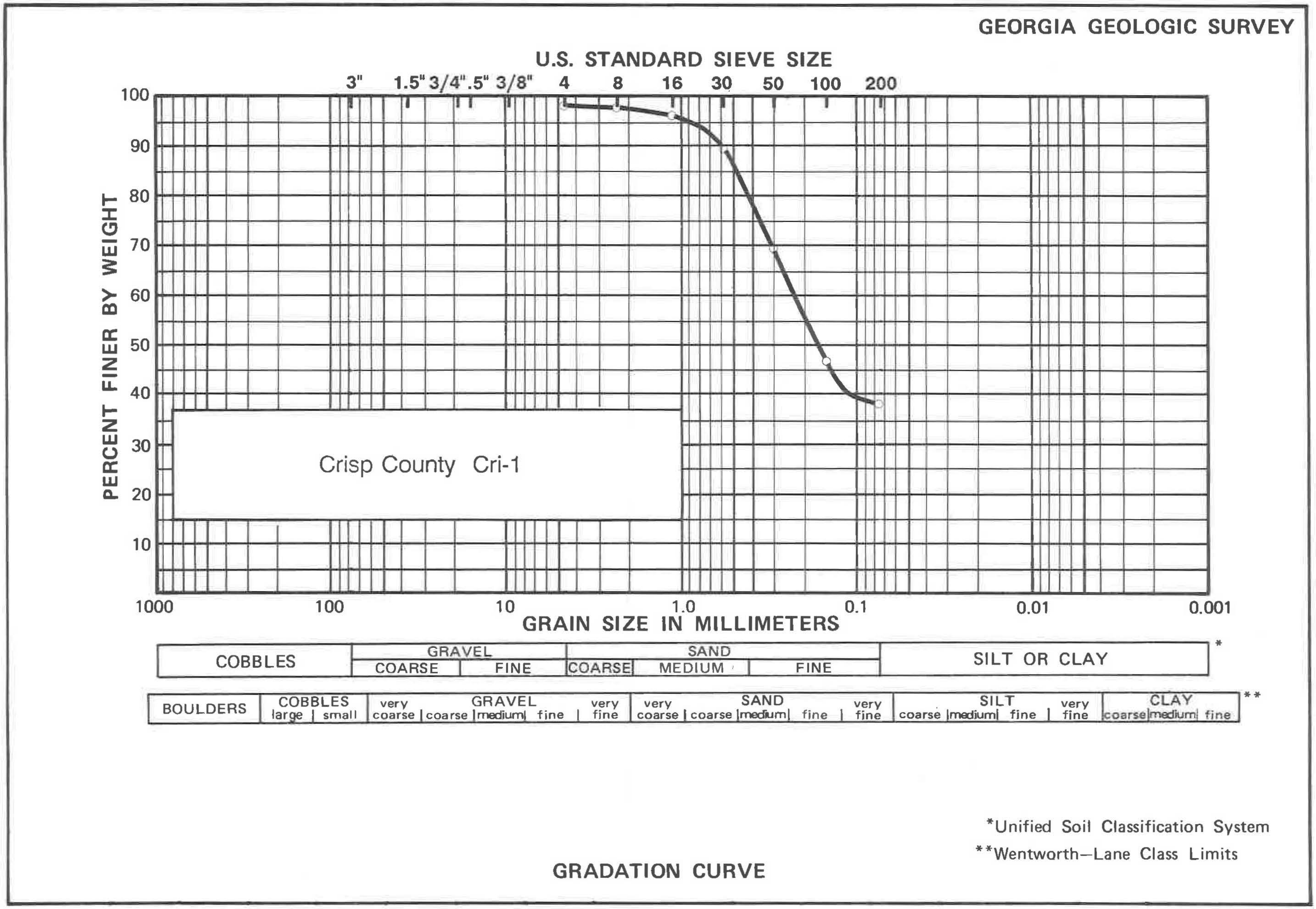


Figure 49. Size distribution curve of Sample Cri-1.

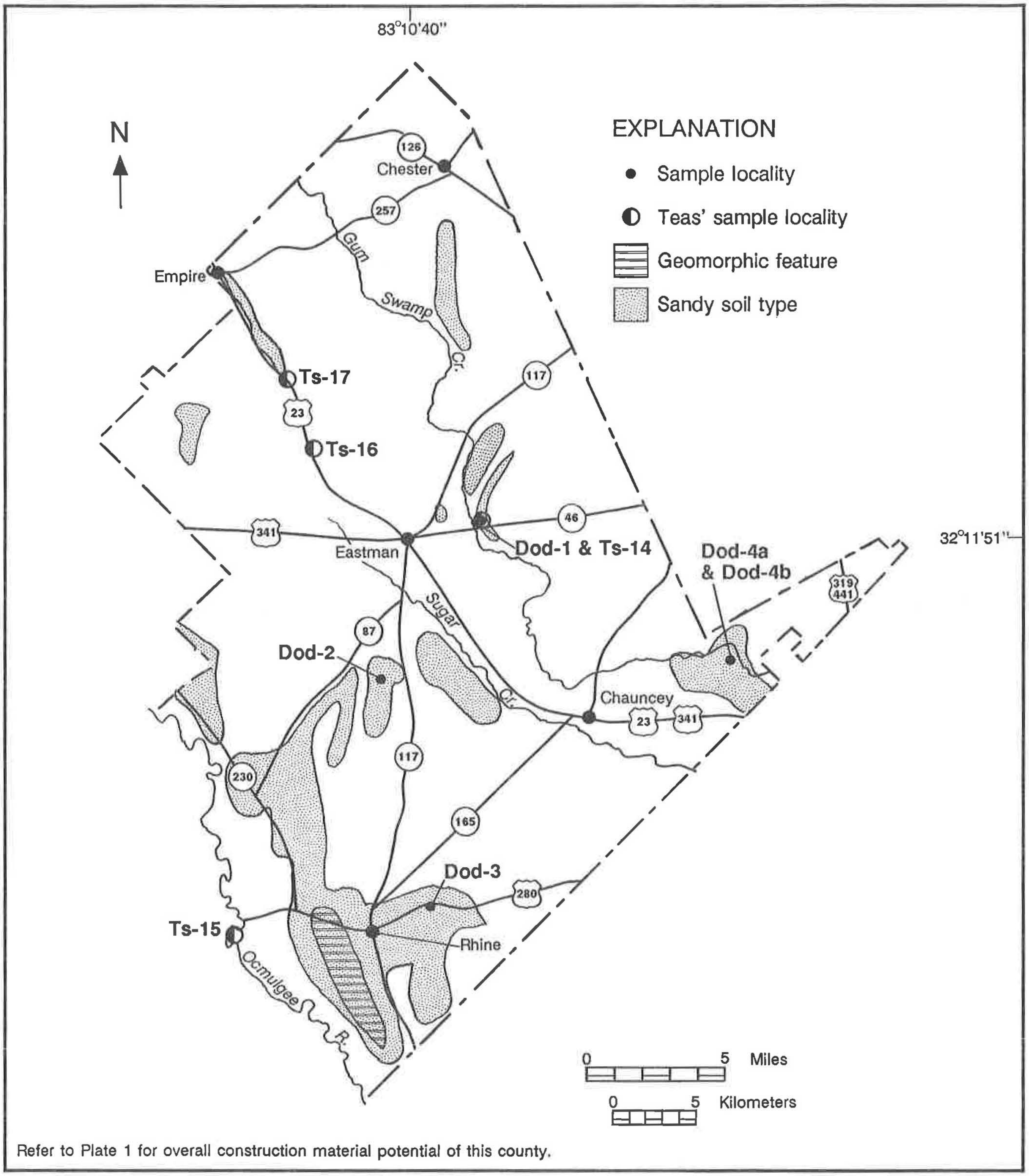


Figure 50. Dodge County map.

throughout the county. Geomorphic features targeted were the extensive sand hills found along the Ocmulgee and Little Ocmulgee Rivers. Five samples representing four sites were analyzed for aggregate potential (Fig.50, Table 12).

Evaluation

The site for sample Dod-1 was a preferred soil type and was mentioned by Teas (1921, p.189). Samples Dod-4a and 4b were taken from a preferred soil type. None of these samples met ASTM Standard C-33; however, Dod-4a represents the upper 8 feet of a 30 acre site and could be upgraded to meet standards. Samples Dod-2 and Dod-3 were also taken from preferred soil types. Dod-2 marginally failed to meet ASTM Standard C-33, but could be upgraded; and Dod-3 represents a one-foot thick gravelly layer, which could provide a small amount of fine- and coarse-grained aggregate.

Mining Activity

There are no active or recently inactive mining operations in Dodge County.

Summary Evaluation

The site represented by Dod-3 contains coarse material, but the site is too small to be of economic value. Overall, the construction material potential for Dodge County is considered to be low to moderate.

Dooly County

Note: A description of the aggregate potential for that part of Dooly County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 77-78).

Table 12. Dodge County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Dod-1	15'	trench	20'	2	no	2
Dod-2	5'	trench	5'	1	no[4]	0
Dod-3	1'	trench	1'	1	no[5]	3
Dod-4a	6'	auger	8'	1	no[5]	1
Dod-4b	2'	auger	8'	1	no	0

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[4]Contains material coarser than is required by ASTM Standard C-33.
[5]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

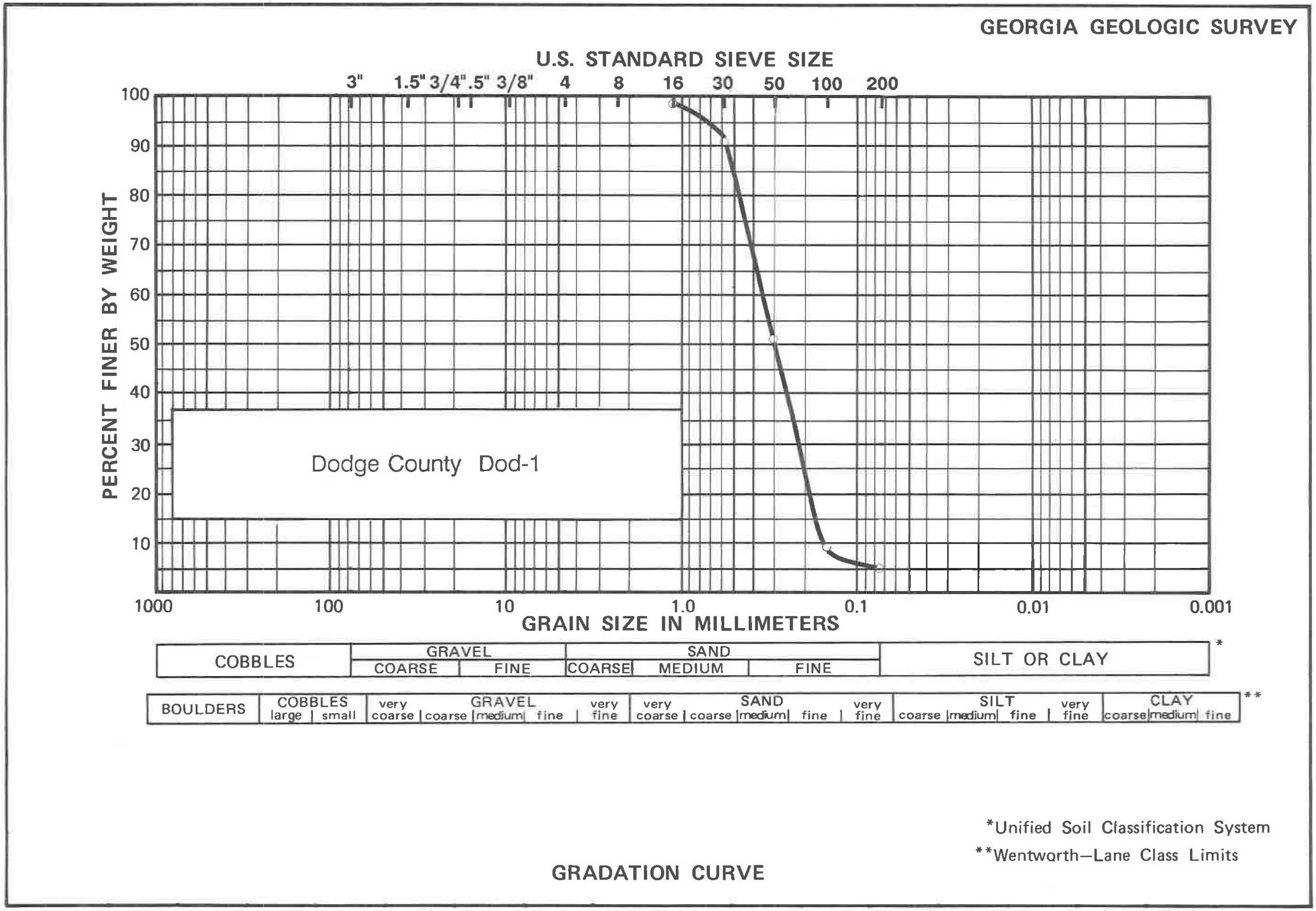


Figure 51. Size distribution curve of Sample Dod-1.

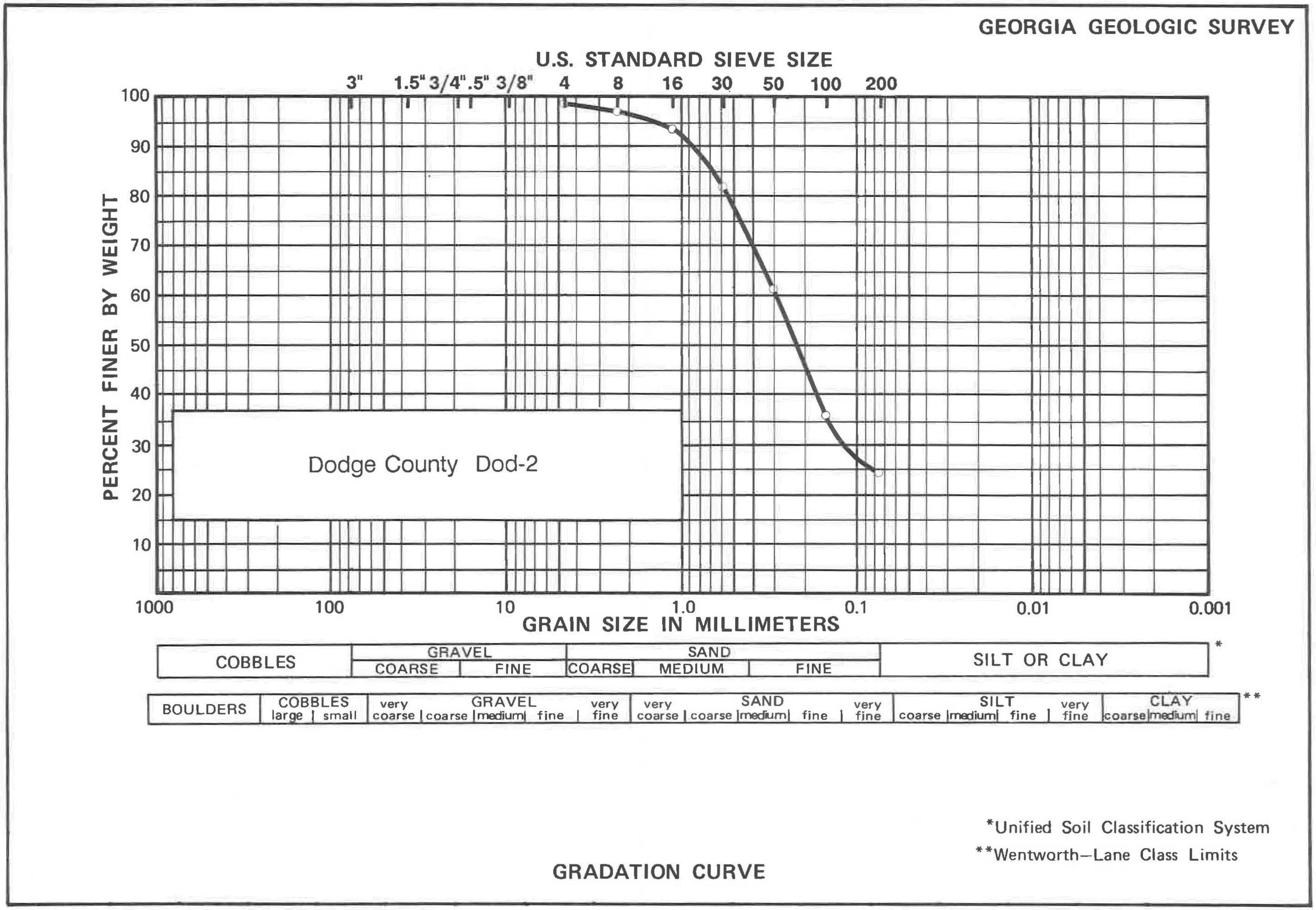


Figure 52. Size distribution curve of Sample Dod-2.

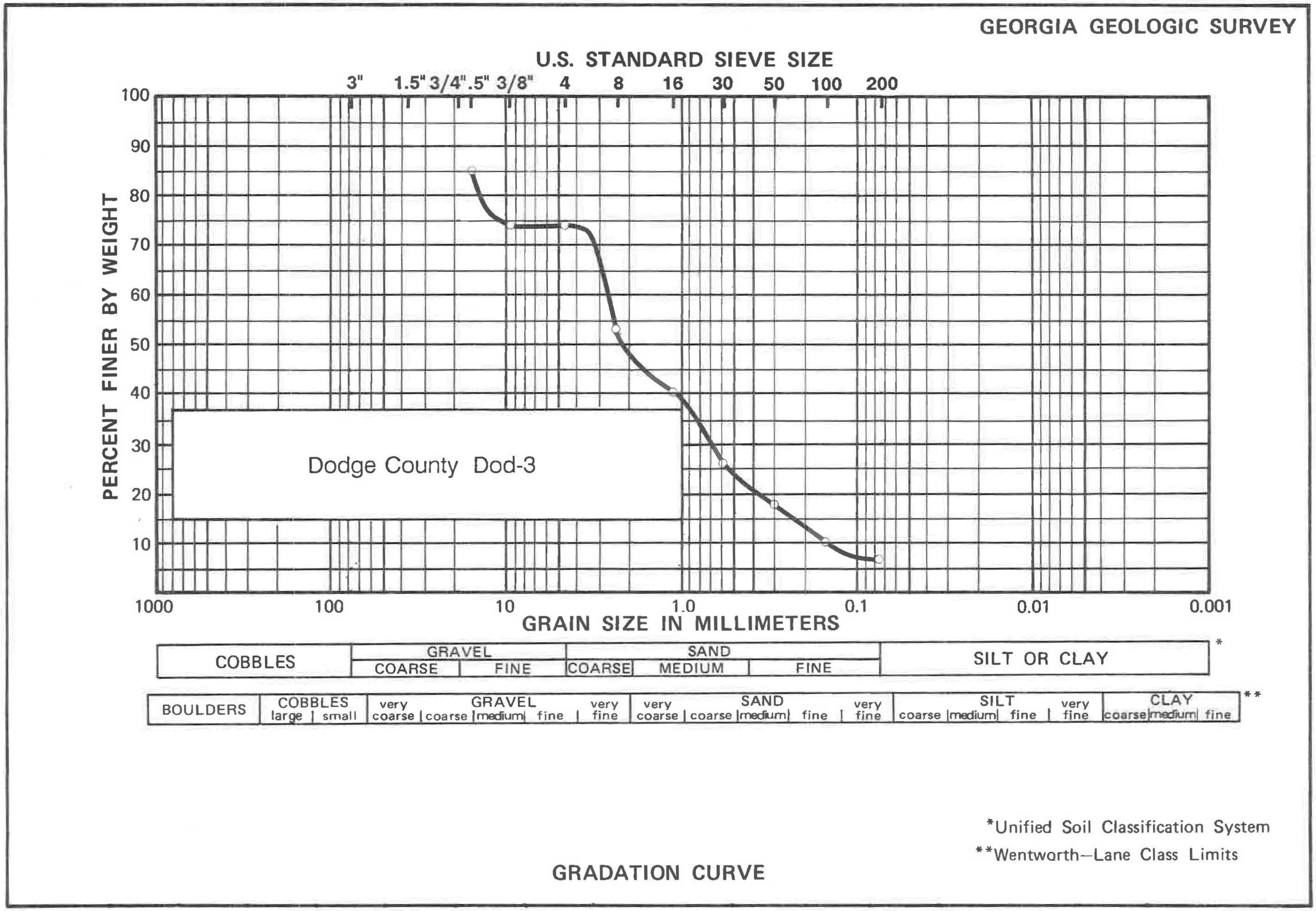


Figure 53. Size distribution curve of Sample Dod-3.

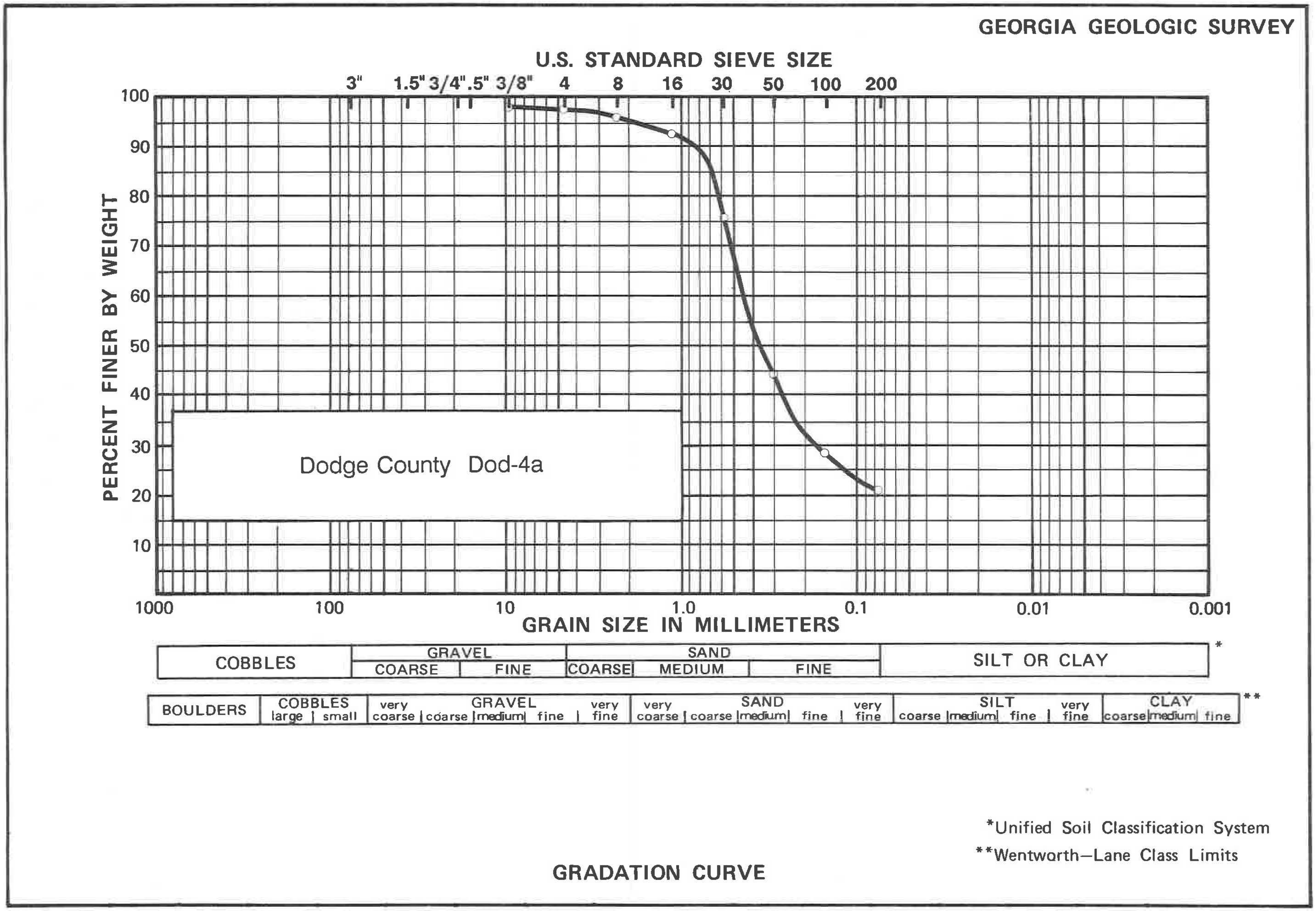


Figure 54. Size distribution curve of Sample Dod-4a.

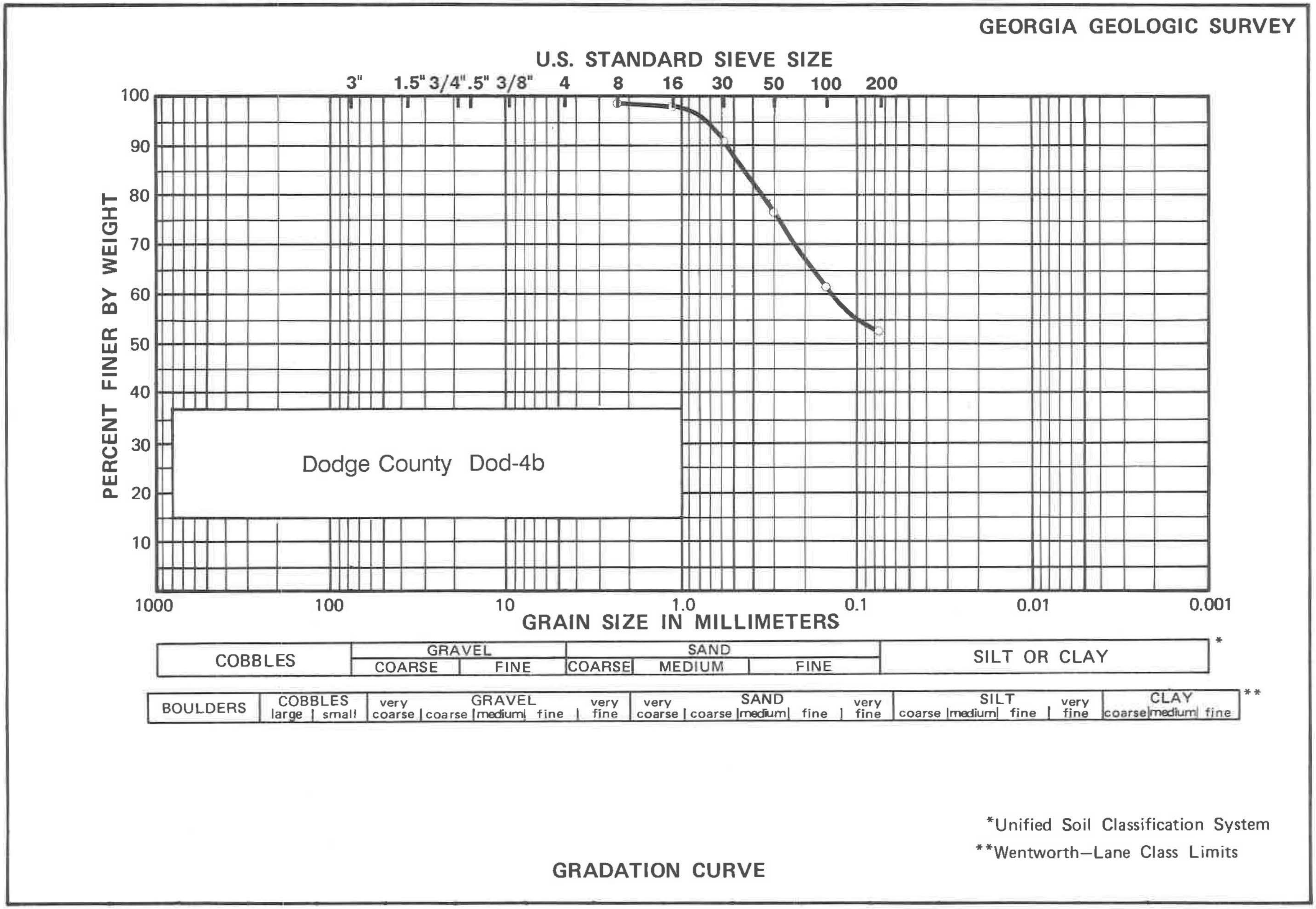


Figure 55. Size distribution curve of Sample Dod-4b.

Geology and Physiography

The surficial sediments found in Dooly County are composed primarily of deposits of Oligocene age, and secondarily by deposits of the Altamaha Formation. Dooly County lies within the Fall Line Hills and Tifton Upland Districts of the Coastal Plain Province.

Previous Study

Teas reported no sand or gravel suitable for aggregate in Dooly County.

Present Study

No soil type or geomorphic feature indicative of sand or gravel deposits was found in Dooly County.

Mining Activity

There are no active or recently inactive mining operations in Dooly County.

Summary Evaluation

There were no favorable areas in Dooly County from which to select a site for sampling, therefore, no analyses were done. The construction material potential for Dooly County is considered to be low.

Echols County

Geology and Physiography

The surficial sediments of Echols County are composed of the Hawthorne Group and the Miccosukee Formation. Echols County lies within the Tifton Upland and the Okefenokee Basin Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 195-196) noted the presence of large sand dunes at Statenville (Fig.56, Ts-18). These dunes are composed of 2 to 3 feet of coarse-grained sand overlain by 8 feet of fine-grained sand.

Present Study

The soil association used in targeting sites for sampling in Echols County was #24 (see p. 7) which is present along the Alapaha River. This overlaps the large sand hills along the Alapaha River, targeted as geomorphic features. Five samples rep-

Table 13. Echols County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Ech-1	8'	auger	8'	2	no	2
Ech-2a	16'	auger	19.5'	3	no	2
Ech-2b	4'	auger	19.5'	3	no[3]	2
Ech-3	12'	auger	12'	1	no[3]	2
Ech-4	12'	auger	11'	3	no	0

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

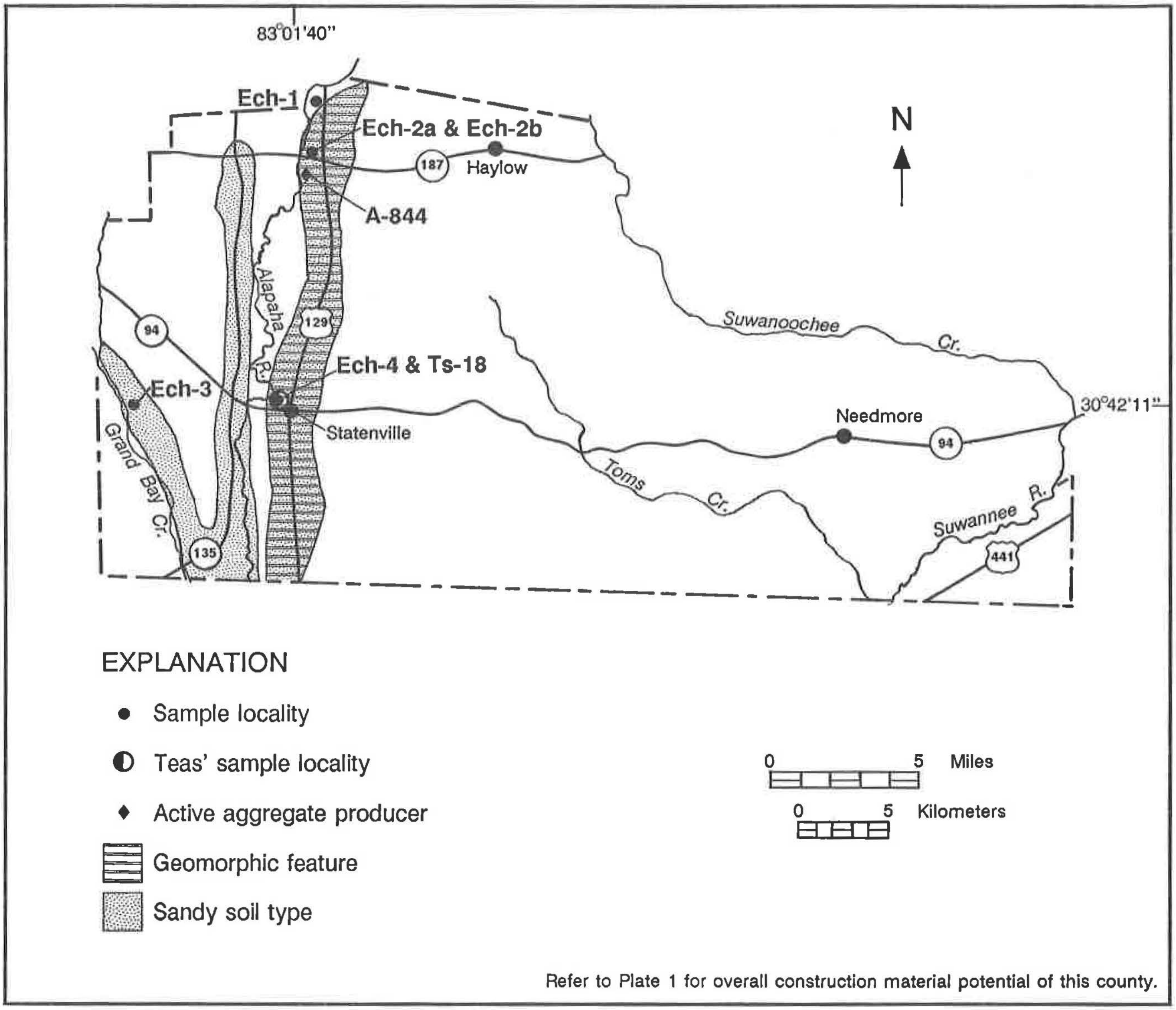


Figure 56. Echols County map.

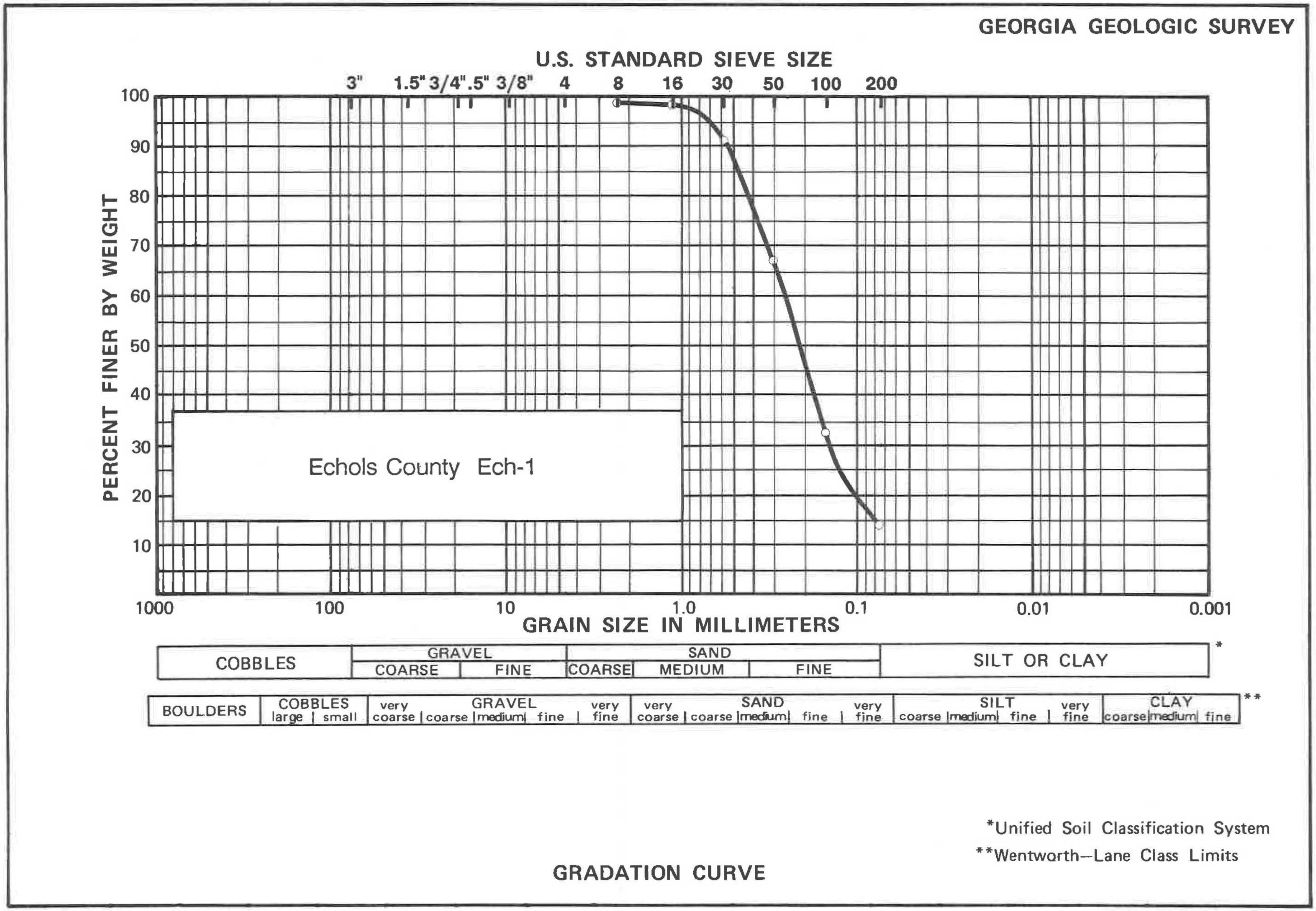


Figure 57. Size distribution curve of Sample Ech-1.

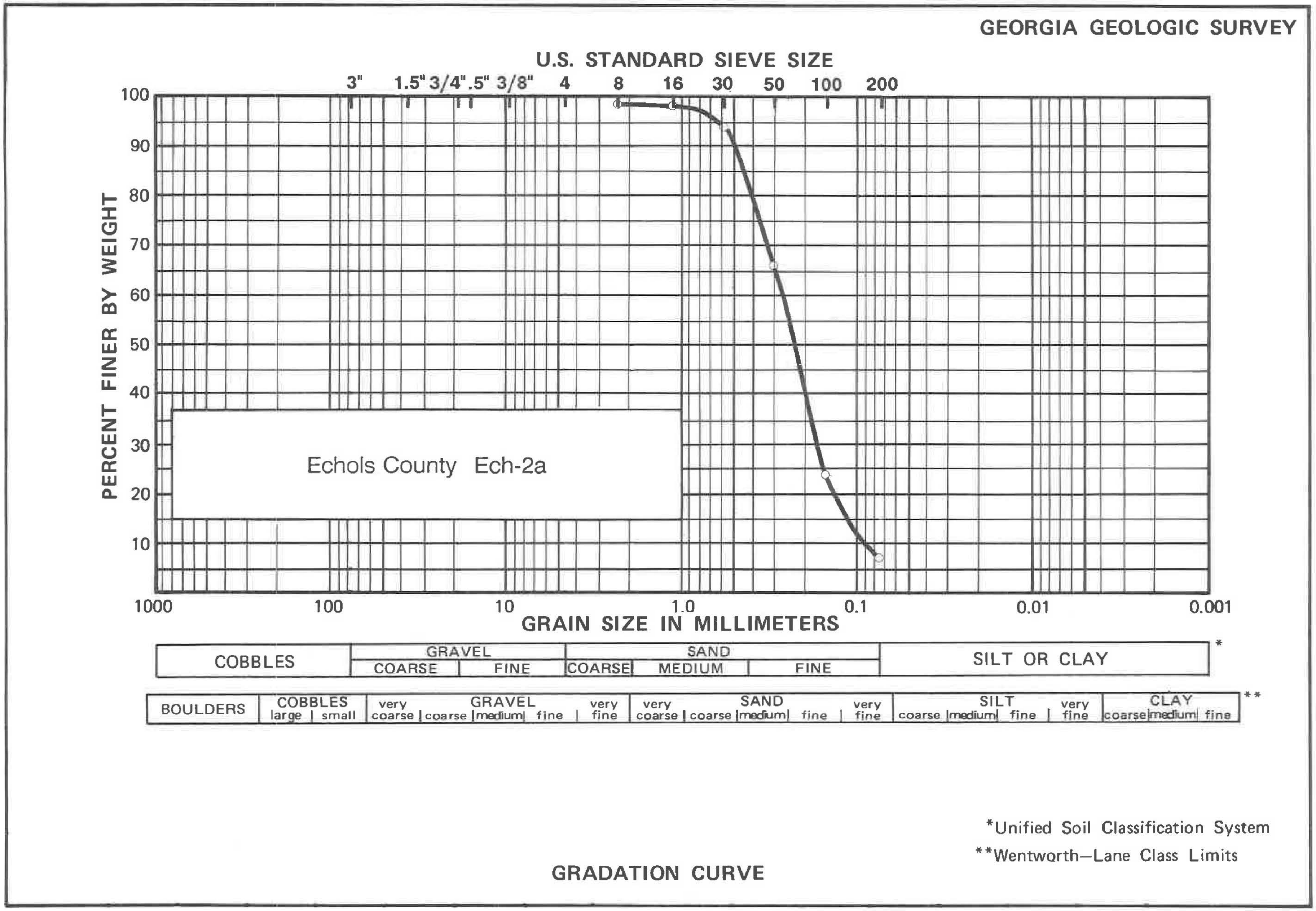


Figure 58. Size distribution curve of Sample Ech-2a.

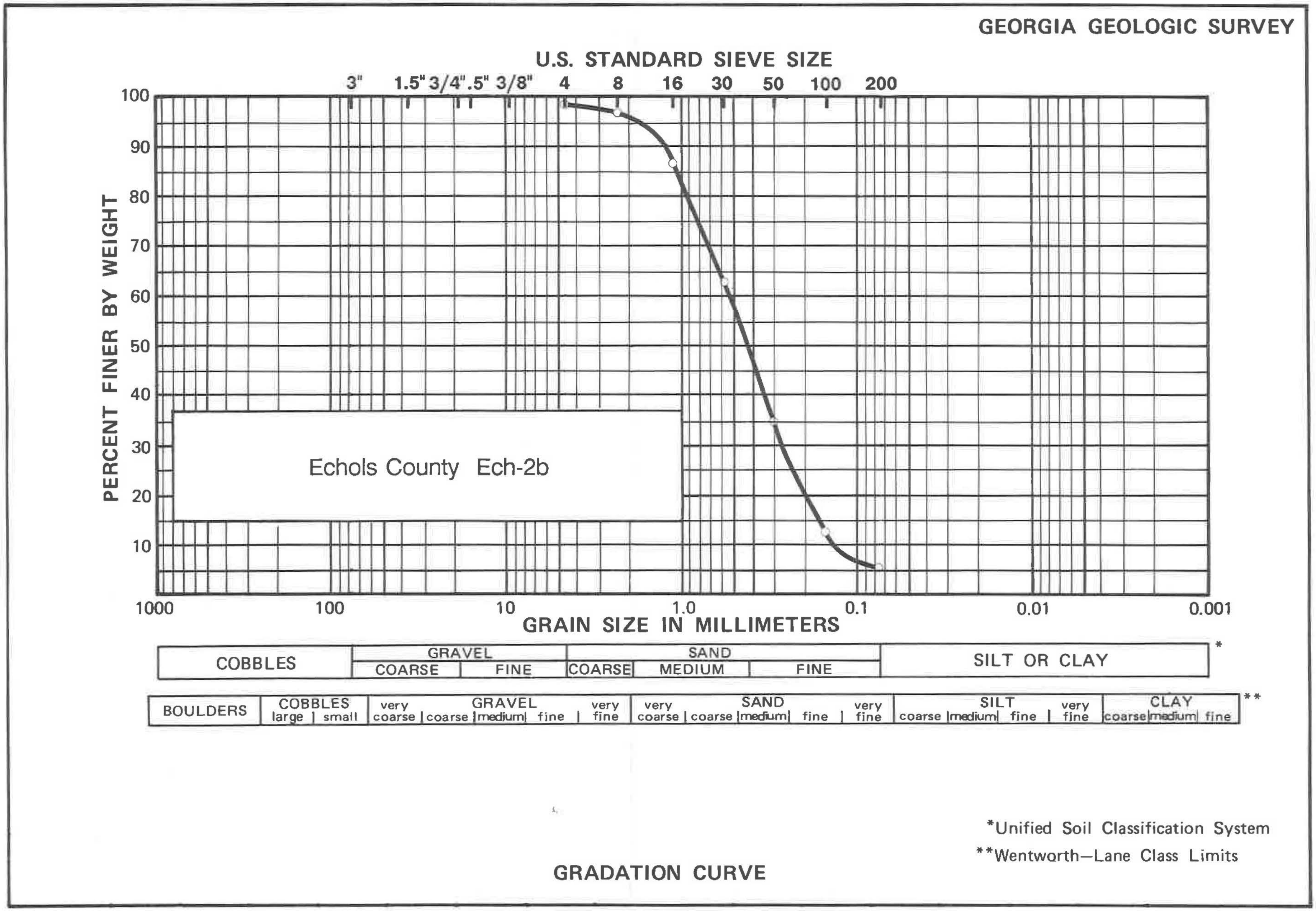


Figure 59. Size distribution curve of Sample Ech-2b.

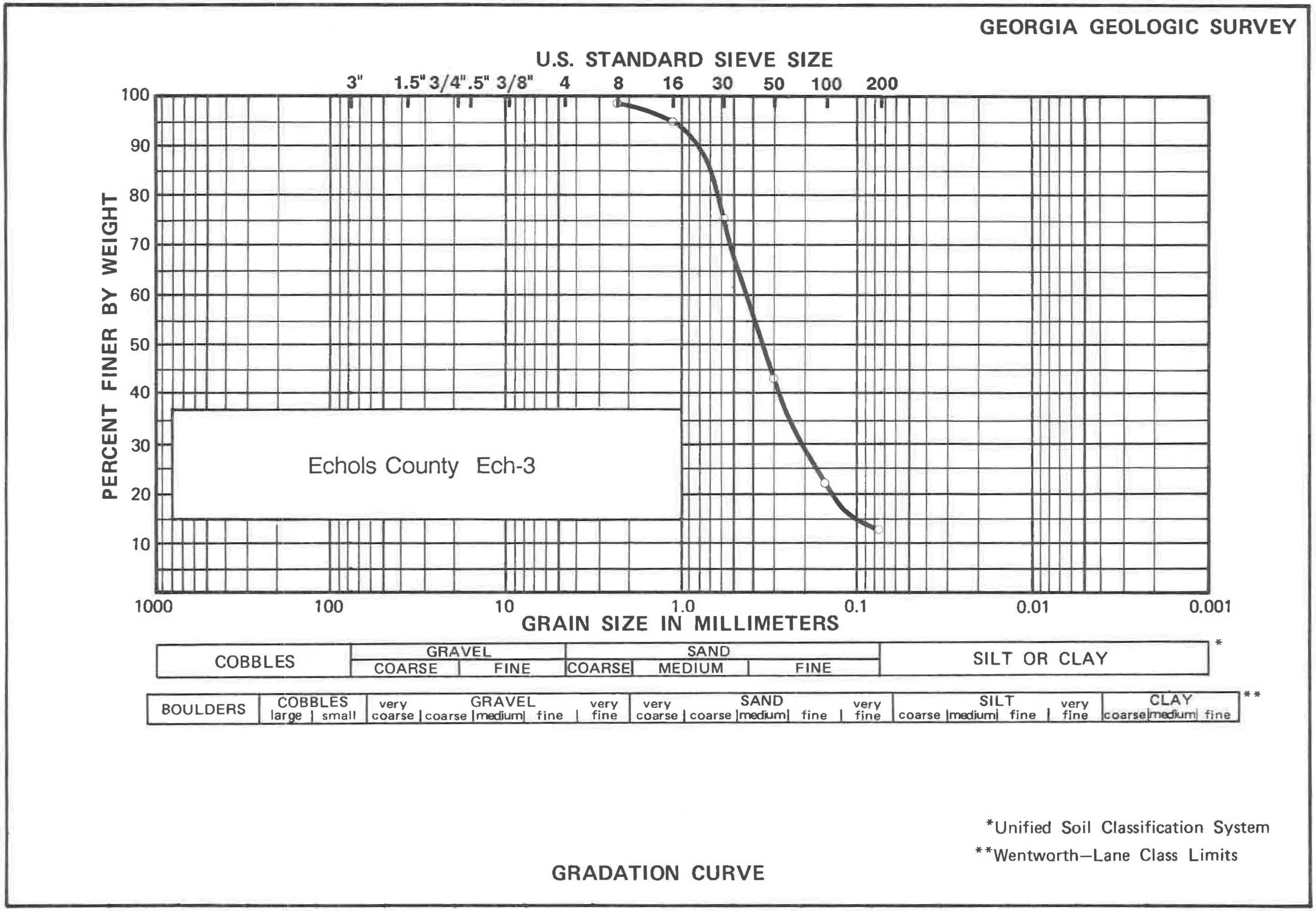


Figure 60. Size distribution curve of Sample Ech-3.

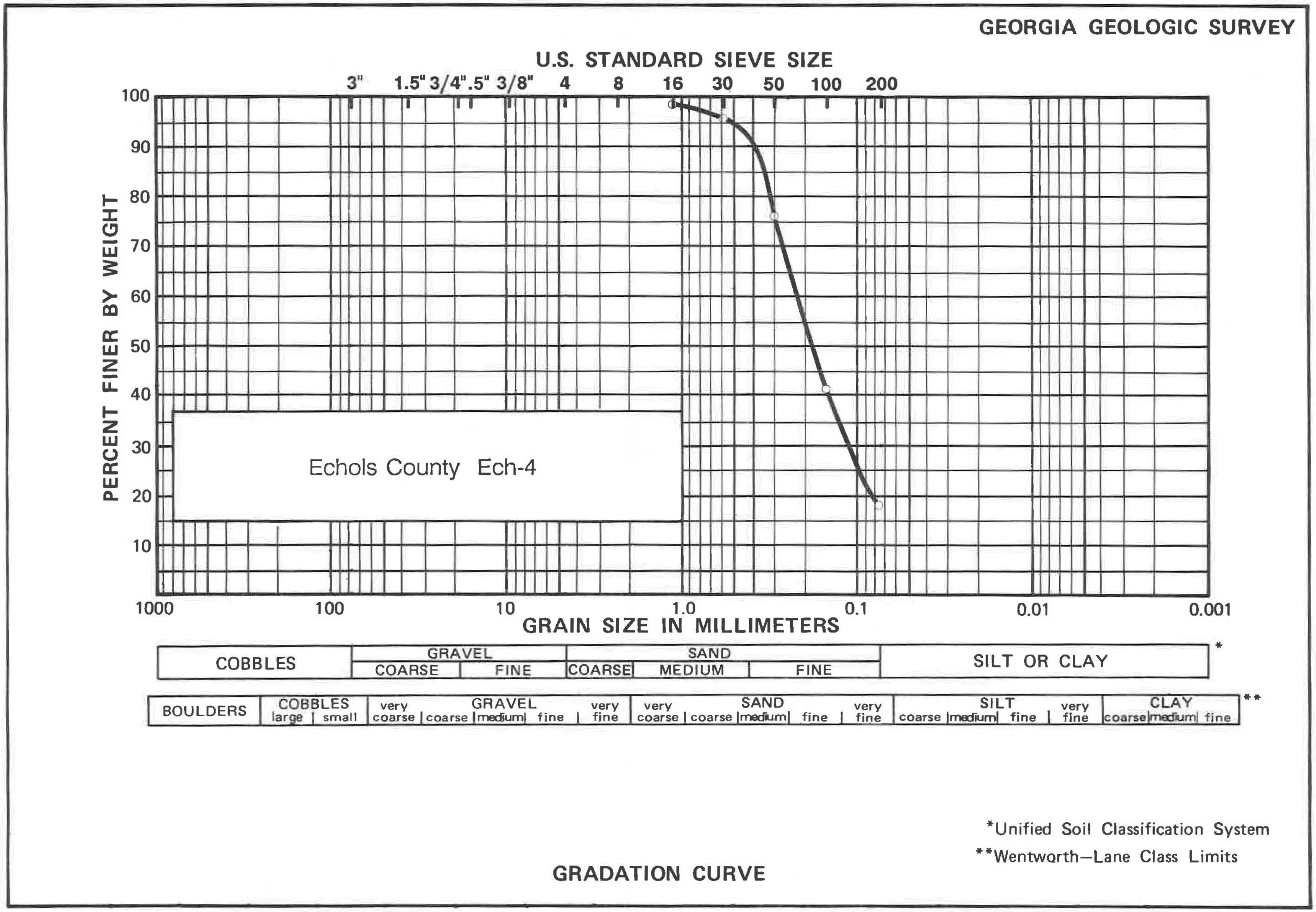


Figure 61. Size distribution curve of Sample Ech-4.

resenting four sites were analyzed for construction aggregate in Echols County (Fig.56, Table 13).

Evaluation

Sample Ech-1 represents a site within a favorable geomorphic feature. Sample Ech-4 represents a site within a favorable soil body and geomorphic feature. Sample Ech-2a represents the upper sixteen feet of a twenty foot sample from a site within a favorable soil type. These samples are too well-sorted for use as construction aggregate, and failed ASTM Standard C-33. However, sample Ech-2b, which represents the lower four feet of sample Ech-2a, is comprised of coarse-grained sand and marginally failed ASTM Standard C-33. Sample Ech-3 represents a site within a favorable soil body, and marginally failed ASTM Standard C-33, and can be upgraded.

Mining Activity

There is one active aggregate operation in Echols County. Rountree Construction operates a two acre pit in a forty acre tract. They mine approximately 10,000 tons per year by way of backhoe and dredge. This material is transported by truck to the Valdosta and Lowndes County areas.

Summary Evaluation

The site represented by samples Ech-2a and Ech-2b could be exploited for construction material, but the sixteen feet of overburden represented by sample Ech-2a would probably make this site unprofitable. The 5 acre, 12-foot thick deposit represented by sample Ech-3 could be a source of aggregate. This deposit could provide as much as 129,000 tons of material, before upgrading. Considering these two sites, and the presence of an active aggregate operation, the construction material potential for Echols County is considered to be moderate to high.

Hancock County

Geology and Physiography

The surficial sediments of Hancock County are derived from the crystalline rocks of the Piedmont Province and the Barnwell Formation. Most of Hancock County lies outside the study area in the Piedmont Province, but the southern section of the county lies within the Fall Line Hills District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 203) reported sand and pebble layers within clay near Carr's Station in Hancock County (Fig.62, Ts-19).

Present Study

The soil association used in targeting sites for sampling in Hancock County was #24 (see p. 7), which is present sporadically throughout the

Table 14. Hancock County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Han-1	8'	auger	8'	2	no[2]	2
Han-2	5'	auger	5'	1	no[2]	1
Han-3	8'	auger	8'	1	no[2]	3
Han-4	6'	auger	6'	2	no	0

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[2]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

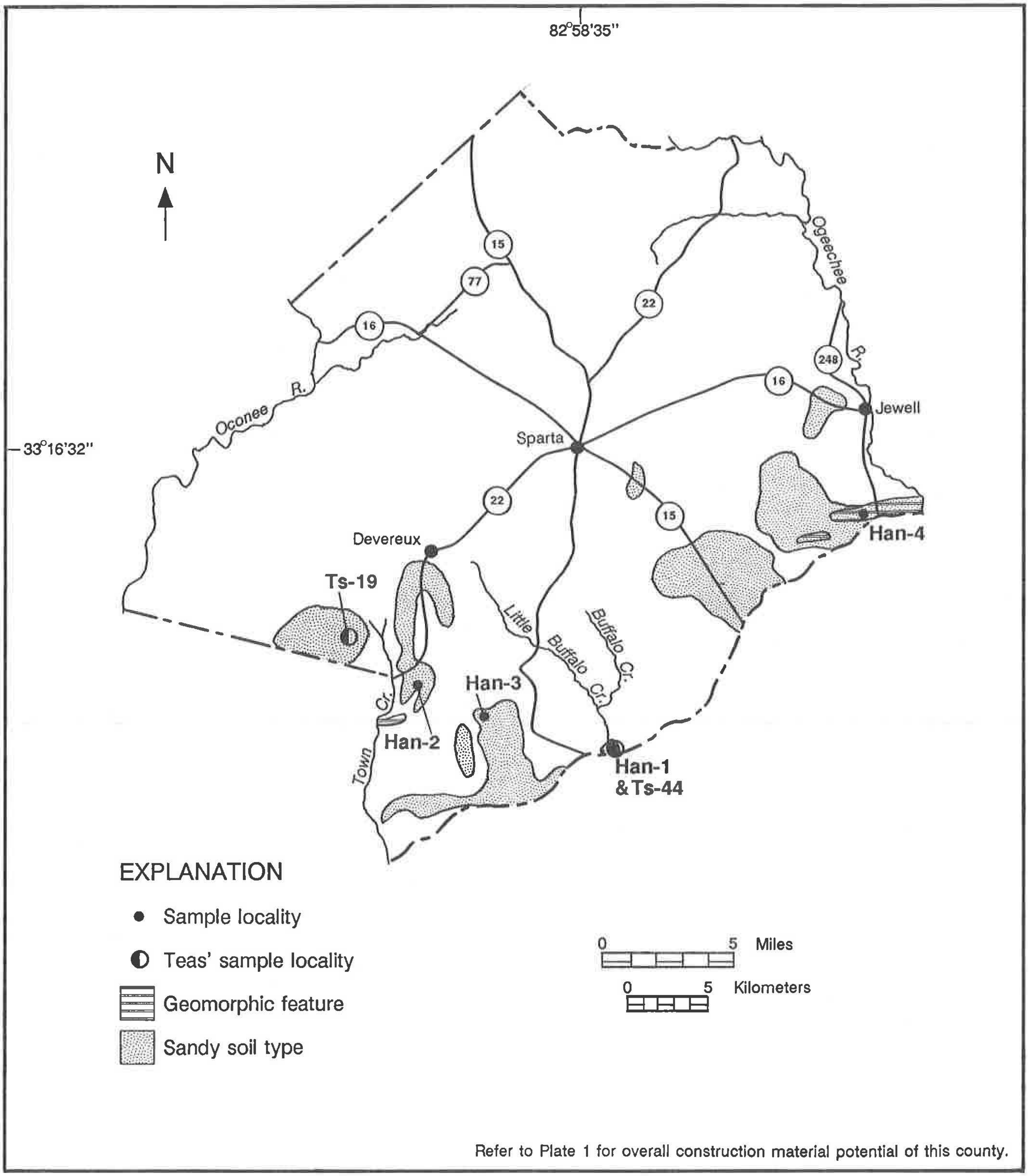


Figure 62. Hancock County map.

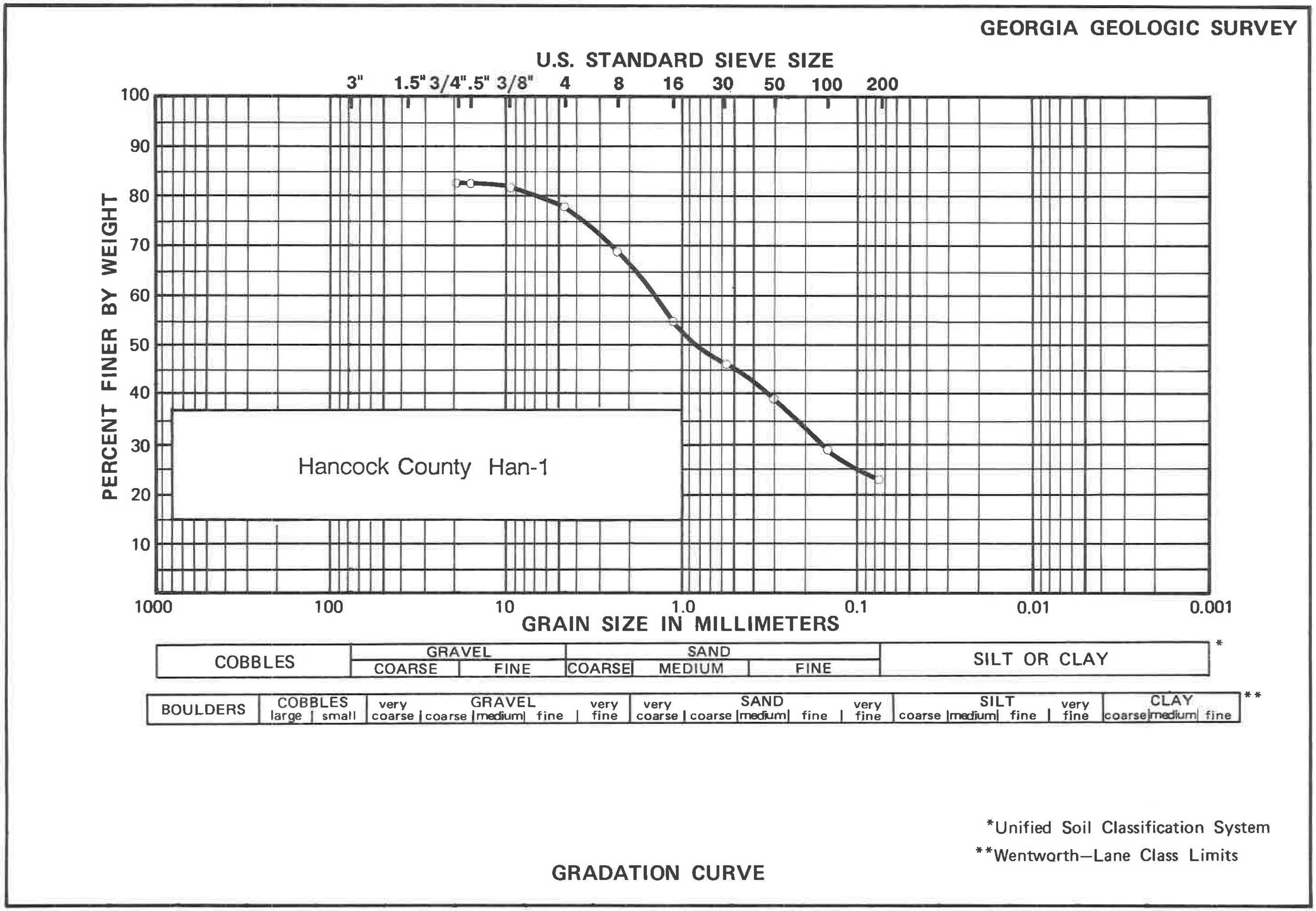


Figure 63. Size distribution curve of Sample Han-1.

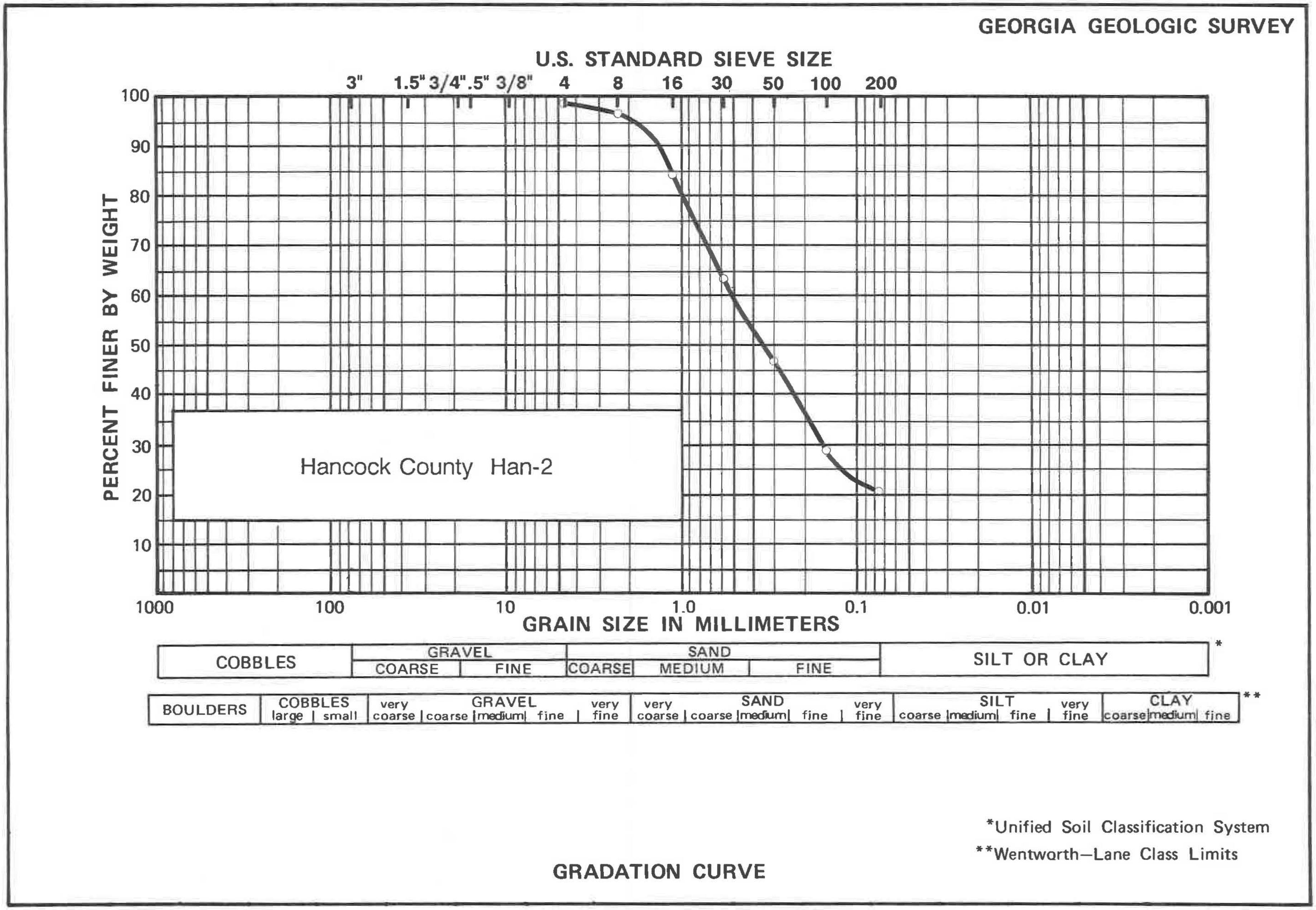


Figure 64. Size distribution curve of Sample Han-2.

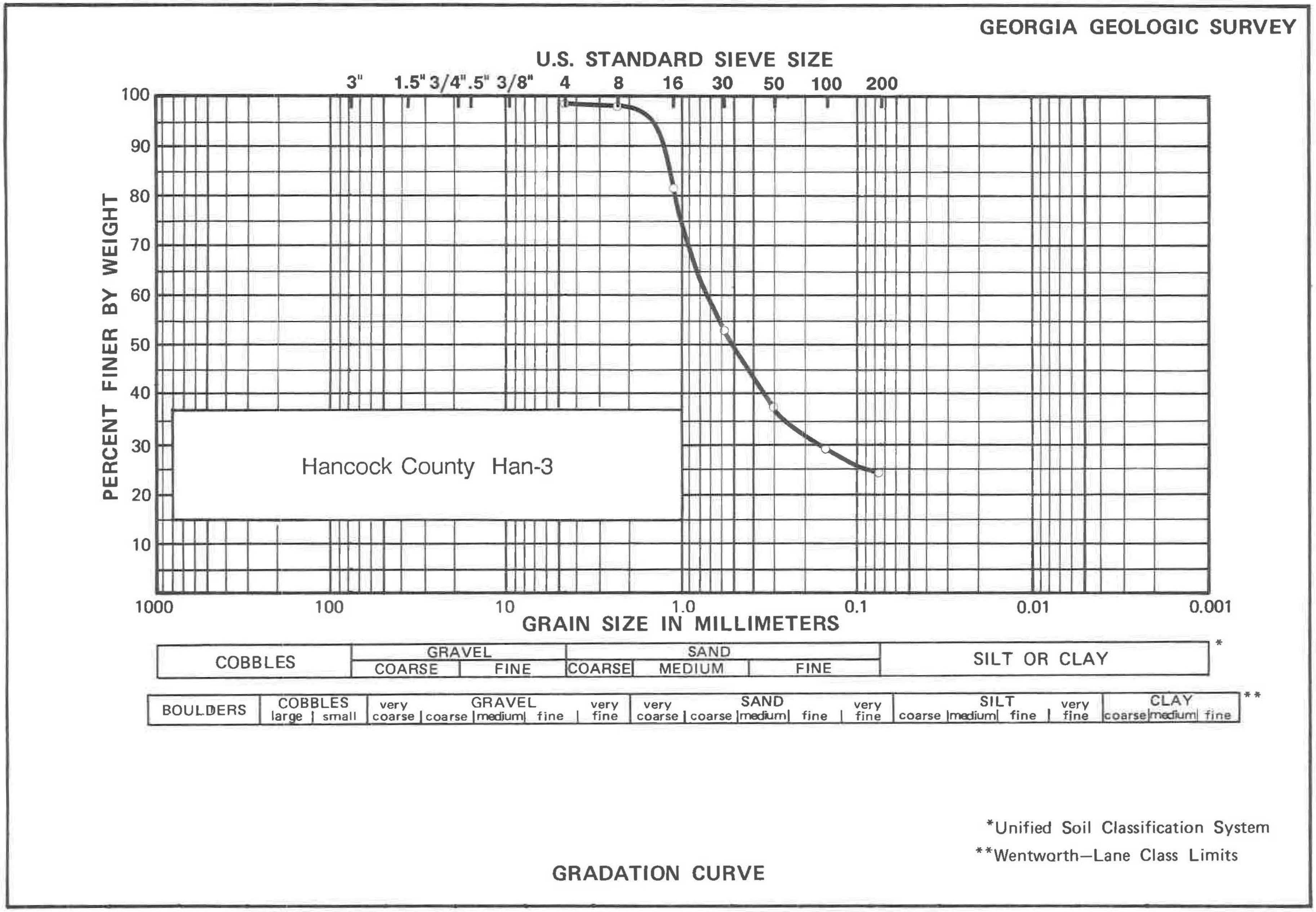


Figure 65. Size distribution curve of Sample Han-3.

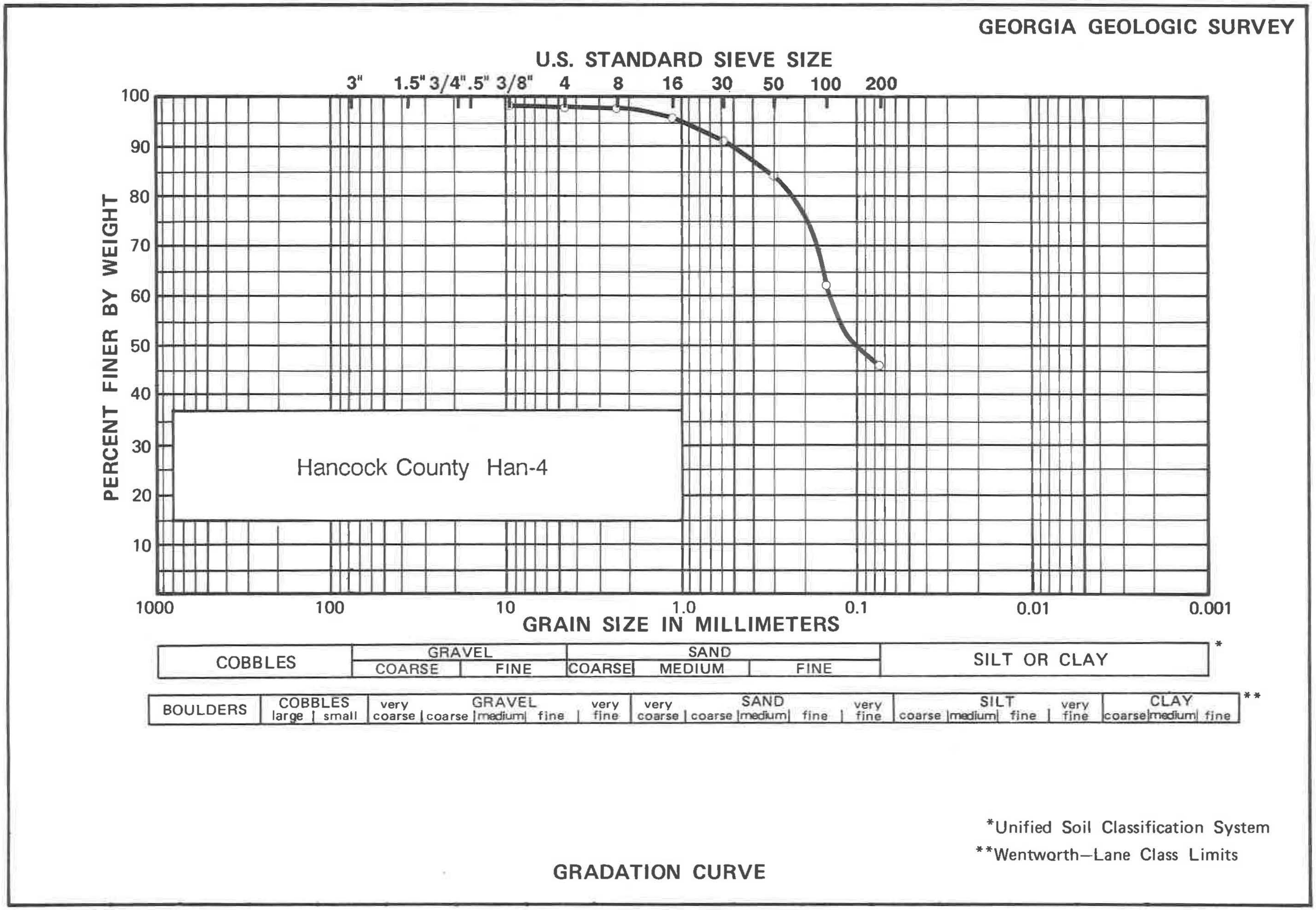


Figure 66. Size distribution curve of Sample Han-4.

county, remotely associated with various creeks. The geomorphic feature noted was a possible terrace near Town Creek. Four sites were sampled for analysis of construction aggregate in Hancock County (Fig.62, Table 14).

Evaluation

Sample Han-4 represents a preferred soil type. This sample failed to meet ASTM Standard C-33; the material is too fine-grained for use as construction aggregate. Sample Han-1 was taken at a favorable soil body; and at a locality mentioned by Teas (1921, Fig.62, Ts-44). Sample Han-2 was taken from a preferred soil type. Sample Han-3 was taken from a site that was an abandoned pit, and also, is a favorable soil type. These samples all contain coarse-grained material. All four samples marginally failed ASTM Standard C-33 but could be upgraded.

Mining Activity

With the exception of one abandoned pit for which no information is available, there are no active or recently inactive aggregate operations in Hancock County.

Summary Evaluation

The site represented by sample Han-1 is 5 acres in extent, approximately 8 feet thick, and contains coarse-grained material. Sample Han-2 represents a 5 acre site, with coarse-grained sand and gravel at least 4 feet in thickness. Sample Han-3 represents a 10 acre, abandoned sand pit. The deposit extended to a depth of 8 feet. These three sites could be sources for construction aggregate in Hancock County, possibly providing 87,000 tons; 42,000 tons; and 174,000 tons of material, respectively, before upgrading. The construction material potential for Hancock County is considered to be moderate to high.

Houston County

Note: A description of the aggregate potential for that part of Houston County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 99-103).

Geology and Physiography

The surficial sediments of Houston County are derived from the Barnwell Group and the Marshallville Formation. Houston County lies within the Fort Valley Plateau and the Fall Line Hills Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 204) reported a sand deposit approximately 5 acres in extent near Perry (Fig.67,

Table 15. Houston County Sample Data

Sample designation	Depth[1]	Sample type	Minimum thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Hou-1	13'	trench	13'	2	no	0
Hou-2	12'	trench	12'	2	no[3]	2
Hou-3	12'	auger	12'	2	no	1
Hou-4	7'	auger	7'	2	no	0
Hou-5	8'	trench	8'	2	no	1
Hou-6	20'	trench	20'	0	no	0

[1]For trench samples, this figure is the vertical length of the trench.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

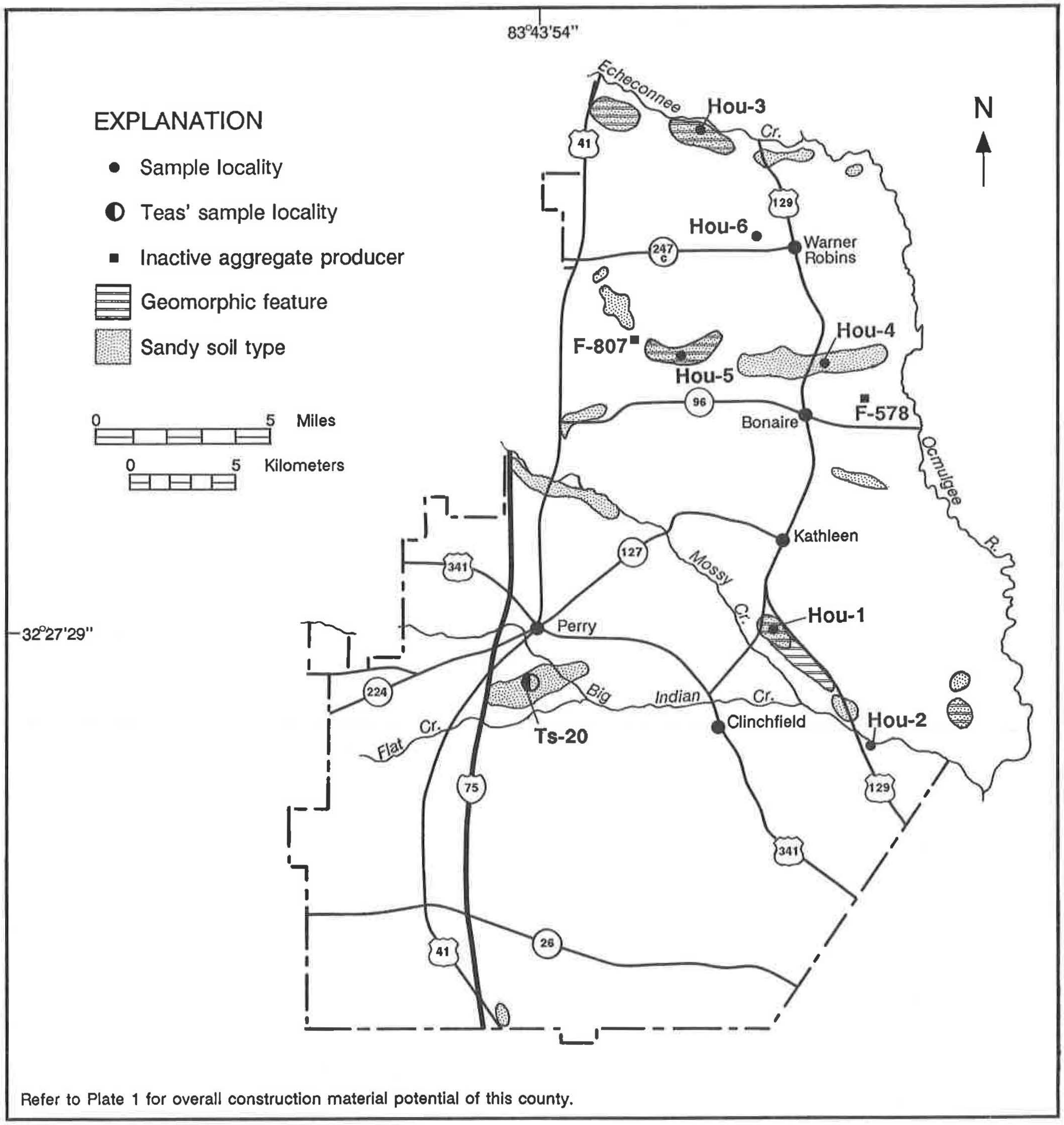


Figure 67. Houston County map.

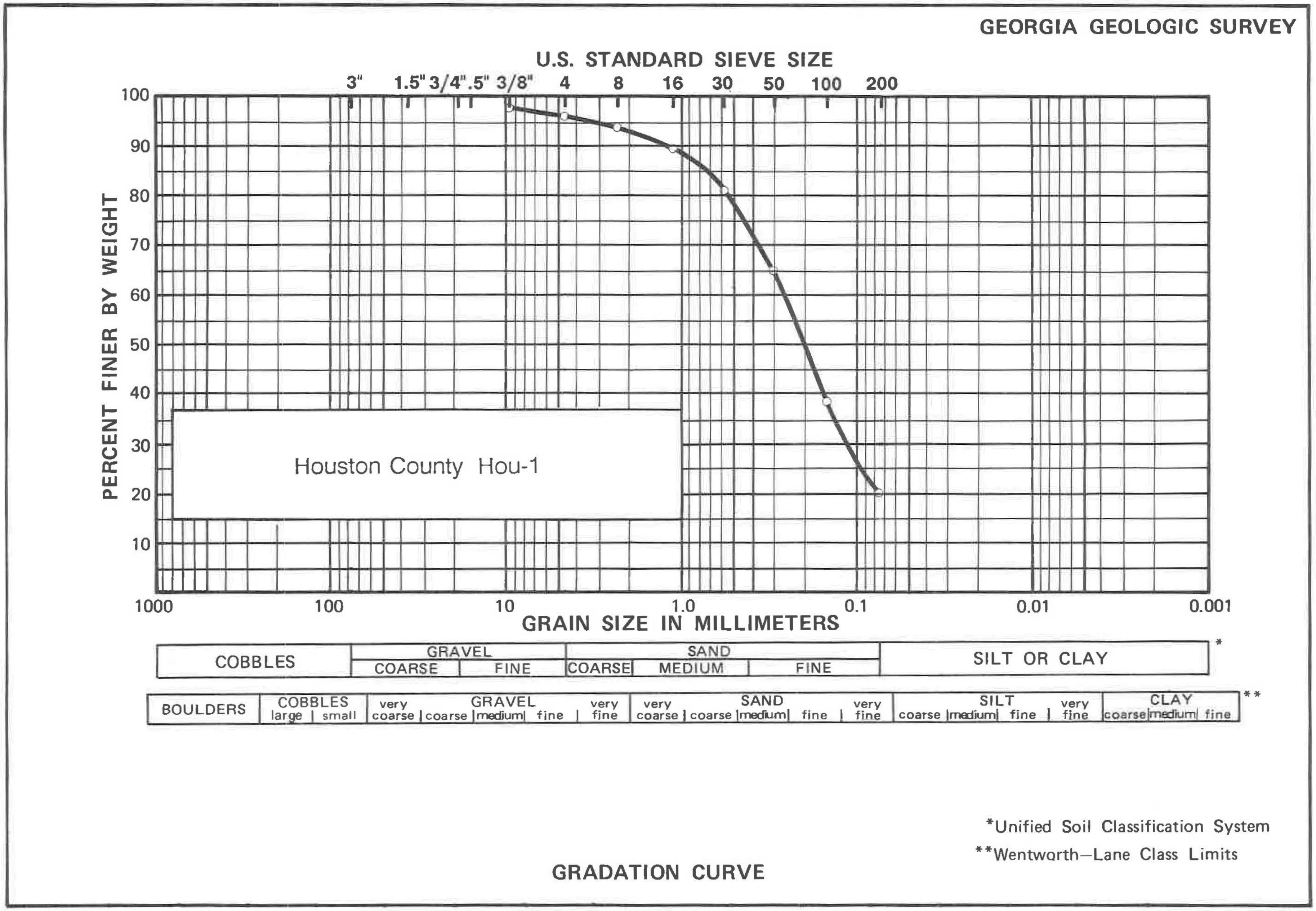


Figure 68. Size distribution curve of Sample Hou-1.

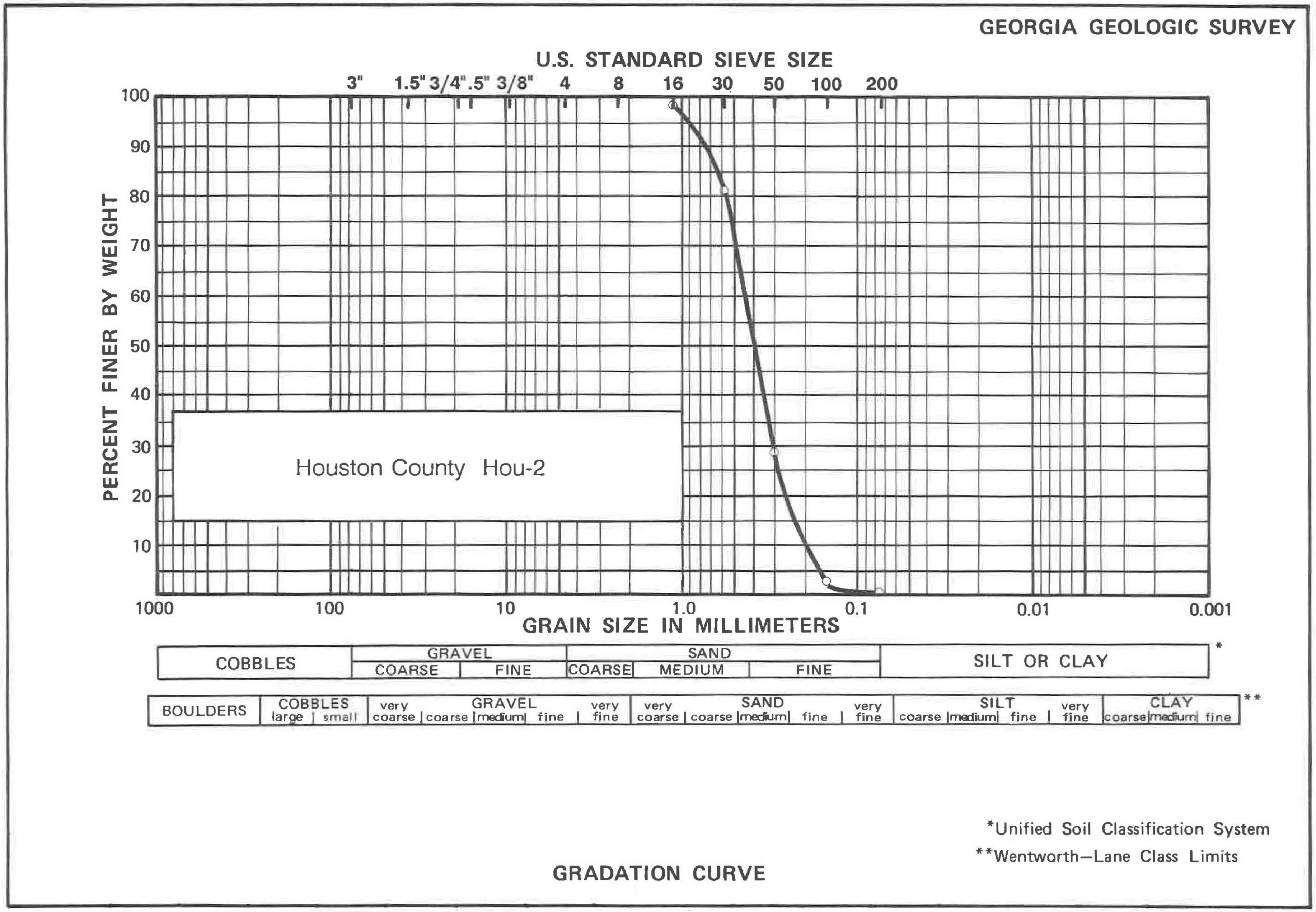


Figure 69. Size distribution curve of Sample Hou-2.

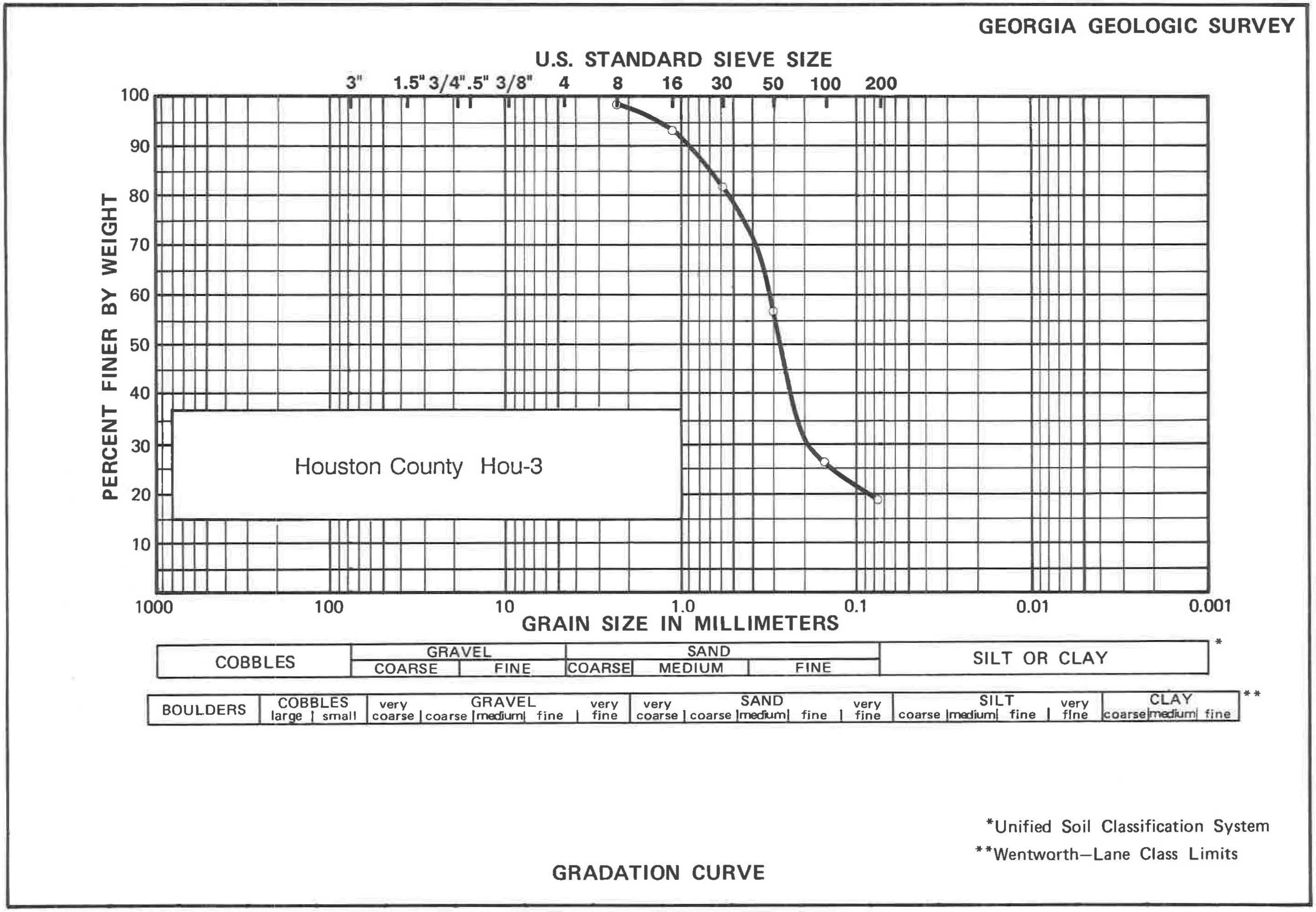


Figure 70. Size distribution curve of Sample Hou-3.

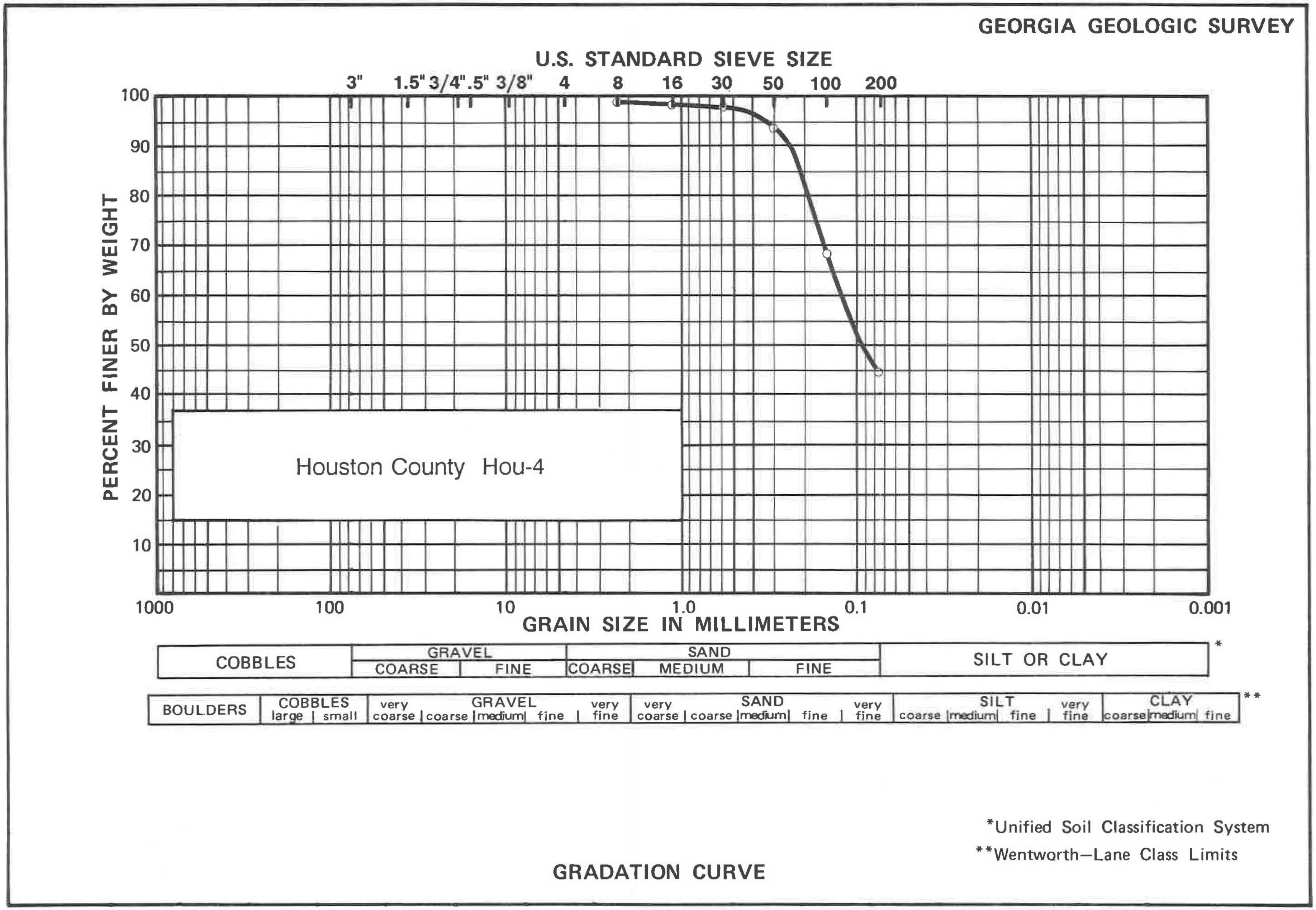


Figure 71. Size distribution curve of Sample Hou-4.

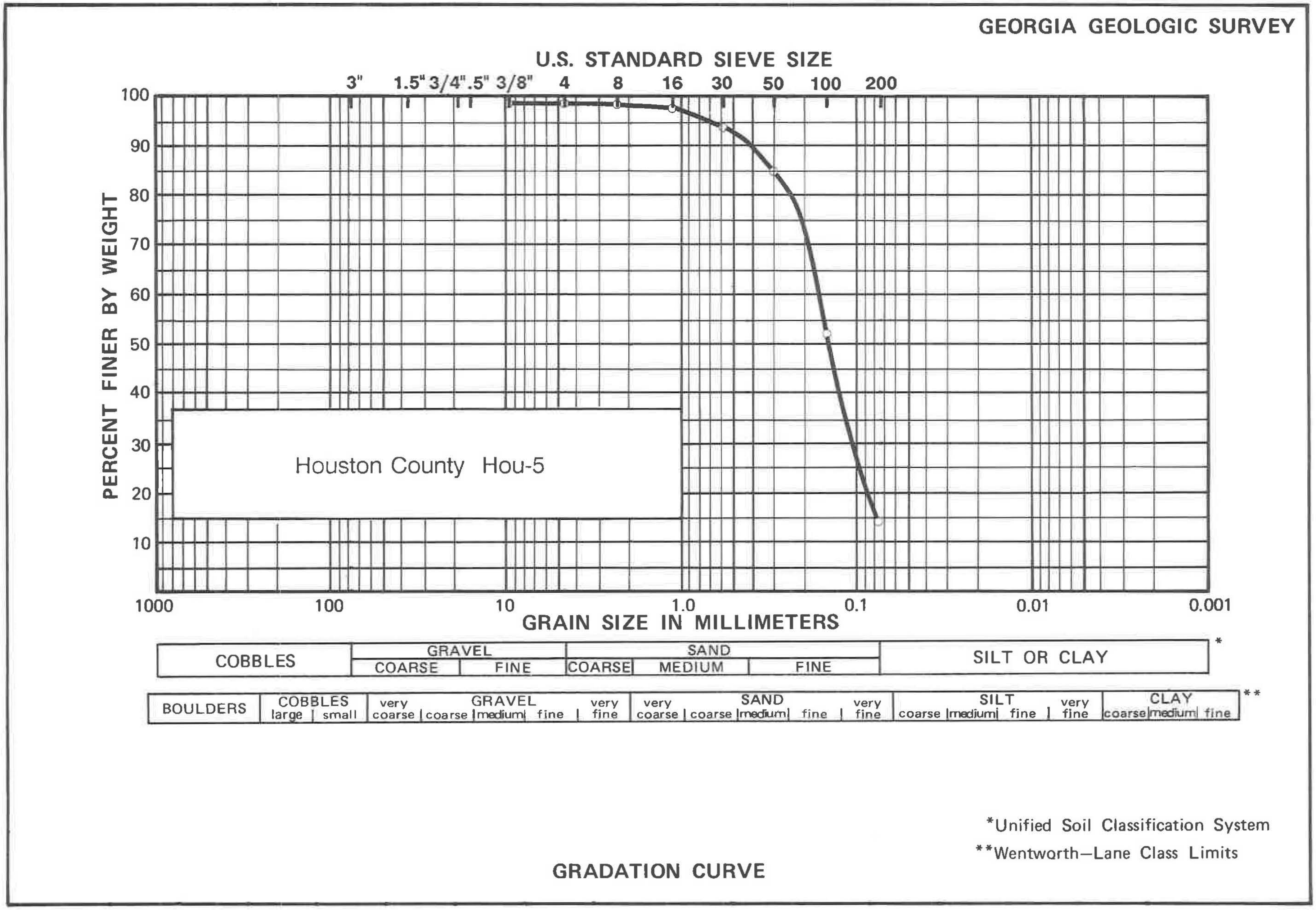


Figure 72. Size distribution curve of Sample Hou-5.

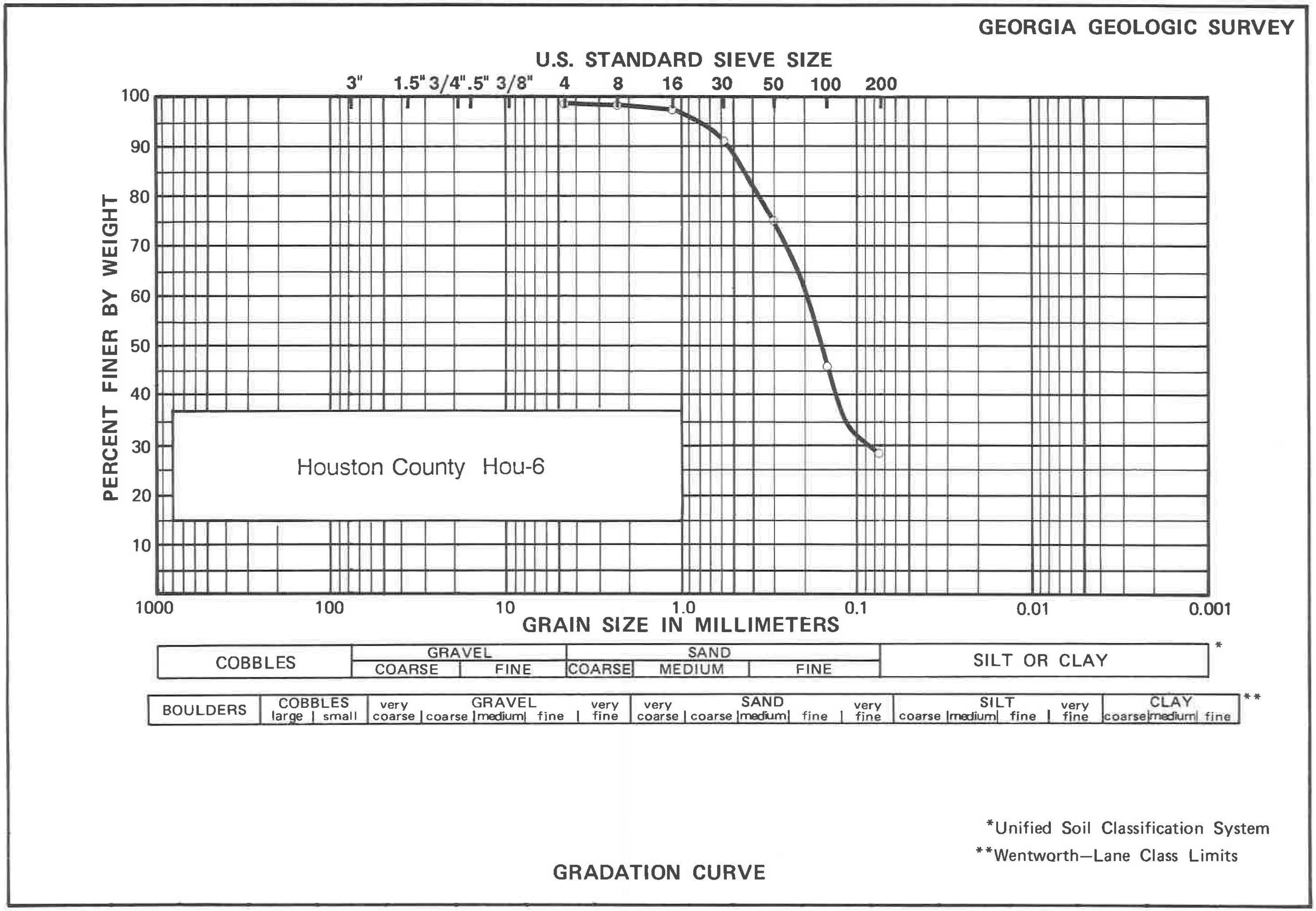


Figure 73. Size distribution curve of Sample Hou-6.

Ts-20). Although a small pit had been worked at that site, Teas reported that the sand is too fine-grained and not suitable for construction purposes.

Present Study

The soil series used in targeting sites in Houston County was Lakeland, which is present near various streams throughout Houston County. The geomorphic features noted were sand hills along Indian Creek. Six sites were sampled and analyzed for construction aggregate in Houston County (Fig.67, Table 15).

Evaluation

Samples Hou-1, Hou-3, and Hou-5 were taken from a preferred soil type and targeted geomorphic feature. These samples did not meet ASTM Standard C-33, as the material is too well-sorted. Sample Hou-4 was taken from the preferred soil type, and Hou-6 was taken from what appeared to be a favorable site from field observation. Both of these samples proved to be too fine-grained for construction aggregate. The site from which sample Hou-2 was taken was a 12-foot high sand dune. This site is a preferred soil type and a targeted geomorphic feature. Near this site is an abandoned sand pit for which no information is available. The material in this sample marginally failed ASTM Standard C-33 and could be upgraded.

Mining Activity

There are two mining operations in Houston County (Fig.67, F-807, F-578). Both are operated by the county and produce only fill material for use in road building.

Summary Evaluation

The site represented by sample Hou-2 offers the best possibility for aggregate production in Houston County. The material marginally failed ASTM Standard C-33 but could be upgraded. The construction material potential for this part of Houston County is considered to be moderate.

Irwin County

Geology and Physiography

The surficial sediments of Irwin County are derived from the Altamaha Formation. Irwin County, which is completely within the Coastal Plain Province, lies almost entirely within the Tifton Upland and Bacon Terraces Districts, with a small portion being in the Vidalia Upland District.

Previous Study

Teas (1921, p. 205-206) reported large sand hills along the Alapaha River which may have commercial value (Fig.74, Ts-21).

Table 16. Irwin County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Irw-1	4'	auger	4'	1	no	0
Irw-2	12'	auger	12'	1	no[2]	1
Irw-3	20'	auger	20'	2	no[2]	2
Irw-4	20'	auger	20'	3	no[2]	2

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[2]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

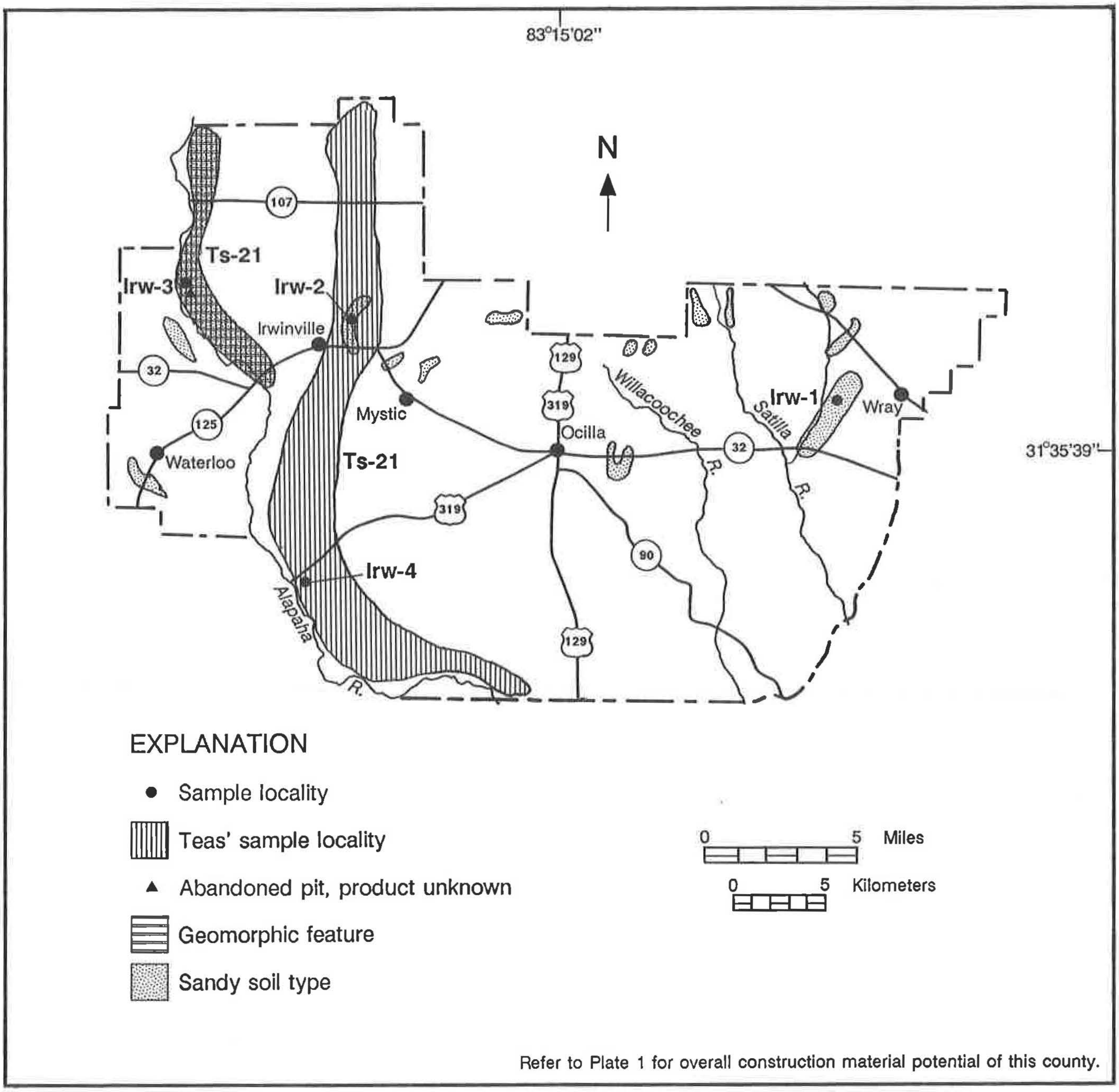


Figure 74. Irwin County map.

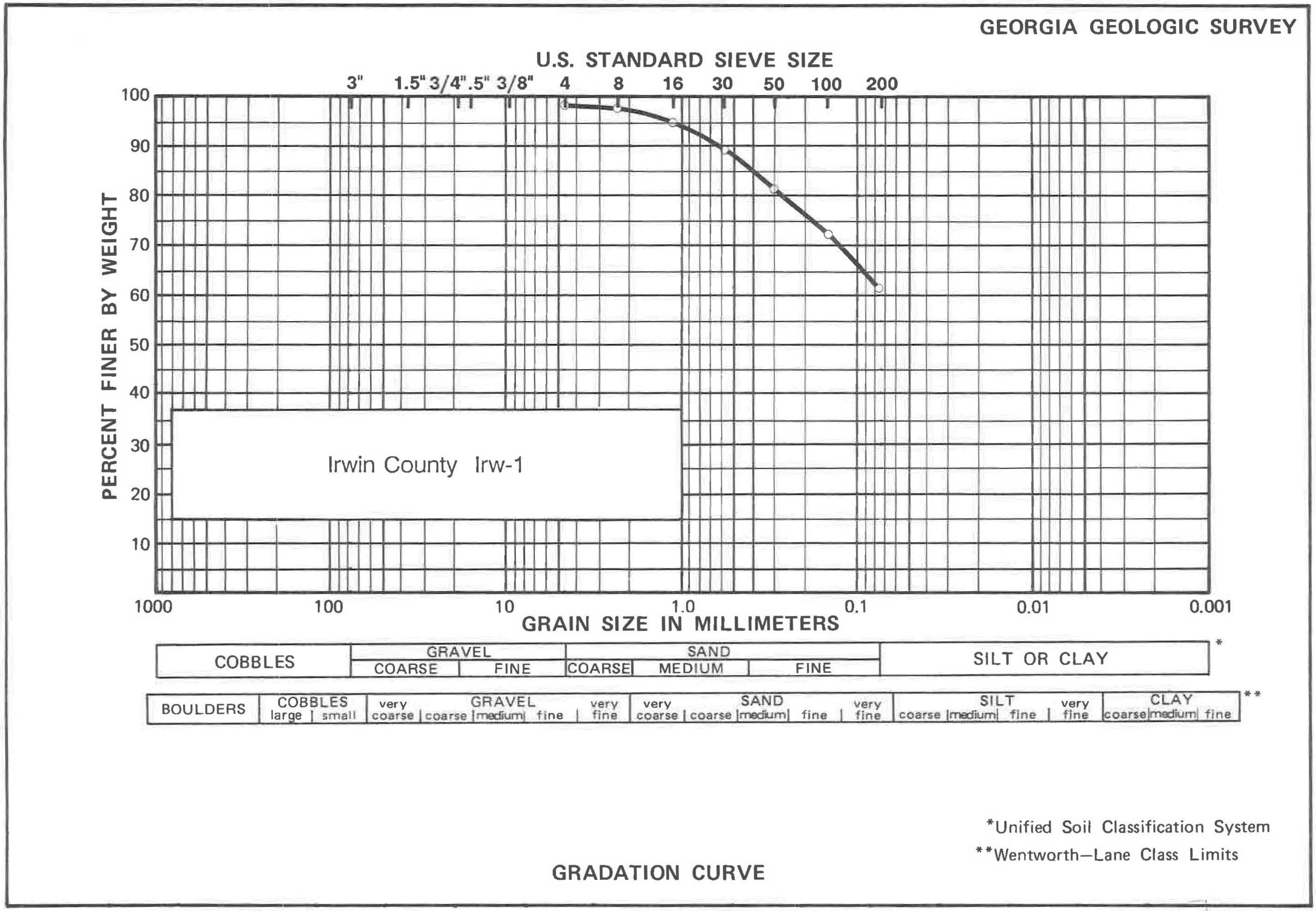


Figure 75. Size distribution curve of Sample Irw-1.

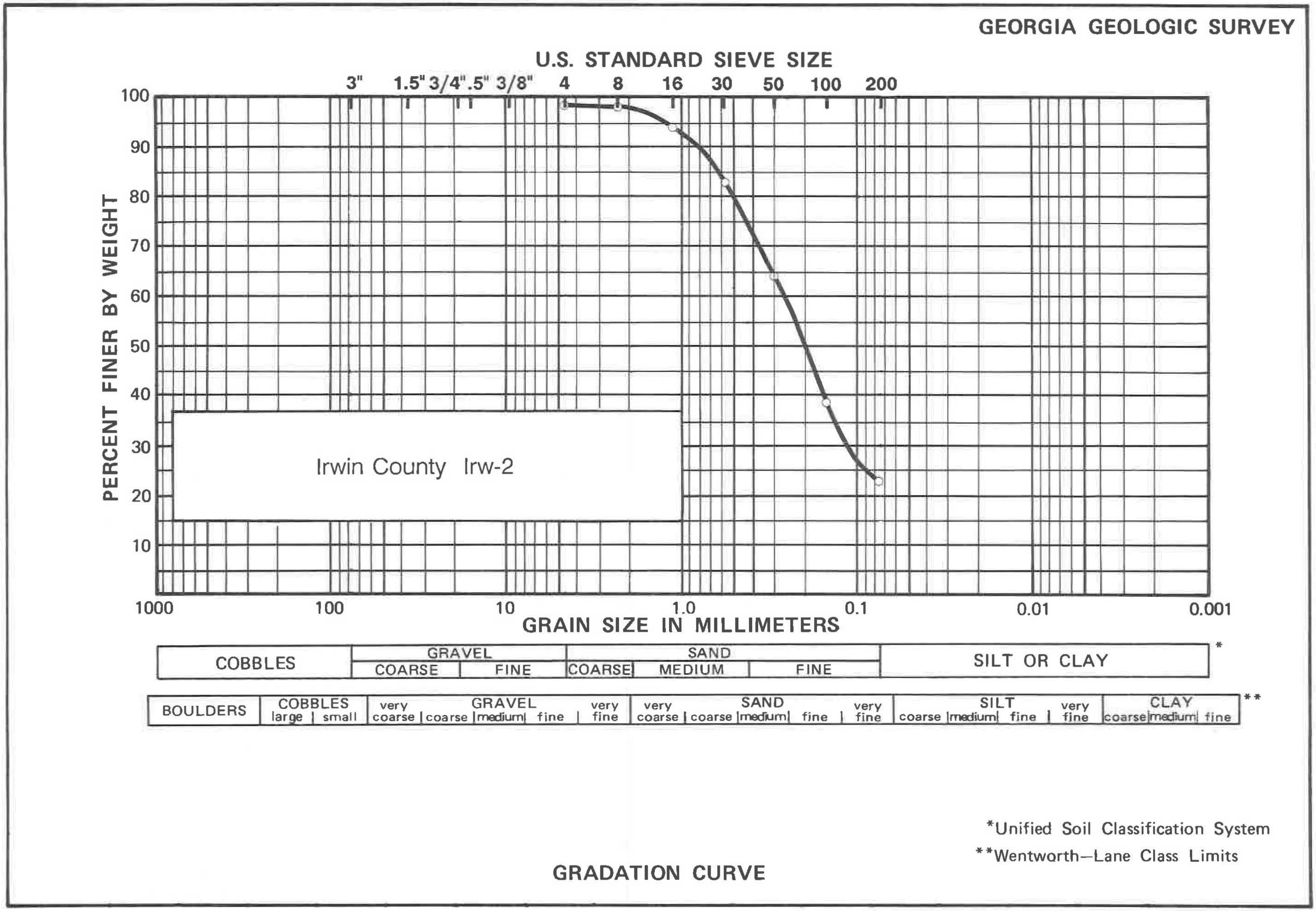
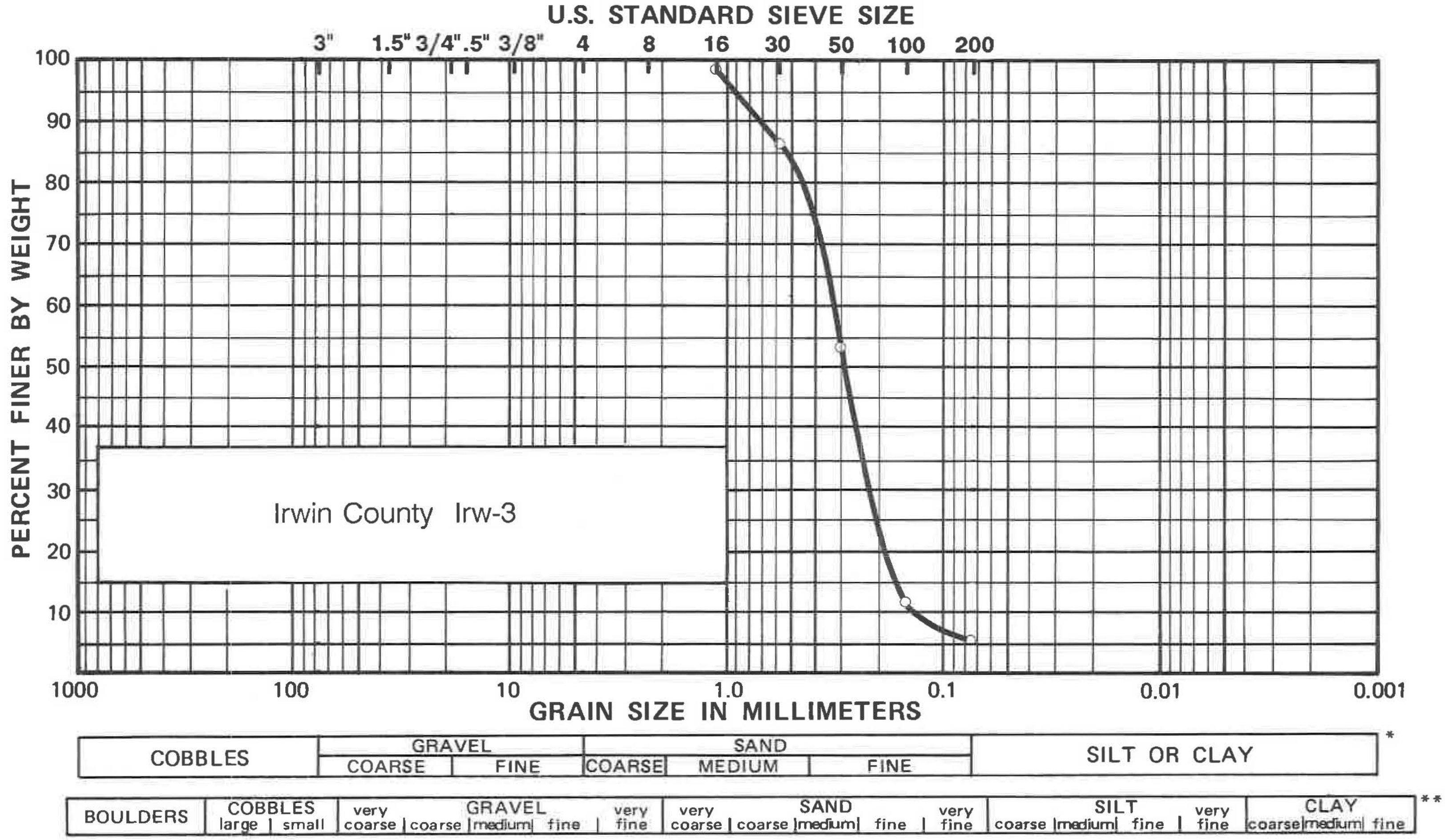


Figure 76. Size distribution curve of Sample Irw-2.

GEORGIA GEOLOGIC SURVEY



*Unified Soil Classification System

**Wentworth–Lane Class Limits

GRADATION CURVE

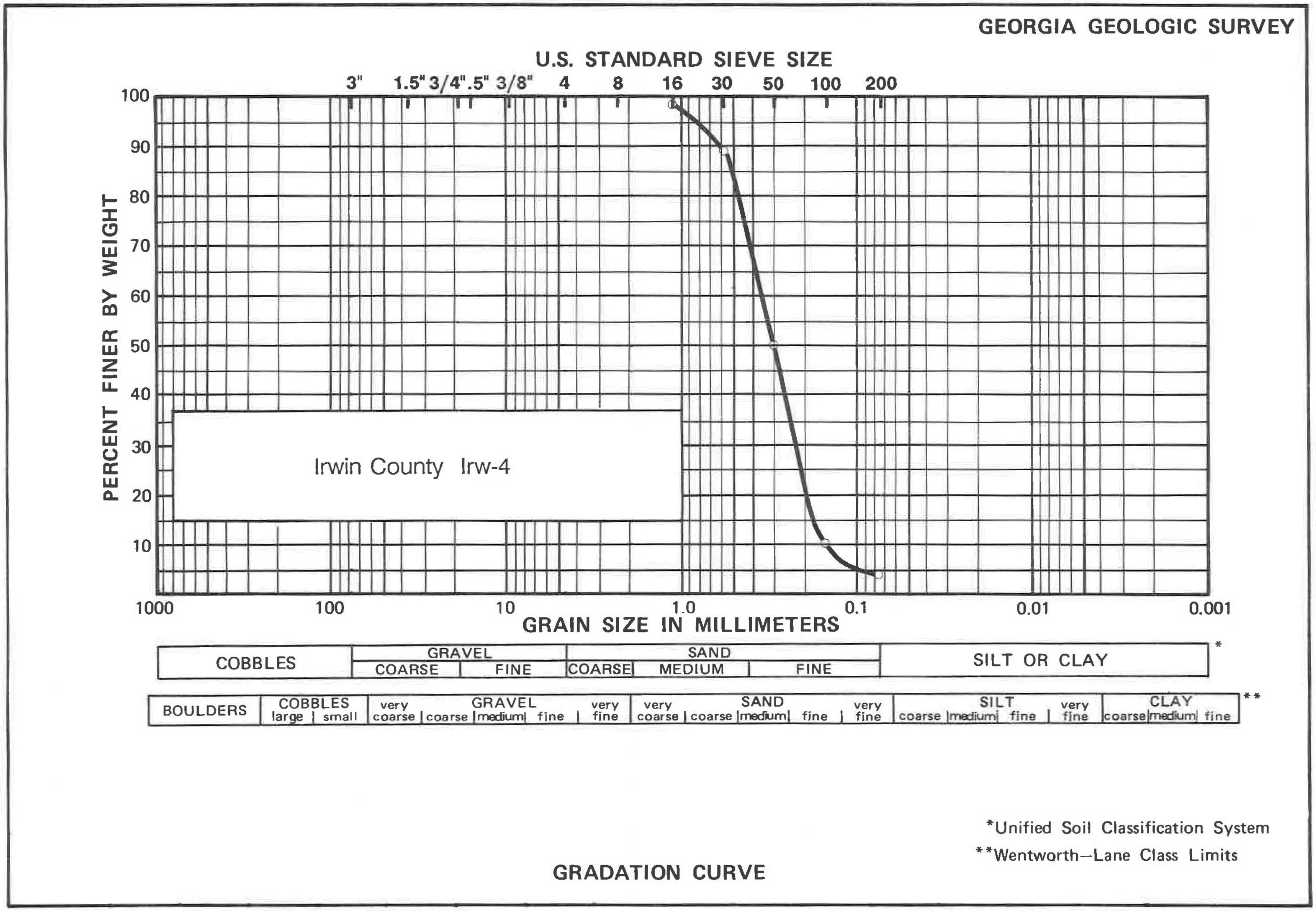


Figure 78. Size distribution curve of Sample Irw-4.

Present Study

The soil series used in targeting sites for sampling in Irwin County were Alapaha, Fuquay, Kershaw and Troup. These soil types are present along the various rivers and creeks of the county, and roughly correspond to some of the geomorphic features. The geomorphic features noted were the sand hills present along the Alapaha River. Four sites were sampled and analyzed for construction aggregate in Irwin County (Fig.74, Table 16).

Evaluation

Sample Irw-1 is from a preferred soil type. The sample did not meet ASTM Standard C-33 and is too fine-grained for use as construction aggregate. Sample Irw-2 was also taken from a preferred soil type. This sample marginally failed ASTM Standard C-33 but could be upgraded. Samples Irw-3 and Irw-4 were taken from the preferred soil type and the site of targeted geomorphic features. Sample Irw-3 was taken from an area near the site of an abandoned sand pit. These samples marginally failed ASTM Standard C-33.

Mining Activity

Other than an abandoned sand pit, for which no information is available, there are no active or recently inactive aggregate operations in Irwin County.

Summary Evaluation

Three samples from Irwin County (Irw-2, Irw-3, and Irw-4) marginally failed ASTM C-33 and could provide construction aggregate, with upgrading. The construction material potential for Irwin County is low to moderate.

Jeff Davis County

Geology and Physiography

The surficial sediments of Jeff Davis County are derived from the Altamaha Formation and Quaternary alluvium. Jeff Davis County lies within the Vidalia Upland and Bacon Terraces Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 206) reported that coarse sand is present in a terrace deposit of the Ocmulgee River near Lumber City (Fig.79, Ts-22) and in sand bars throughout the course of the Ocmulgee River.

Present Study

The soil series used in targeting sites for

Table 17. Jeff Davis County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
JeD-1	4'	auger	4'	1	no[3]	2
JeD-2	10'	auger	10'	2	no	0
JeD-3	2'	auger[4]	2'	2	no[3]	2
JeD-4	3'	auger[4]	3'	2	no[3]	2
JeD-5	3'	auger[4]	3'	2	yes	2
JeD-6	16'	auger	24'	2	no[3]	2

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.
[4]River sample, taken with a hand auger.

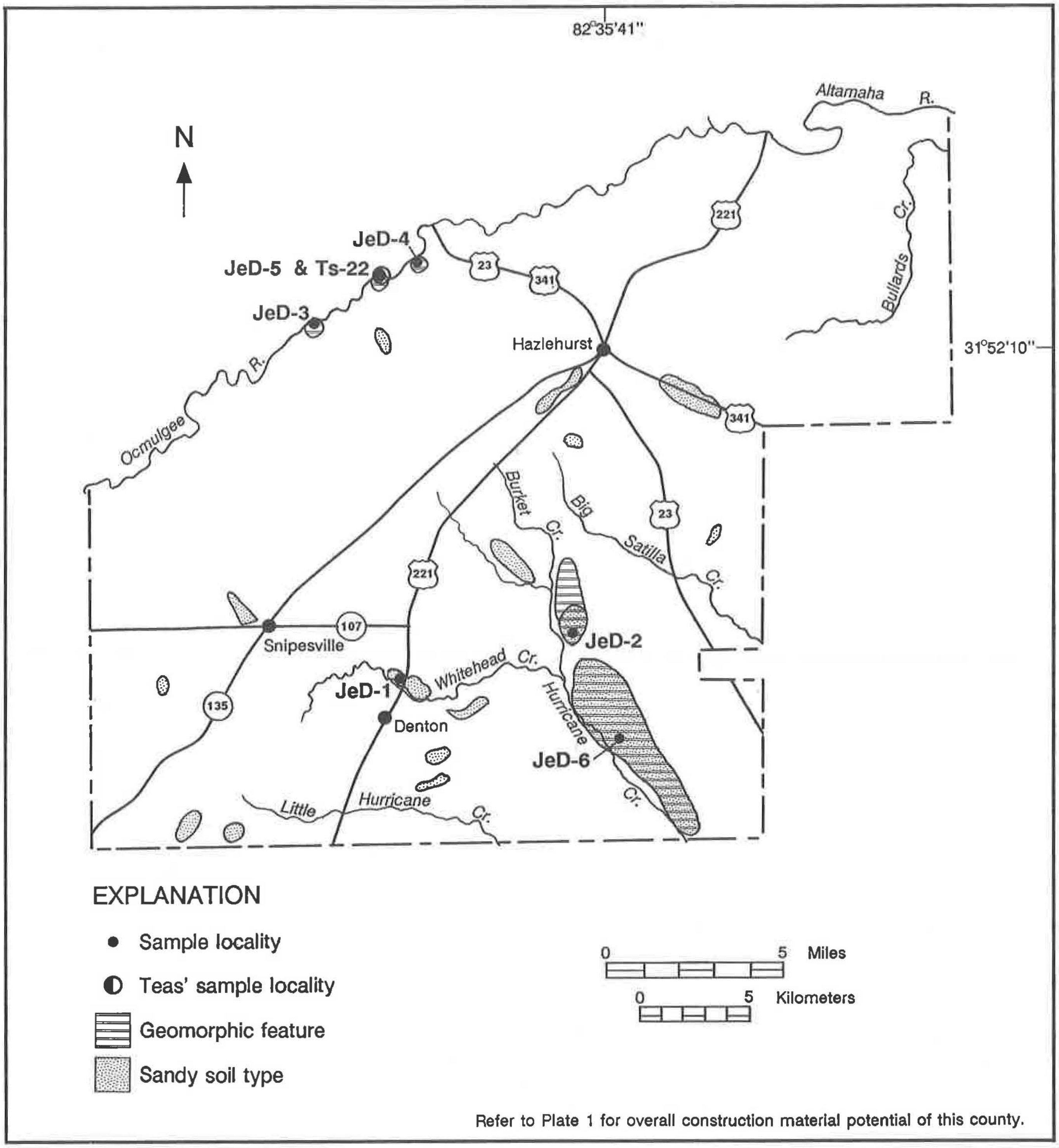


Figure 79. Jeff Davis County map.

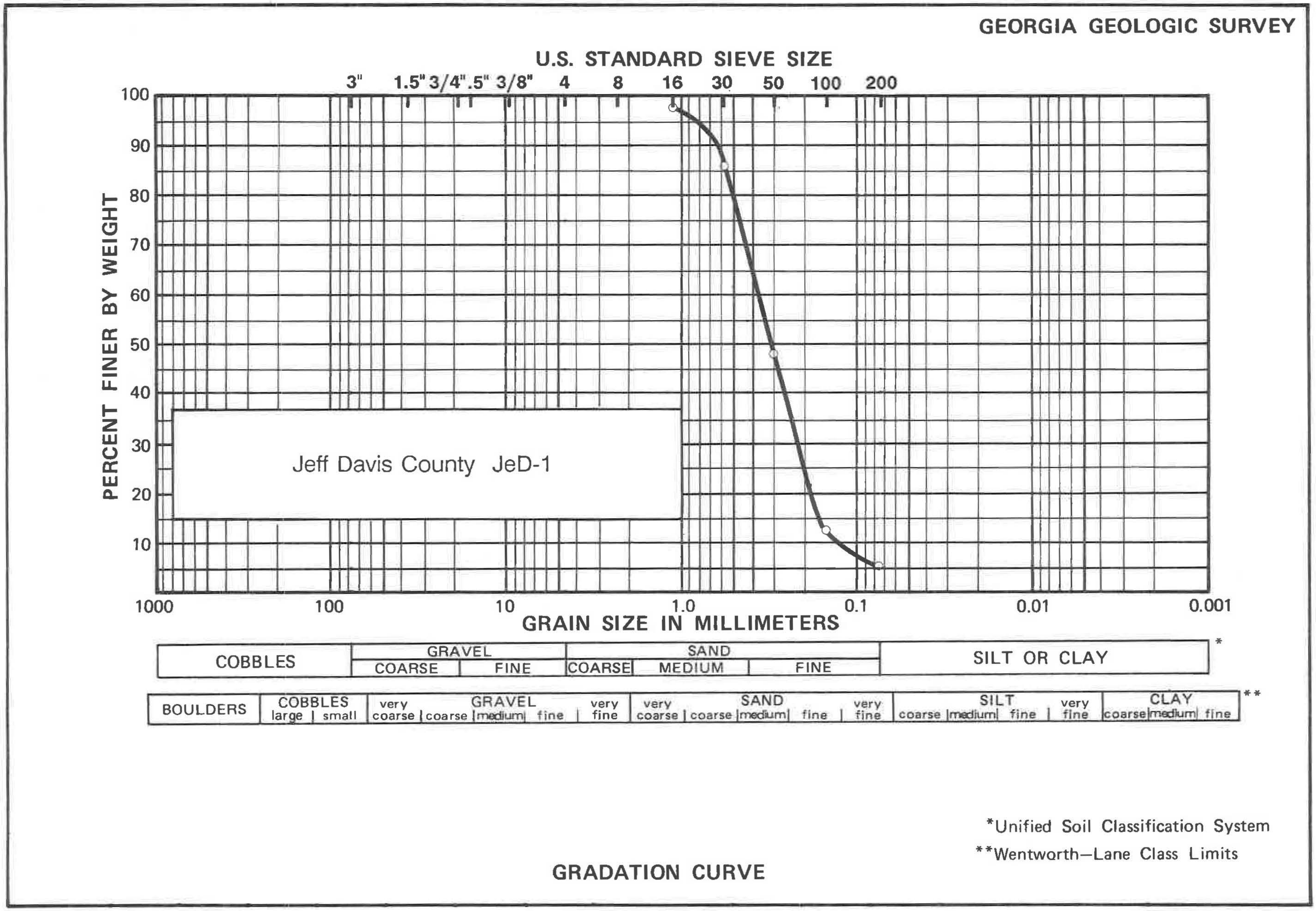


Figure 80. Size distribution curve of Sample JeD-1.

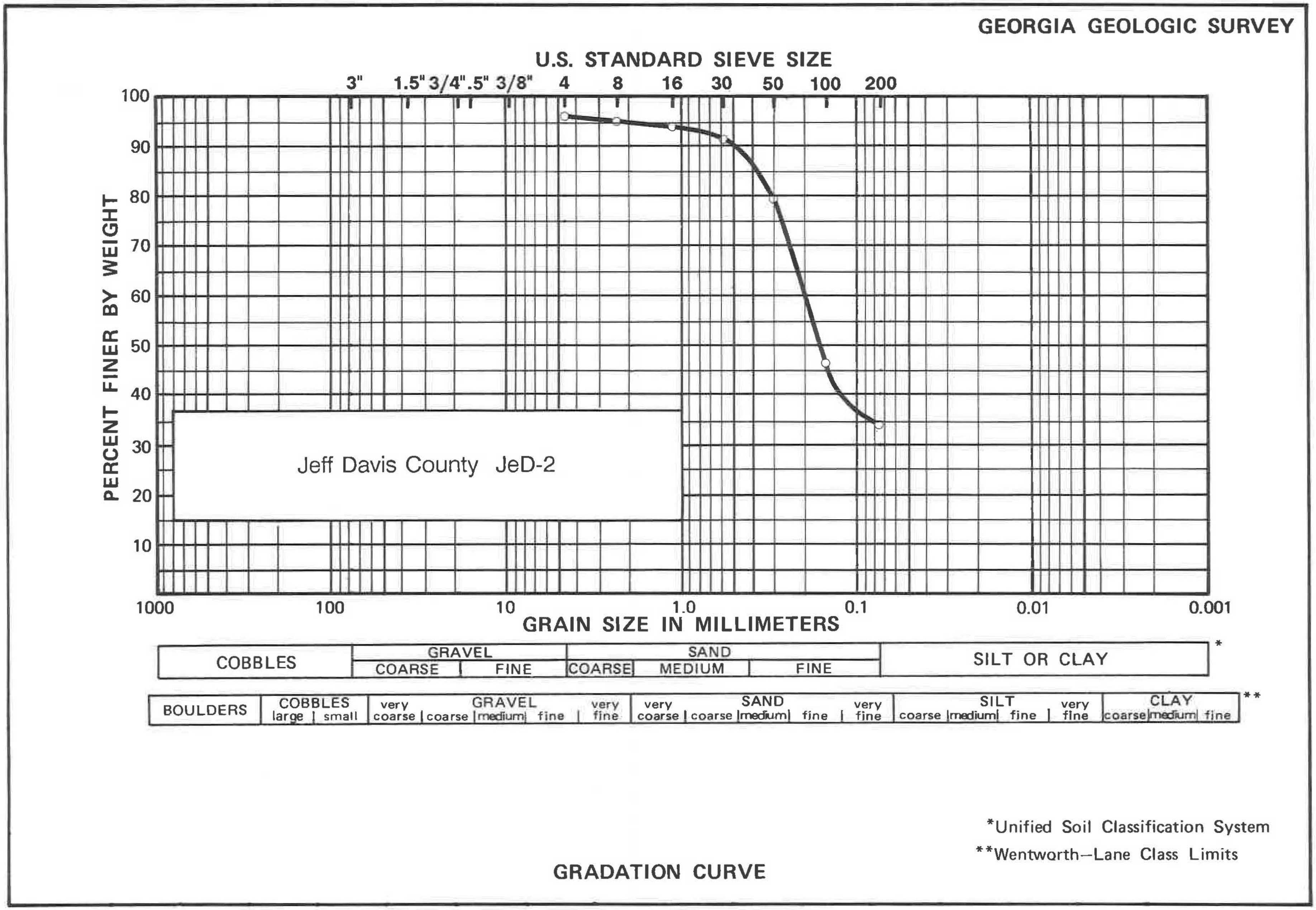


Figure 81. Size distribution curve of Sample JeD-2.

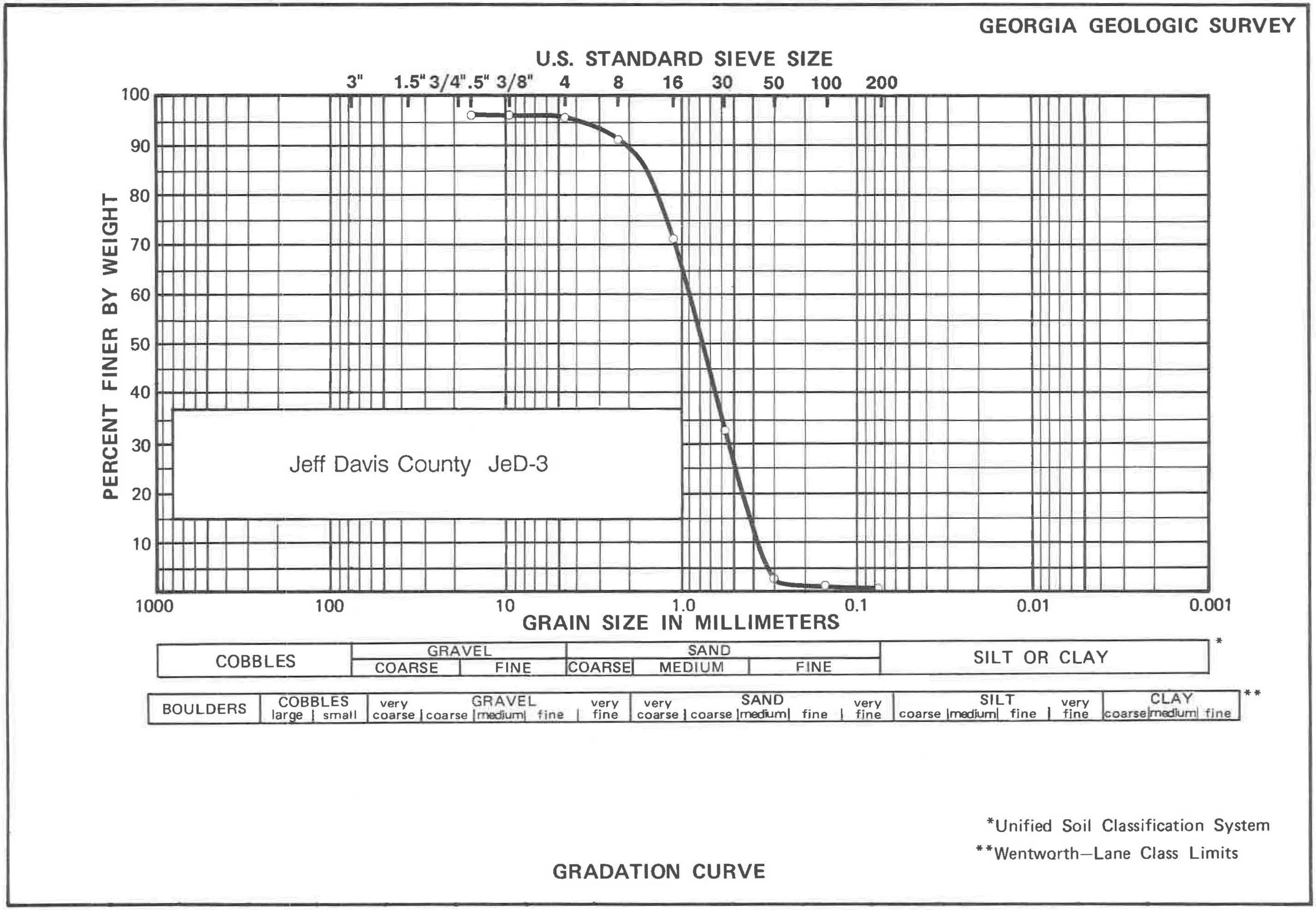


Figure 82. Size distribution curve of Sample JeD-3.

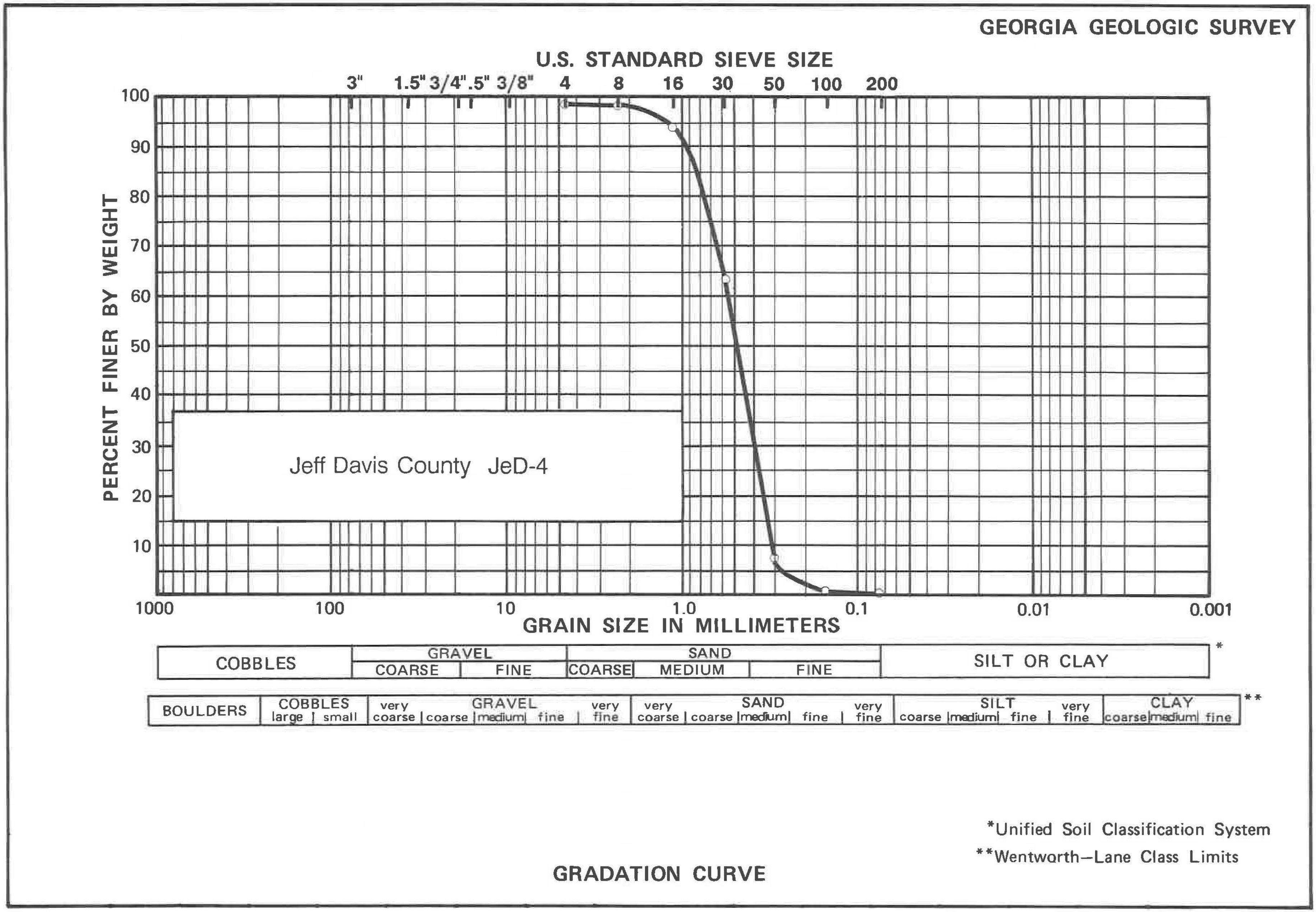


Figure 83. Size distribution curve of Sample JeD-4.

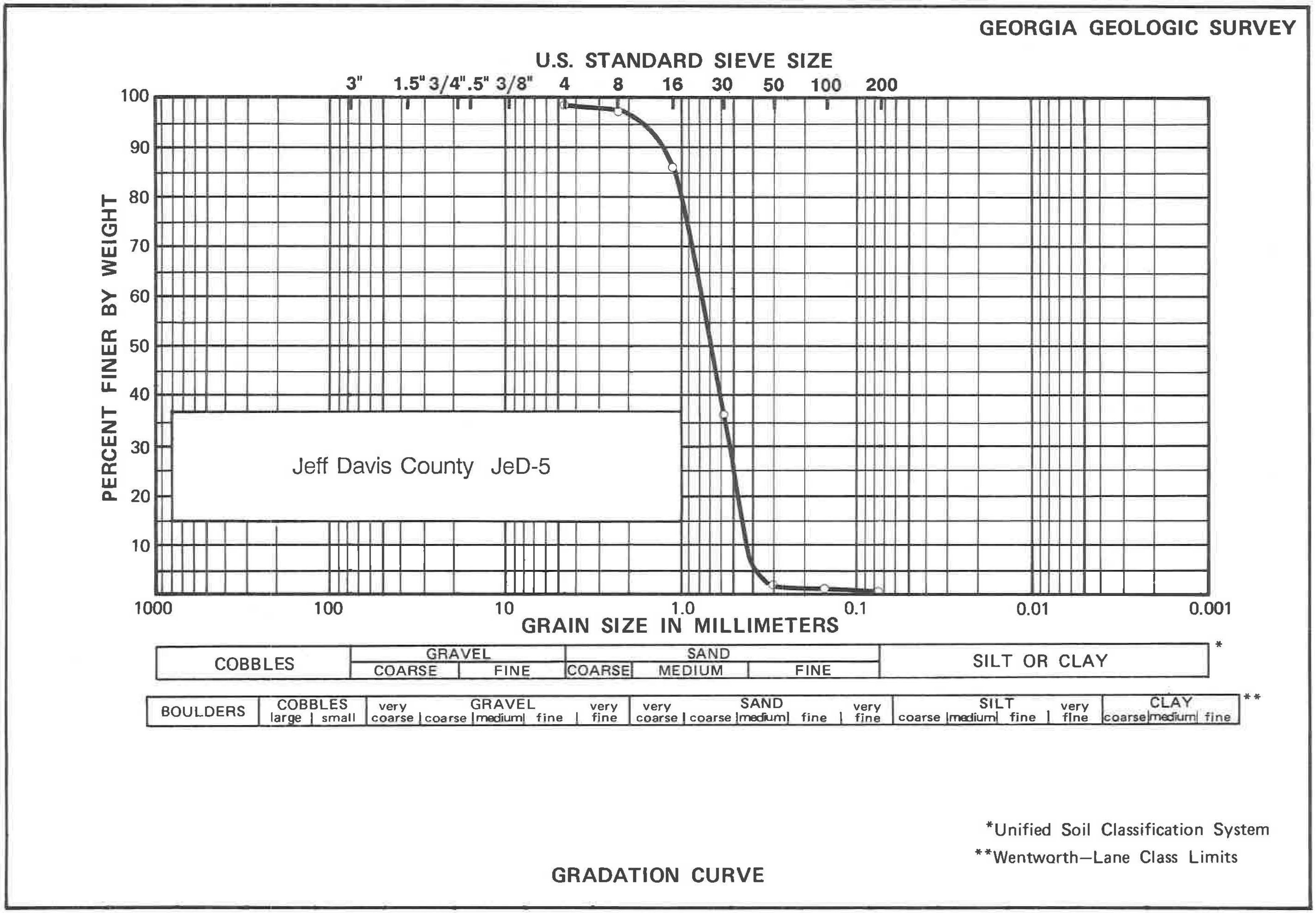


Figure 84. Size distribution curve of Sample JeD-5.

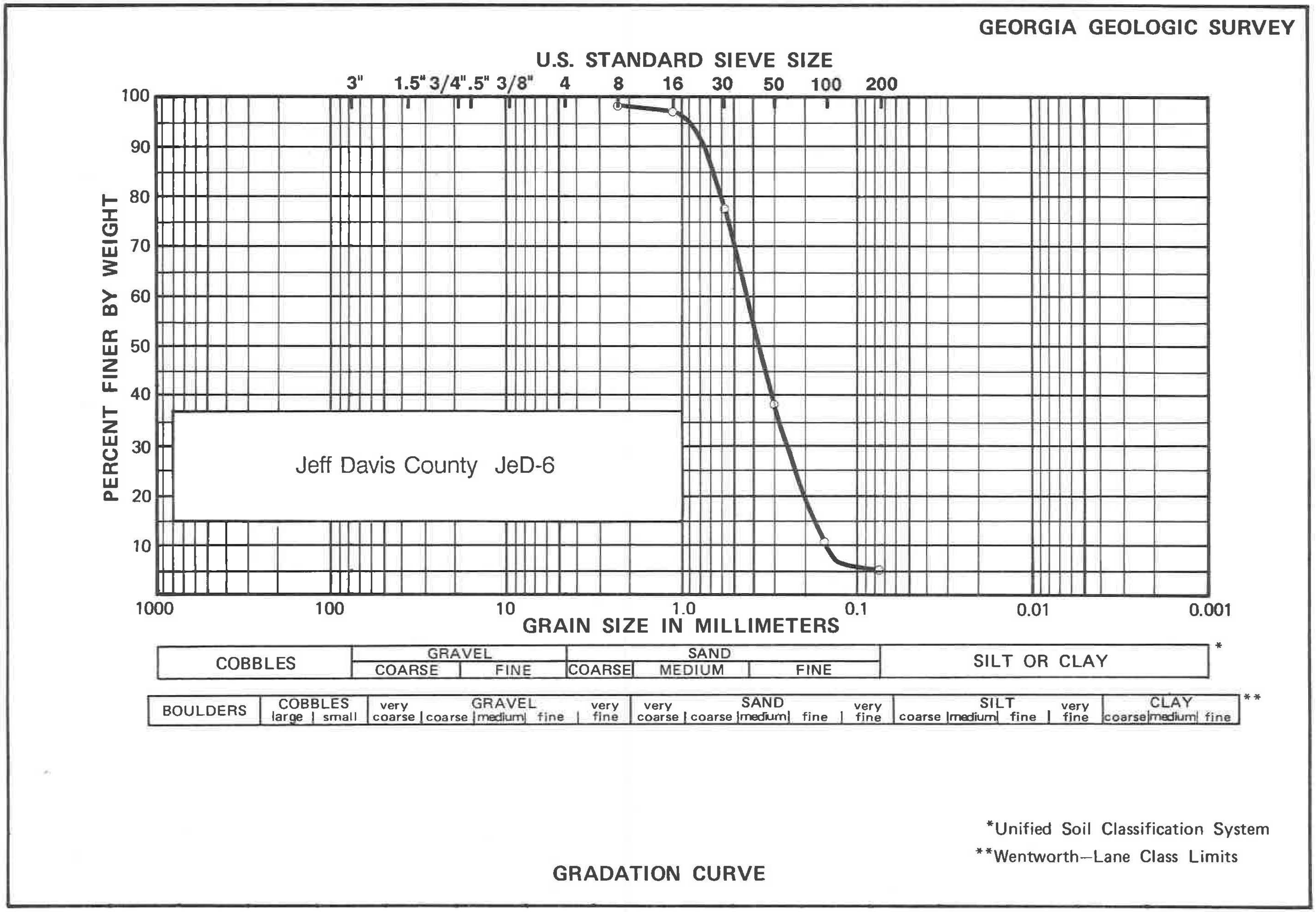


Figure 85. Size distribution curve of Sample JeD-6.

sampling in Jeff Davis County were Kershaw and Mascotte, which are present as isolated areas throughout the county. The geomorphic features noted were the sand hills along Hurricane Creek. Six sites were sampled and analyzed for construction aggregate in Jeff Davis County (Fig.79, Table 17).

Evaluation

Sample JeD-2 was taken from a preferred soil body and geomorphic feature. The material is too fine-grained for use as construction aggregate and does not meet ASTM Standard C-33. Sample JeD-1 was taken from a preferred soil type and near the site of an abandoned sand pit for which no information is available. Sample JeD-6 was taken from a preferred soil type and, also, the site of a targeted geomorphic feature. These samples marginally failed ASTM Standard C-33 and could be upgraded.

The remaining three samples, JeD-3, JeD-4, and JeD-5, are from point bars along the Ocmulgee River. Samples JeD-3 and JeD-4 marginally failed ASTM Standard C-33 but could be upgraded. Sample JeD-5 meets ASTM Standard C-33. Depending on the water level, these point bars in the Ocmulgee River can vary from approximately five to ten acres in size and could provide from 20,000 to 40,000 tons of material.

Mining Activity

Other than an abandoned pit, for which there is no information available (Fig.79), there are no active or recently inactive mining operations in Jeff Davis County.

Summary Evaluation

The point bars along the Ocmulgee River offer the best possibility for aggregate production in Jeff Davis County. But due to their limited areal extent, mining may not be profitable. The construction material potential for Jeff Davis County is considered to be moderate.

Johnson County

Geology and Physiography

The surficial sediments of Johnson County are derived primarily from the Altamaha Group with minor deposits of the Barnwell Group and Quaternary alluvium. Johnson County lies in the Coastal Plain Province and almost entirely within the Vidalia Upland District. A small portion of the county lies in the Fall Line Hills District.

Previous Study

Teas (1921, p. 209) reported that the sand belt along the Little Ohoopee River (Fig.86, Ts-23) consisted of fine-to medium-grained sand and was at that time being used as traction sand. Teas (1921, p. 209) reported a 5-acre gravel deposit, about 2 feet thick (Fig. 86, Ts-24), belonging to J.H. Rowland, located about 5 miles from Wrightsville. Teas (1921) also reported a 20-acre deposit of gravel and concrete sand near Donovan (Teas, 1921, p. 209-210; Fig.86, Ts-25). Gravel was reported by Teas (1921, p. 210) at the McCrary property, 6 miles northwest of Wrightsville, (Fig.86, Ts-26); the Brantley property, 3 miles from Wrightsville, (Fig.86, Ts-27); the Smith property, 2 miles from Adrian (Fig.86, Ts-28); the Flanders property, 1.5 miles from Adrian, (Fig.86, Ts-29); and an occurrence of clayey gravel at Neels Creek (Fig.86, Ts-30).

Present Study

The soil association used in targeting sites in Johnson County was #39 (see p. 7), which overlaps the geomorphic features noted, sand hills along the Little Ohoopee River. Six samples representing five sites were analyzed for construction aggregate (Fig.86, Table 18).

Evaluation

Sample Joh-2 is from the preferred soil type and a targeted geomorphic feature. Samples Joh-1, Joh-3 and Joh-5 are from sites noted by Teas (1921; Fig. 86, Ts-28, Ts-25, and Ts-24, respectively). Samples Joh-4a and Joh-4b are from a site noted by Teas (1921, Fig.86, Ts-23), which is also a location of the preferred soil type, and a targeted geomorphic feature.

None of the samples analyzed met ASTM Standard C-33. All samples, with the exception of Joh-4a, were too fine-grained for use as construction aggregate. Although there is some coarse-grained material present in sample Joh-1, there is too much fine-grained material, and the deposit is too small to be considered. Sample Joh-4a is too well-sorted and marginally failed ASTM Standard C-33 but could be upgraded. This sample represents a fifteen-acre site with possible reserves of 500,000 tons, before upgrading.

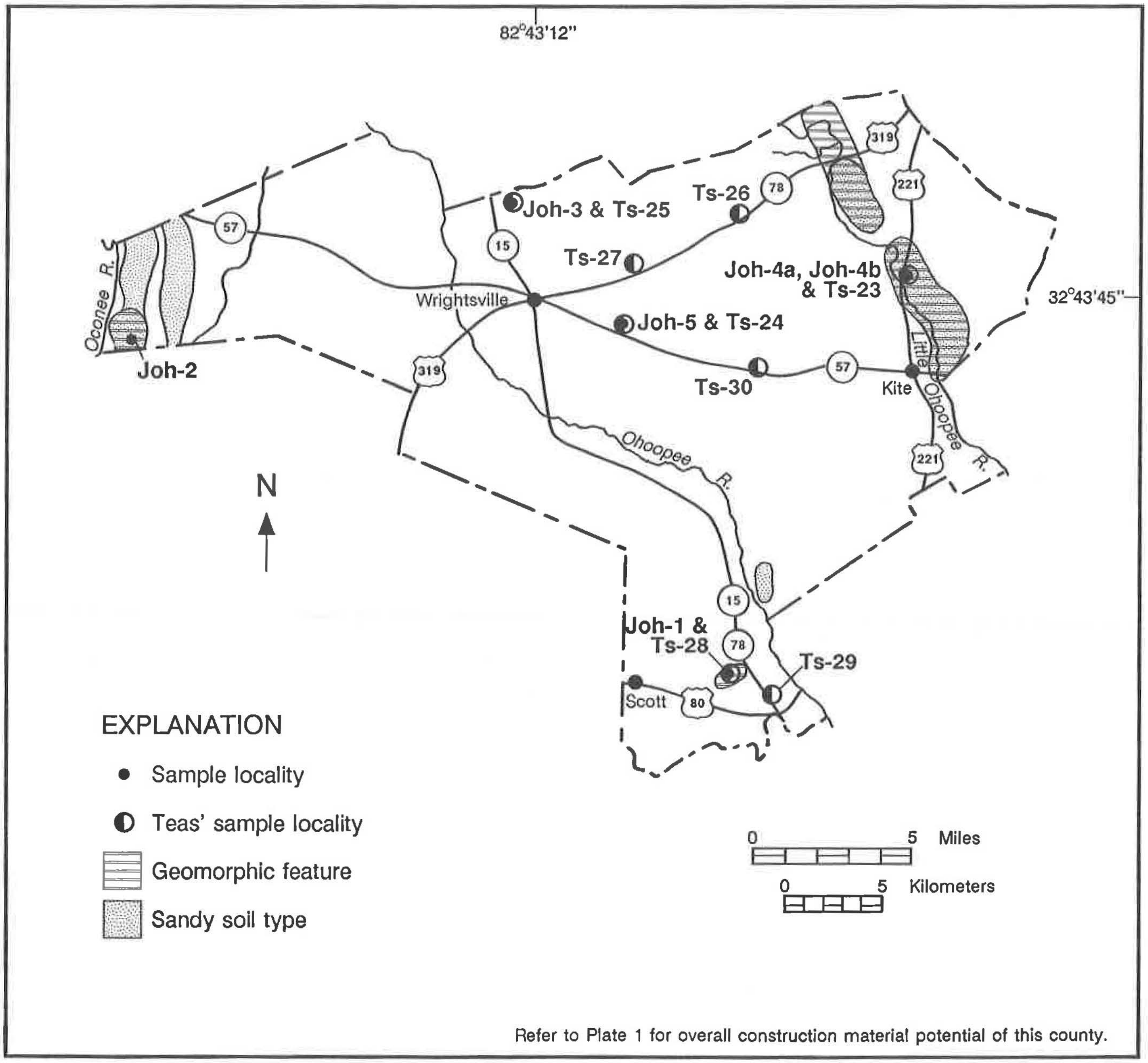


Figure 86. Johnson County map.

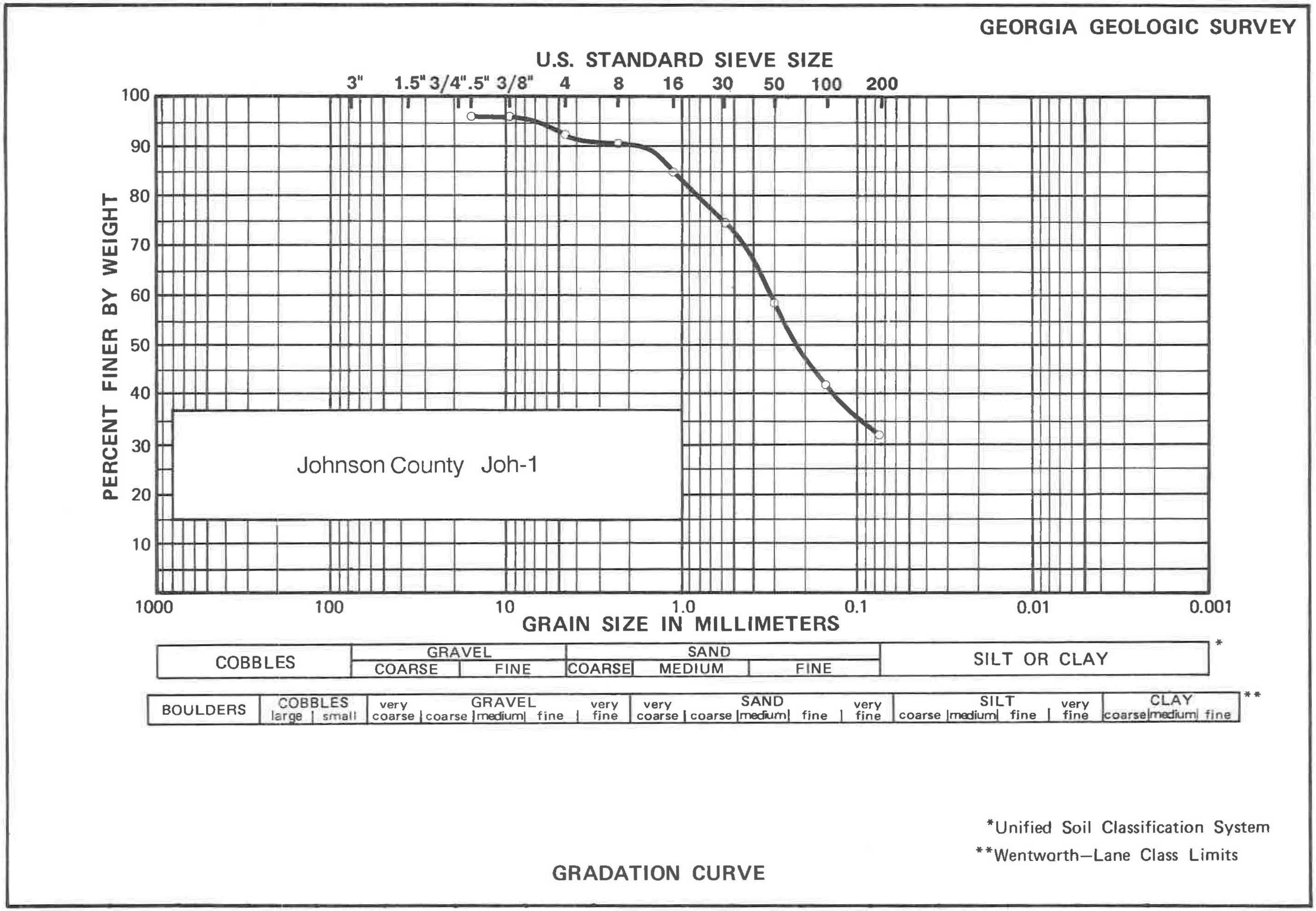


Figure 87. Size distribution curve of Sample Joh-1.

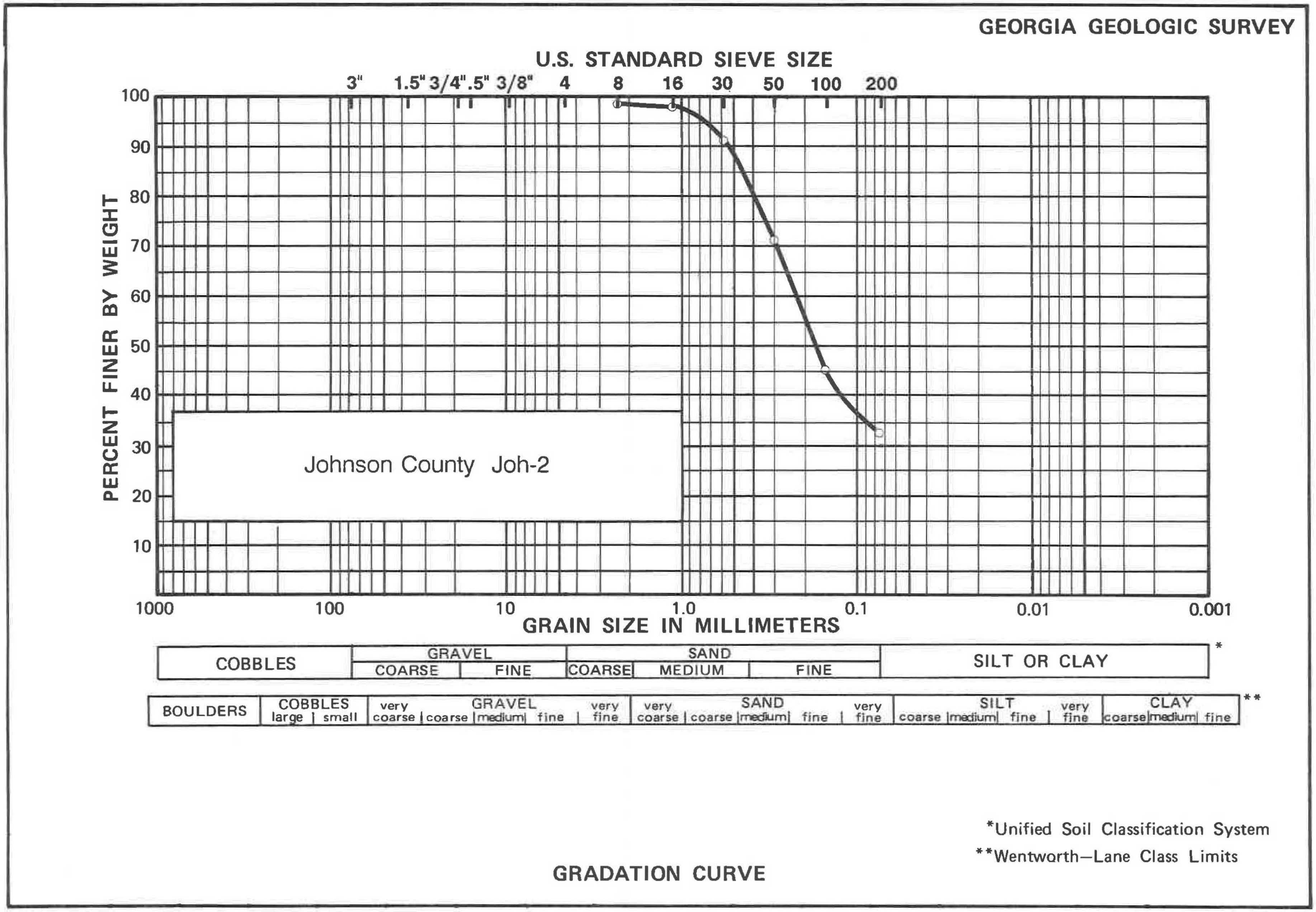


Figure 88. Size distribution curve of Sample Joh-2.

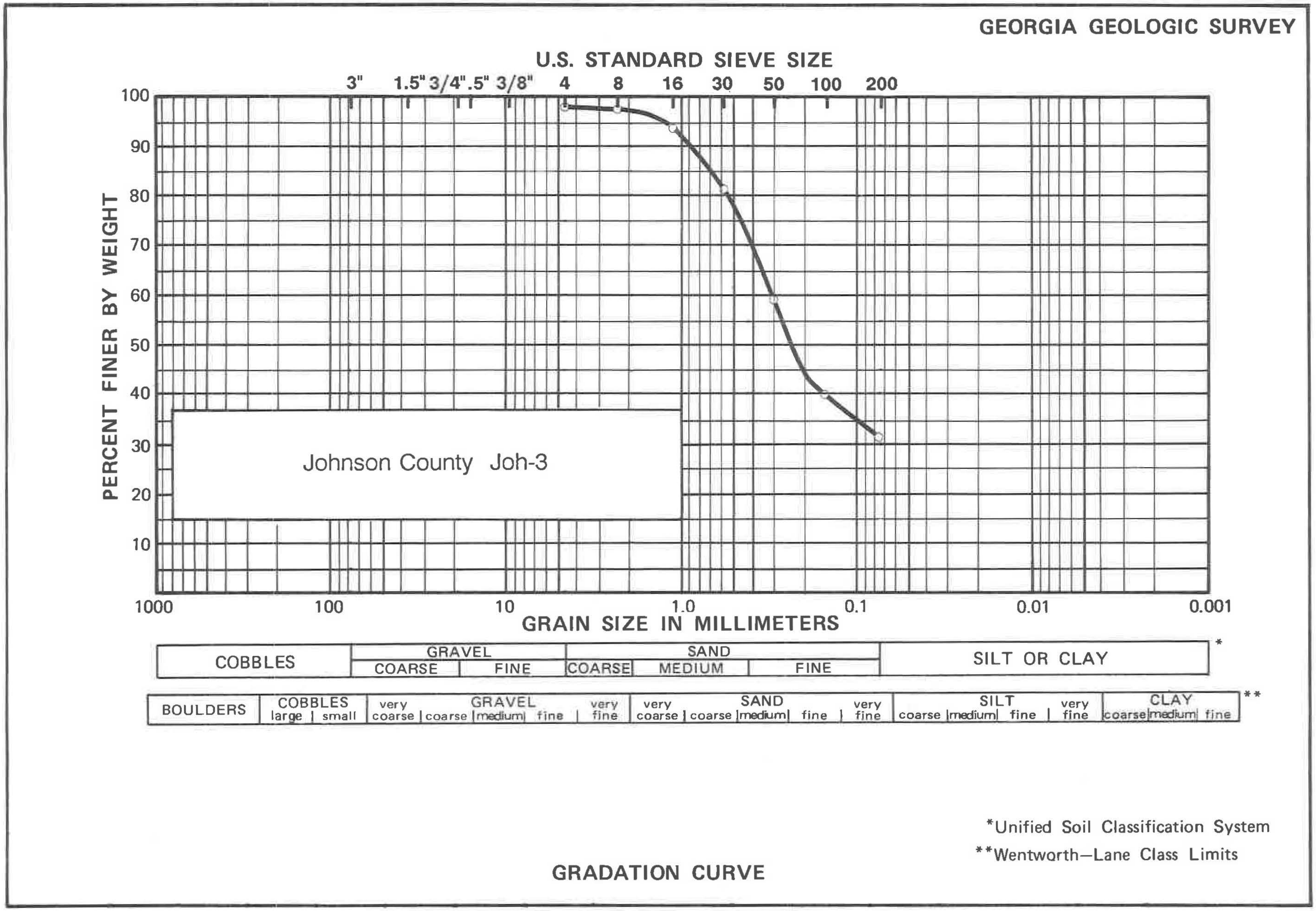


Figure 89. Size distribution curve of Sample Joh-3.

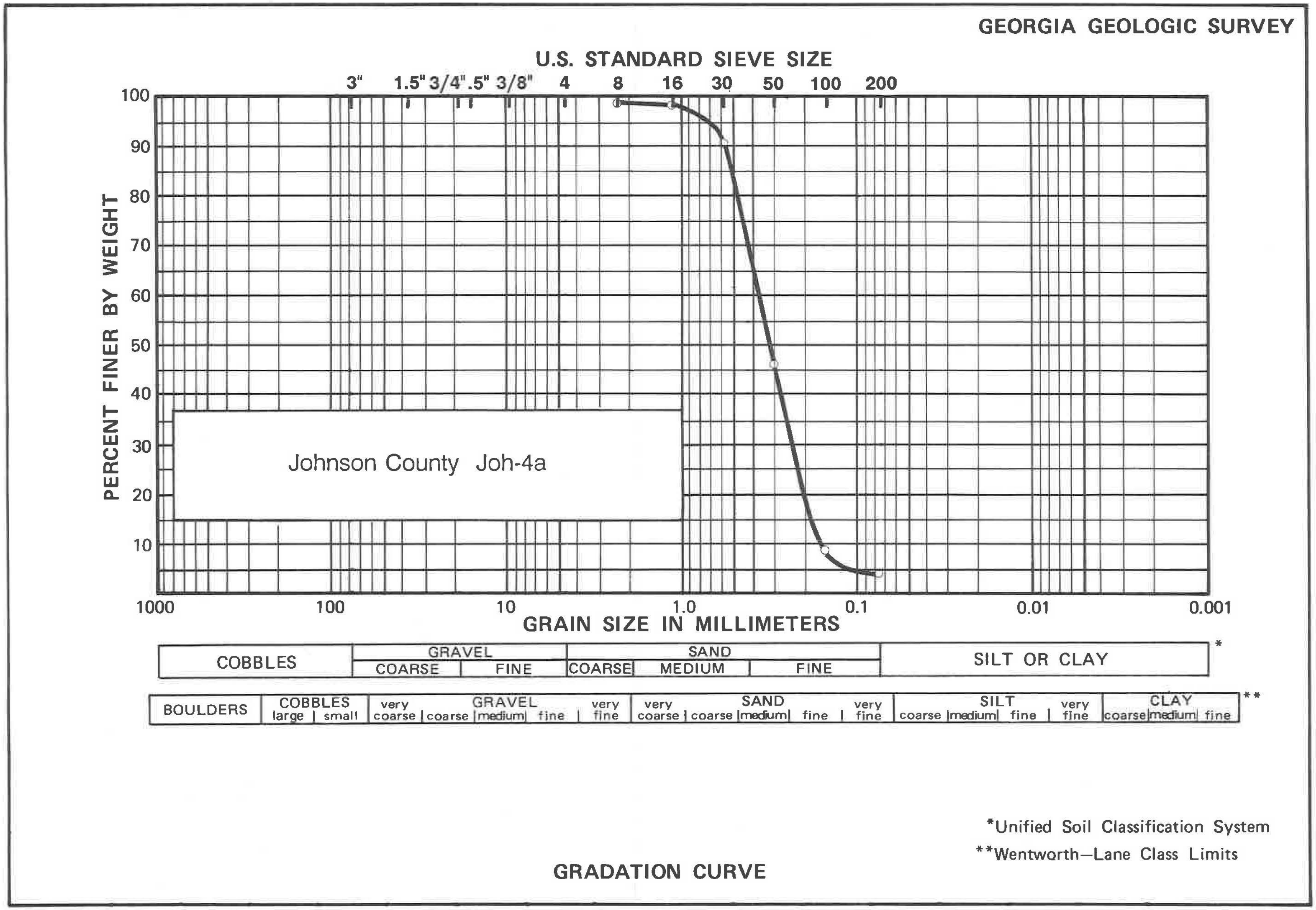


Figure 90. Size distribution curve of Sample Joh-4a.

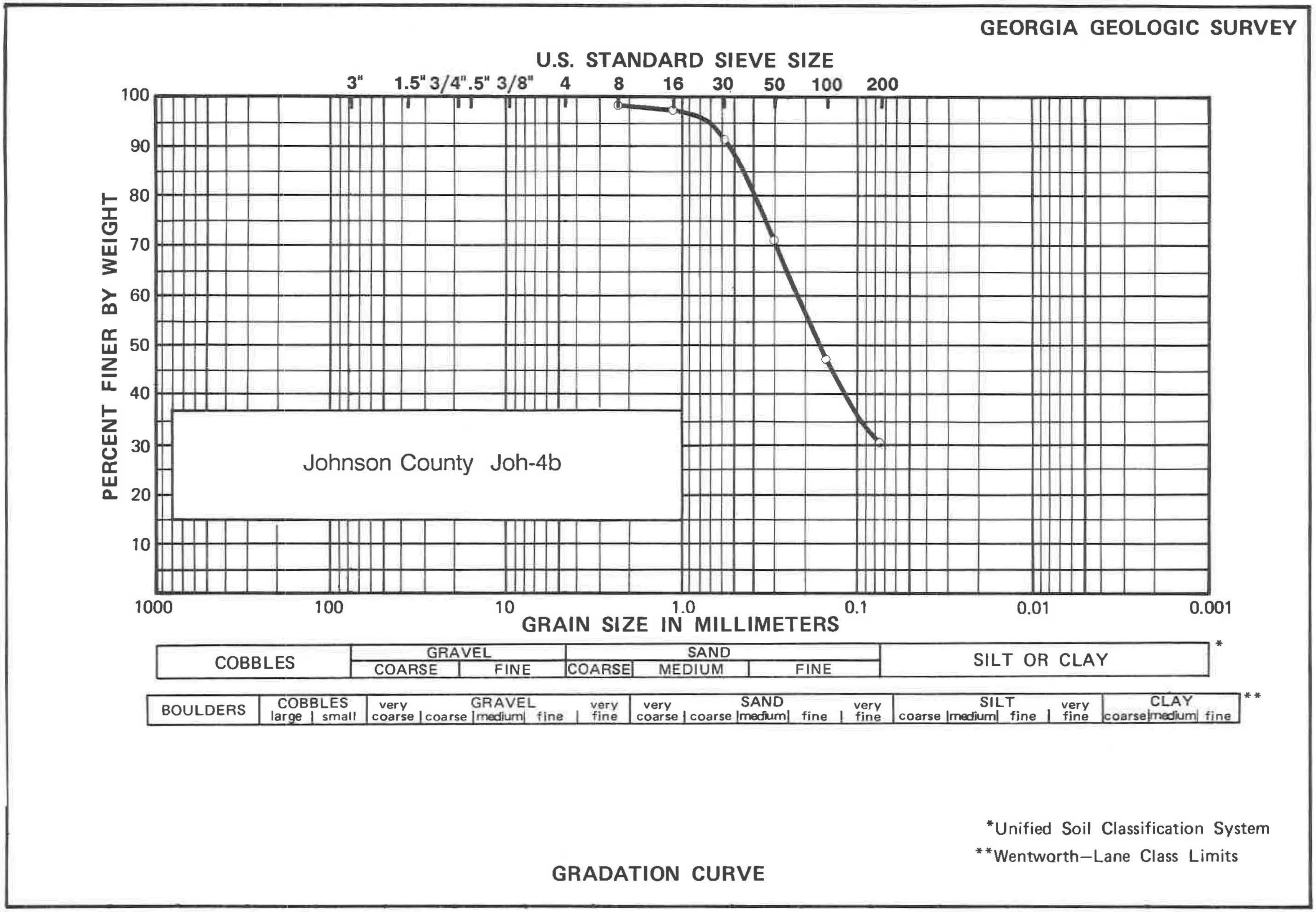


Figure 91. Size distribution curve of Sample Joh-4b.

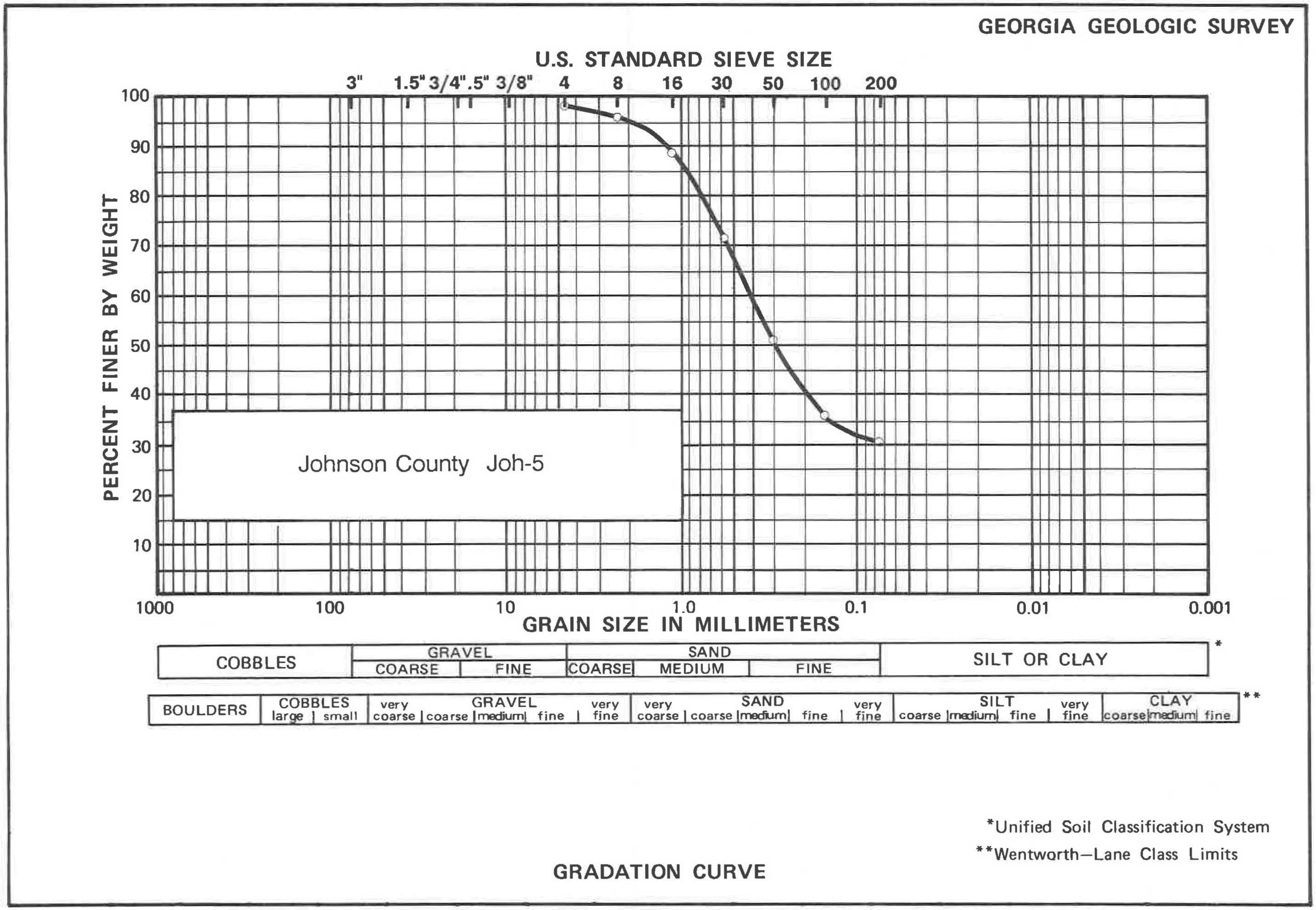


Figure 92. Size distribution curve of Sample Joh-5.

Table 18. Johnson County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Joh-1	7'	auger	7'	2	no	2
Joh-2	8'	auger	8'	2	no	0
Joh-3	8'	auger	8'	1	no	1
Joh-4a	18'	trench	21'	3	no[4]	2
Joh-4b	3'	auger	21'	3	no	0
Joh-5	7'	auger	6'	1	no	1

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[4]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

Mining Activity

There are no active or recently inactive aggregate operations in Johnson County.

Summary Evaluation

Sample Joh-4a could be suitable for construction aggregate use; however, the supply would be limited. Construction material potential for Johnson County is considered to be low.

Jones County

Geology and Physiography

The surficial sediments of Jones County are derived from the crystalline rocks of the Piedmont Province, the Barnwell Group, and the Oconee Group. Most of Jones County lies within the Piedmont Province and outside the study area; however, the southern portion lies within the Fall Line Hills District of the Coastal Plain Province.

Previous Study

Teas (1921) made no mention of occurrences of sand or gravel in the Coastal Plain of Jones County.

Present Study

The soil series used in targeting sites in Jones County was Lakeland, which is present sporadically throughout the county. There were no geomorphic features apparent that are indicative of sand or gravel deposits. Two samples were analyzed for construction aggregate in Jones County (Fig. 93, Table 19).

Evaluation

Both samples were taken from preferred soil types. Jon-1 was too fine-grained for use as construction aggregate, and failed ASTM Standard C-33. Jon-2 marginally failed ASTM Standard C-33 but could be upgraded.

Mining Activity

There are no active or recently inactive aggregate operations in Jones County.

Summary Evaluation

The site represented by sample Jon-2 could provide construction aggregate, but supply is limited. The construction material potential for Jones County is considered to be low.

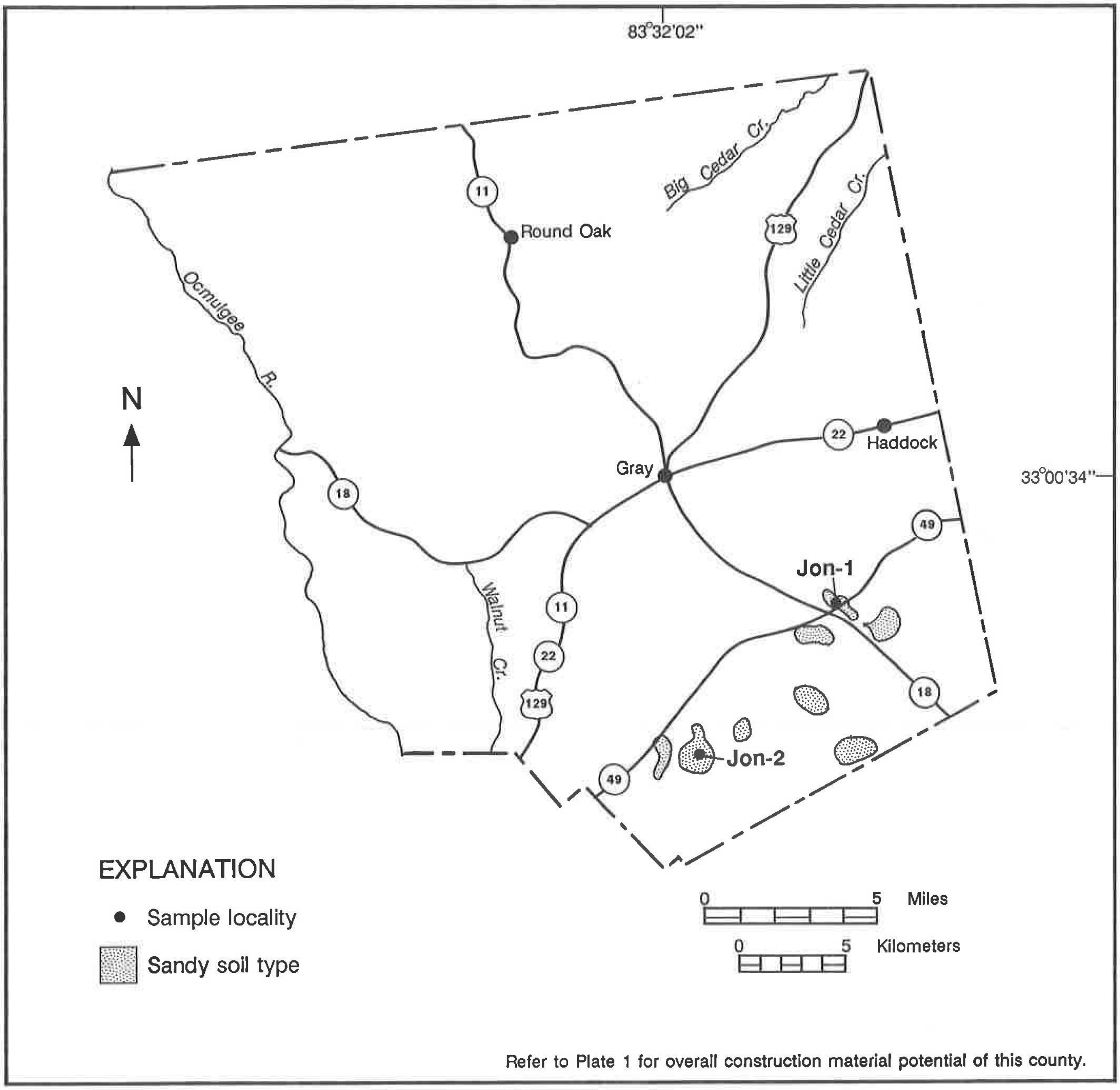


Figure 93. Jones County map.

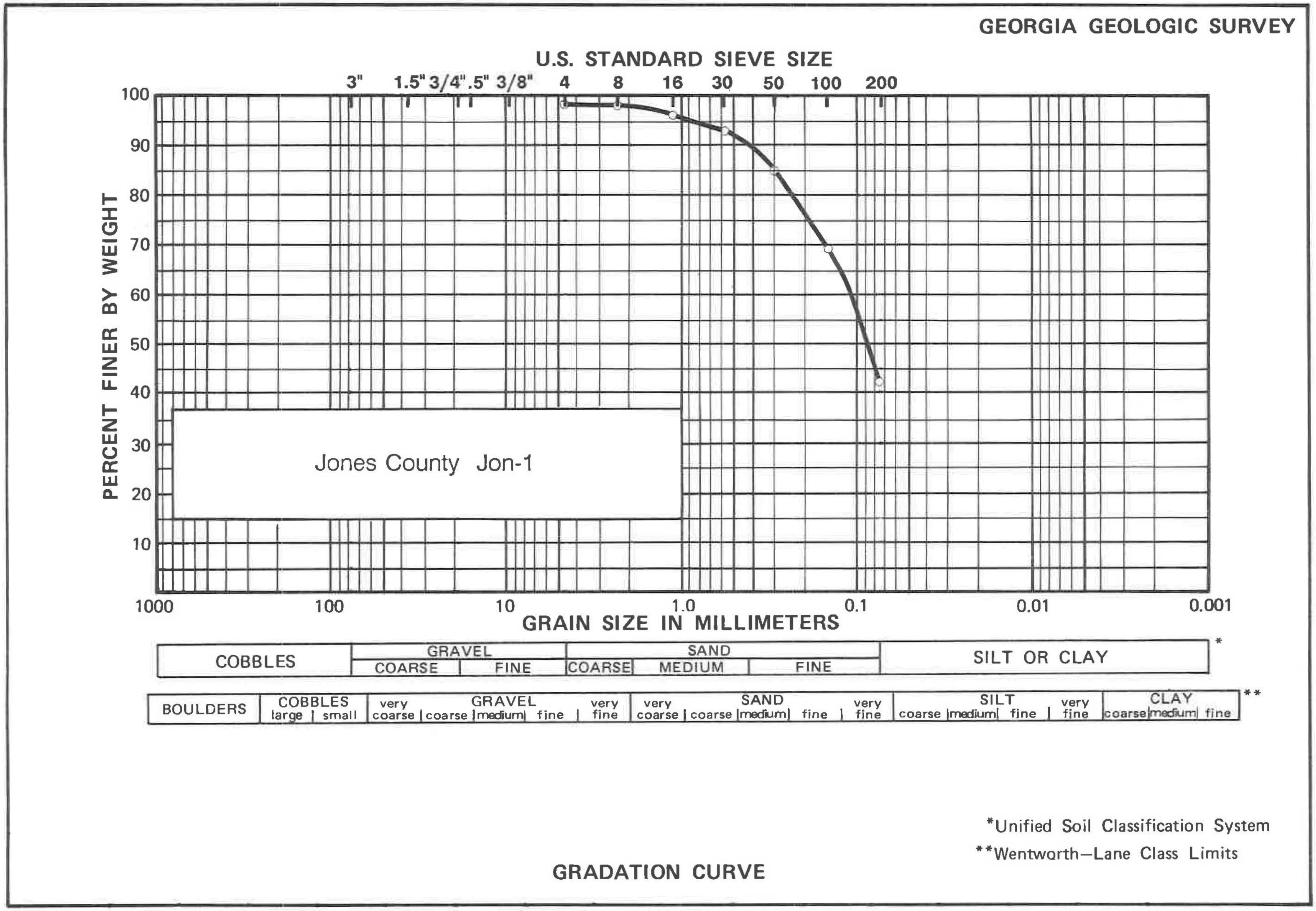


Figure 94. Size distribution curve of Sample Jon-1.

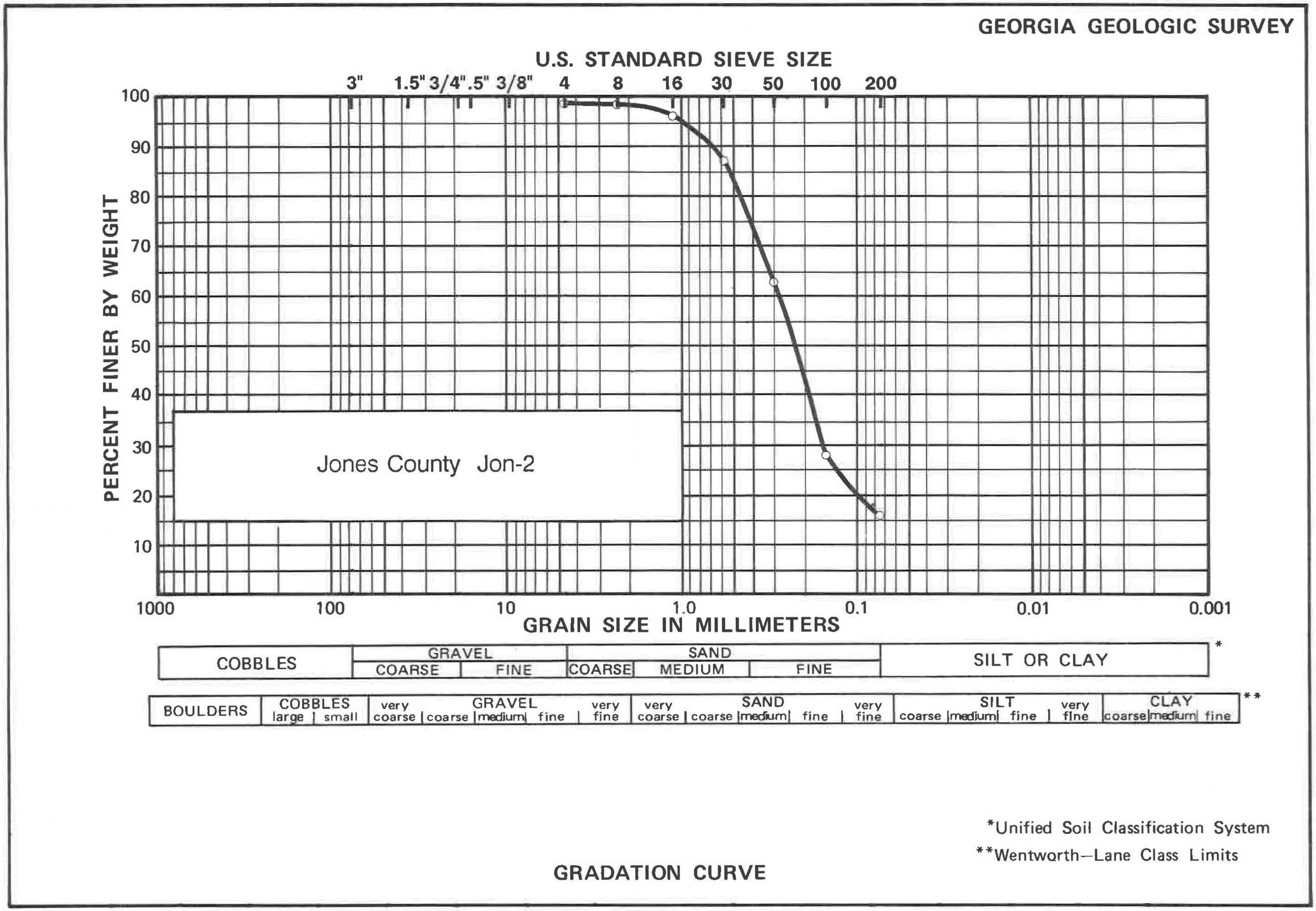


Figure 95. Size distribution curve of Sample Jon-2.

Table 19. Jones County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Jon-1	4'	auger	4'	1	no	0
Jon-2	5.5'	auger	5.5'	1	no[2]	1

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[2]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

Lanier County

Geology and Physiography

The surficial sediments of Lanier County are derived from the Altamaha Formation and the Miccosukee Formation. Lanier County lies within the Coastal Plain Province and almost entirely within the Tifton Upland District with a small portion being in the Okefenokee Basin.

Previous Study

Teas made no mention of sand or gravel deposits in Lanier County.

Present Study

The soil series used in targeting sites for sampling in Lanier County were Fuquay, Mascotte, and Rutlege. This is present at higher elevations near streams. The geomorphic features targeted were the sand hills along the Alapaha River. Two sites were sampled for construction aggregate in Lanier County (Fig.96, Table 20).

Evaluation

Sample Lan-1 was taken from a targeted geomorphic feature. This sample failed to meet ASTM Standard C-33, because the material is too fine-grained. Sample Lan-2 was taken from a preferred soil type. This sample was too well-sorted to meet ASTM Standard C-33.

Mining Activity

There are no active or recently inactive aggregate operations in Lanier County.

Summary Evaluation

There is no evidence that any significant amount or quality of construction material exists in Lanier County. Therefore, the construction mate-

Table 20. Lanier County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Lan-1	8'	auger	8'	1	no	0
Lan-2	4'	auger	4'	1	no	0

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

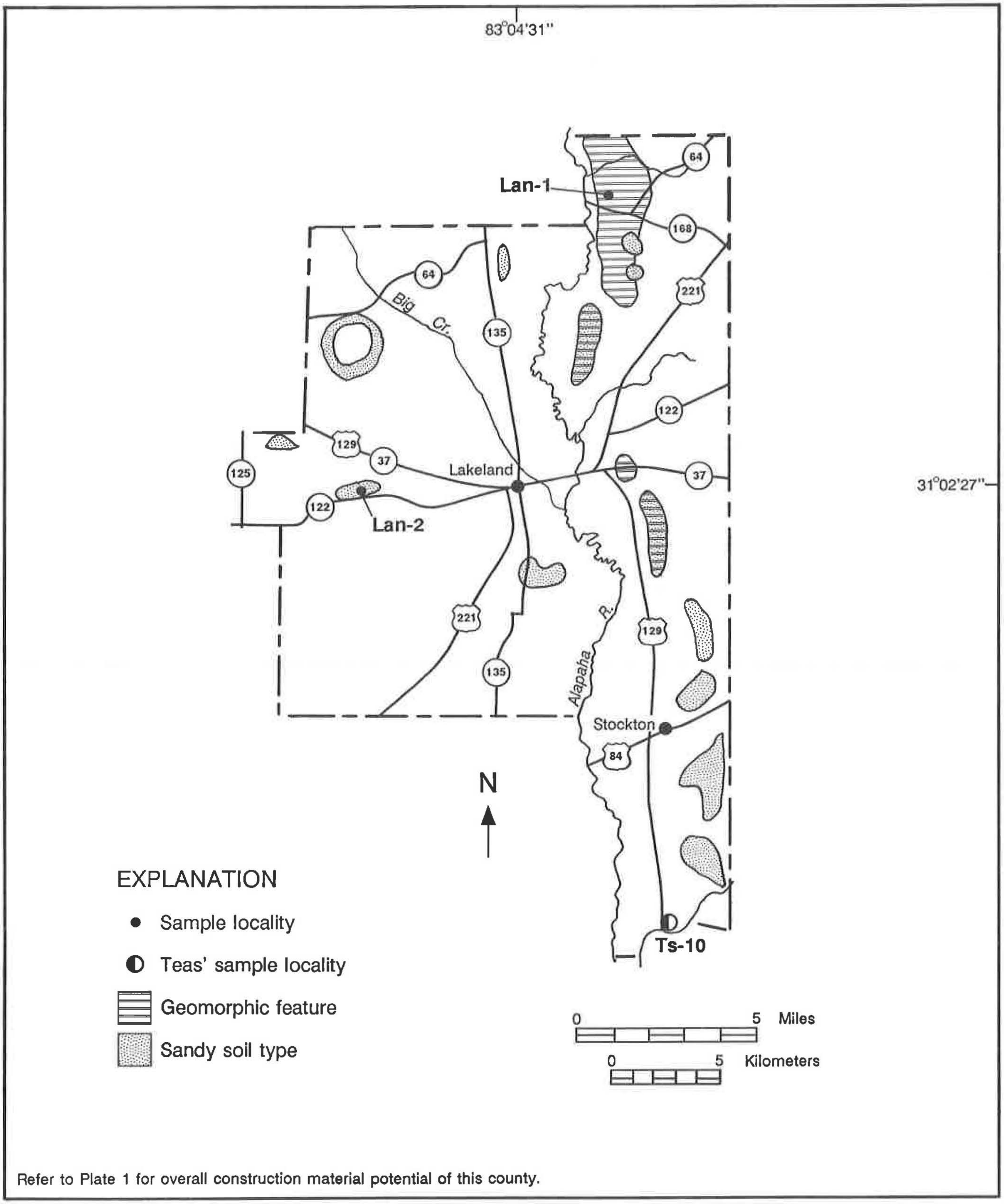


Figure 96. Lanier County map.

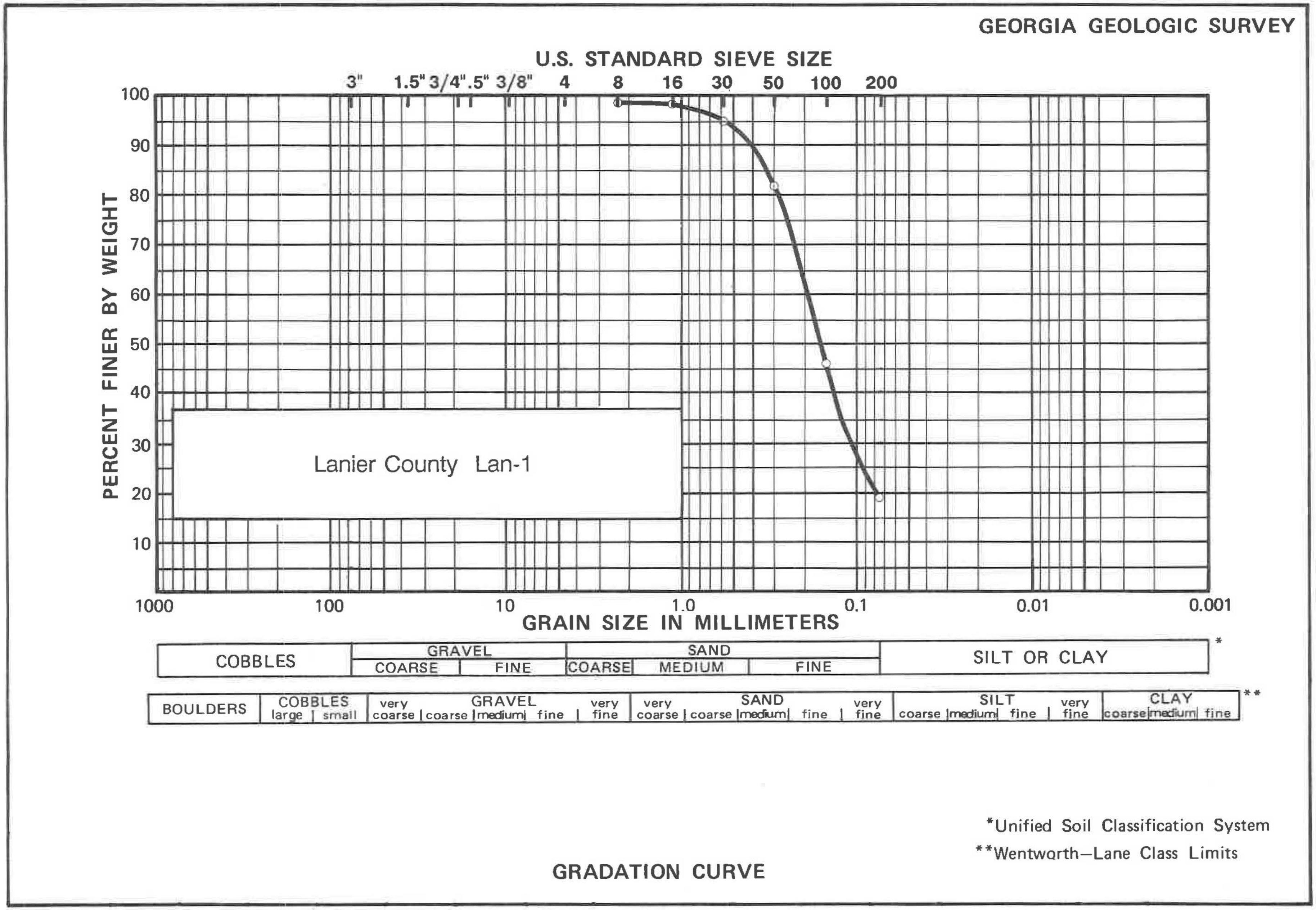


Figure 97. Size distribution curve of Sample Lan-1.

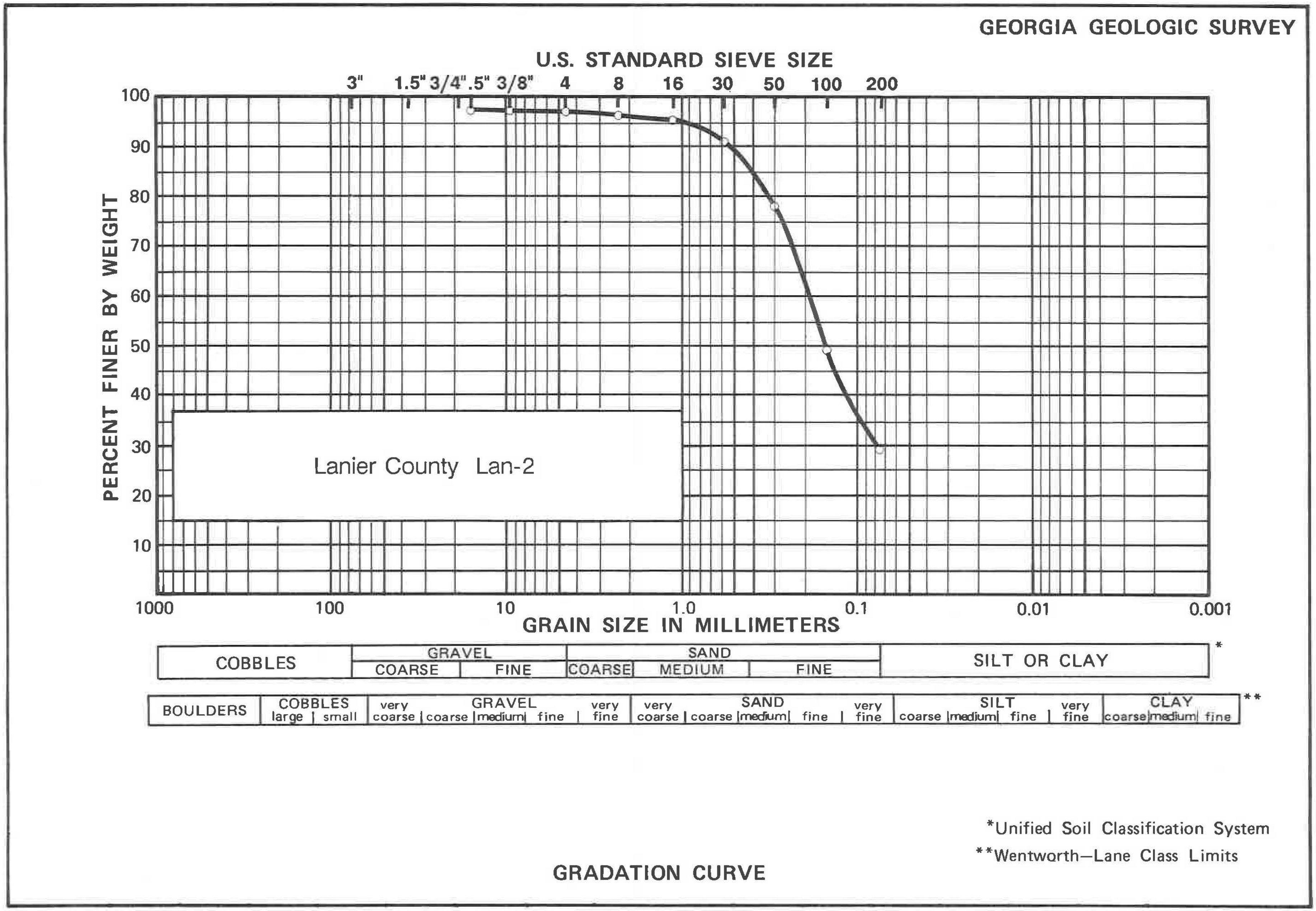


Figure 98. Size distribution curve of Sample Lan-2.

rial potential for Lanier County is considered to be low.

Laurens County

Geology and Physiography

The surficial sediments of Laurens County are derived from the Altamaha Formation, the Barnwell Group, and Quaternary alluvium. Laurens County lies within the Vidalia Upland and Fall Line Hills Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 211) noted an extensive occurrence of sand at what is now East Dublin (Fig.99, Ts-31). Sand was being mined from this locality during the time of his study. Also noted was the occurrence of coarse sand in the flood plain and sand bars of the Oconee River (Teas, 1921, p. 212). Teas (1921, p. 213) reported a gravel deposit on the Carter property (Fig.99, Ts-32) that covers 3000 acres and is 2 to 5 feet thick.

Present Study

The soil association used in targeting sites for sampling in Laurens County was #24 (see p. 7) and is present as a floodplain deposit east of the Oconee River. Geomorphic features noted were the sand hills and sand bars present along the Oconee River. Five sites in Laurens County were sampled and analyzed for construction aggregate potential (Fig.99, Table 21).

Evaluation

Sample Lau-1 was taken from a preferred soil type. Analysis shows that the material is too well-sorted and too fine-grained for use as construction aggregate. Sample Lau-5 was also taken from a preferred soil type. Sample Lau-4 was taken from an occurrence of sand reported in the unpublished files at the Geologic Survey. Although neither Lau-4 or Lau-5 met ASTM Standard C-33, the material could be upgraded for use as construction aggregate.

Samples Lau-2 and Lau-3 were taken at the site of a sand pit operated by Holmes Co. (Fig.99, I-156), which also is a site noted by Teas (1921). Sample Lau-2 is representative of the entire site. Sample Lau-3 represents a thin, continuous gravel layer. Both of these samples marginally failed ASTM Standard C-33 and could be upgraded. This material has been used in the recent past for aggregate.

Mining Activity

Holmes Sand and Gravel Co. recently operated a pit at East Dublin, (Fig.99, I-156) but no information is available about their operation. C.M.G. Co. (Fig.99, F-489) operated a pit for producing fill material, but no other information is available.

Table 21. Laurens County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Lau-1	7'	auger	12'	1	no	0
Lau-2	25'	trench	25'	2	no[4]	2
Lau-3	1'	trench	1'	2	no[4]	2
Lau-4	5'	trench	5'	2	no[4]	2
Lau-5	15'	auger	15'	1	no[4]	1

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[4]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

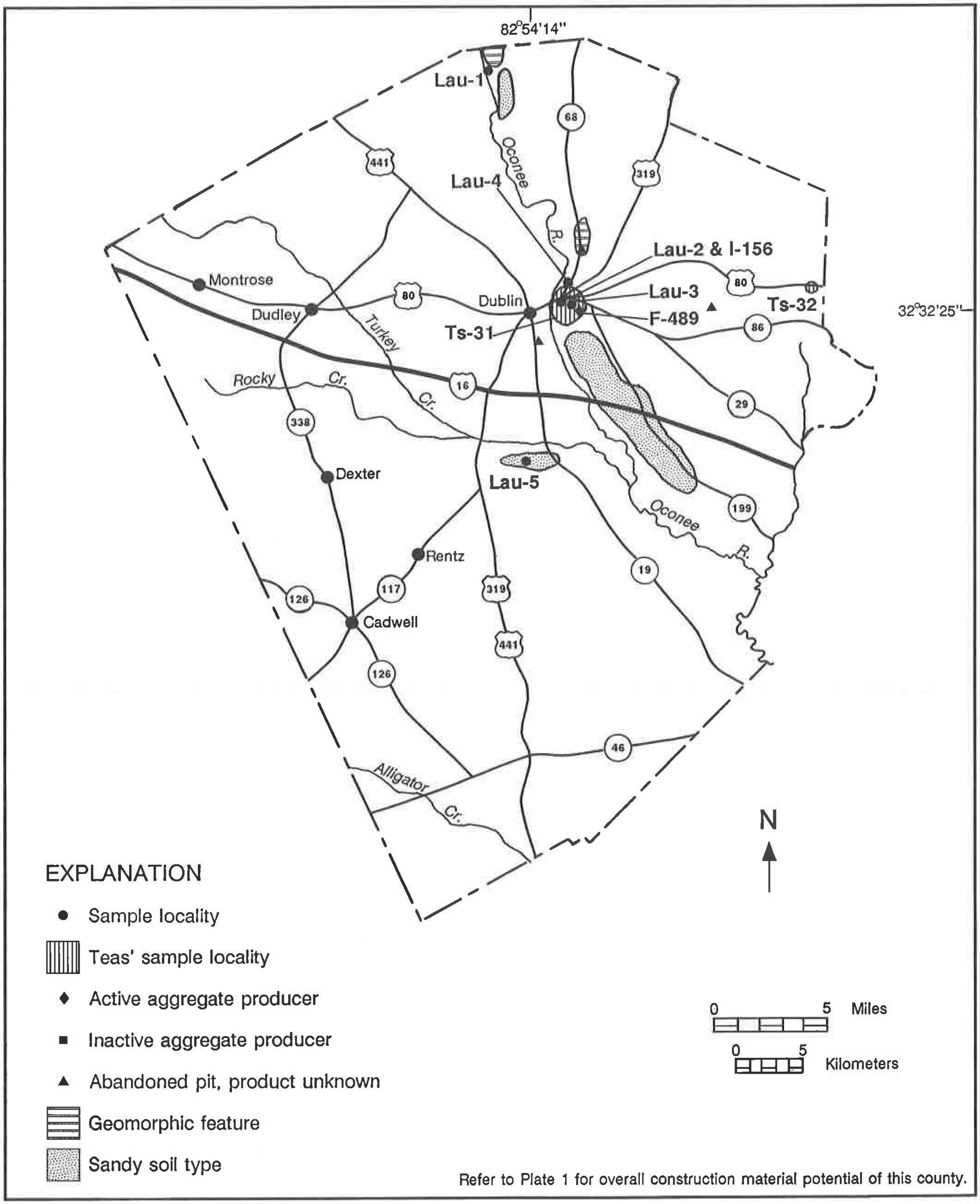


Figure 99. Laurens County map.

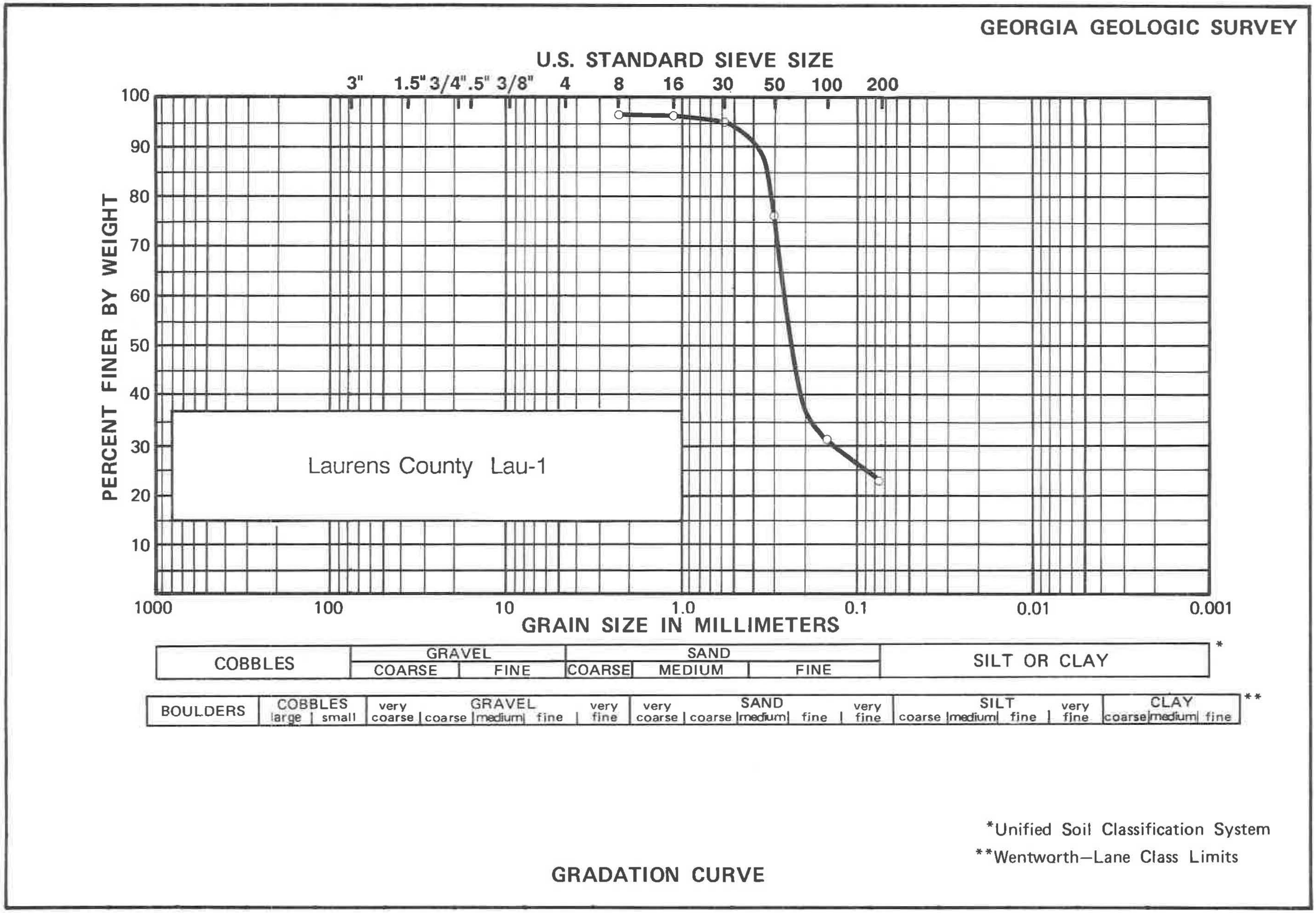


Figure 100. Size distribution curve of Sample Lau-1.

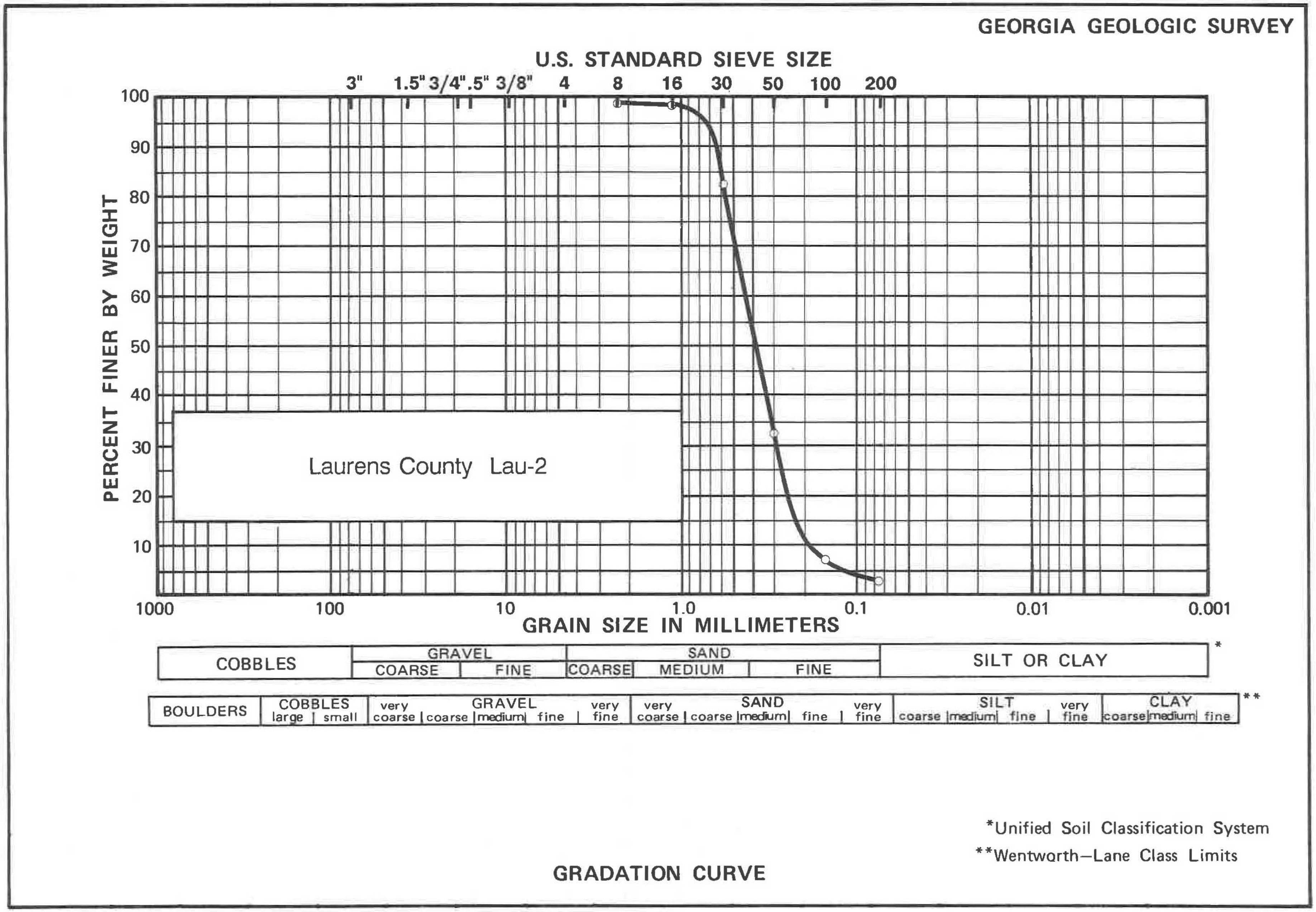


Figure 101. Size distribution curve of Sample Lau-2.

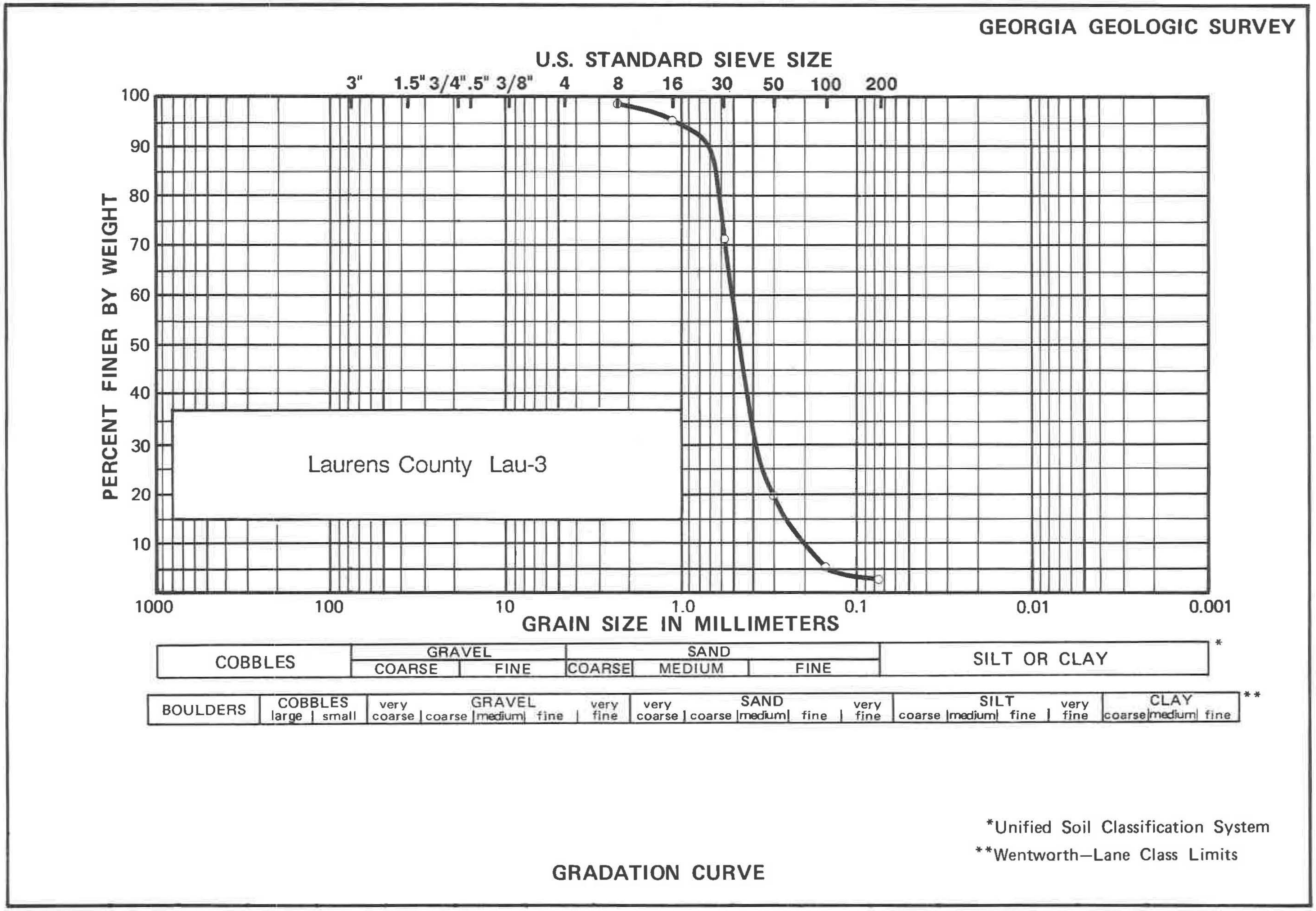


Figure 102. Size distribution curve of Sample Lau-3.

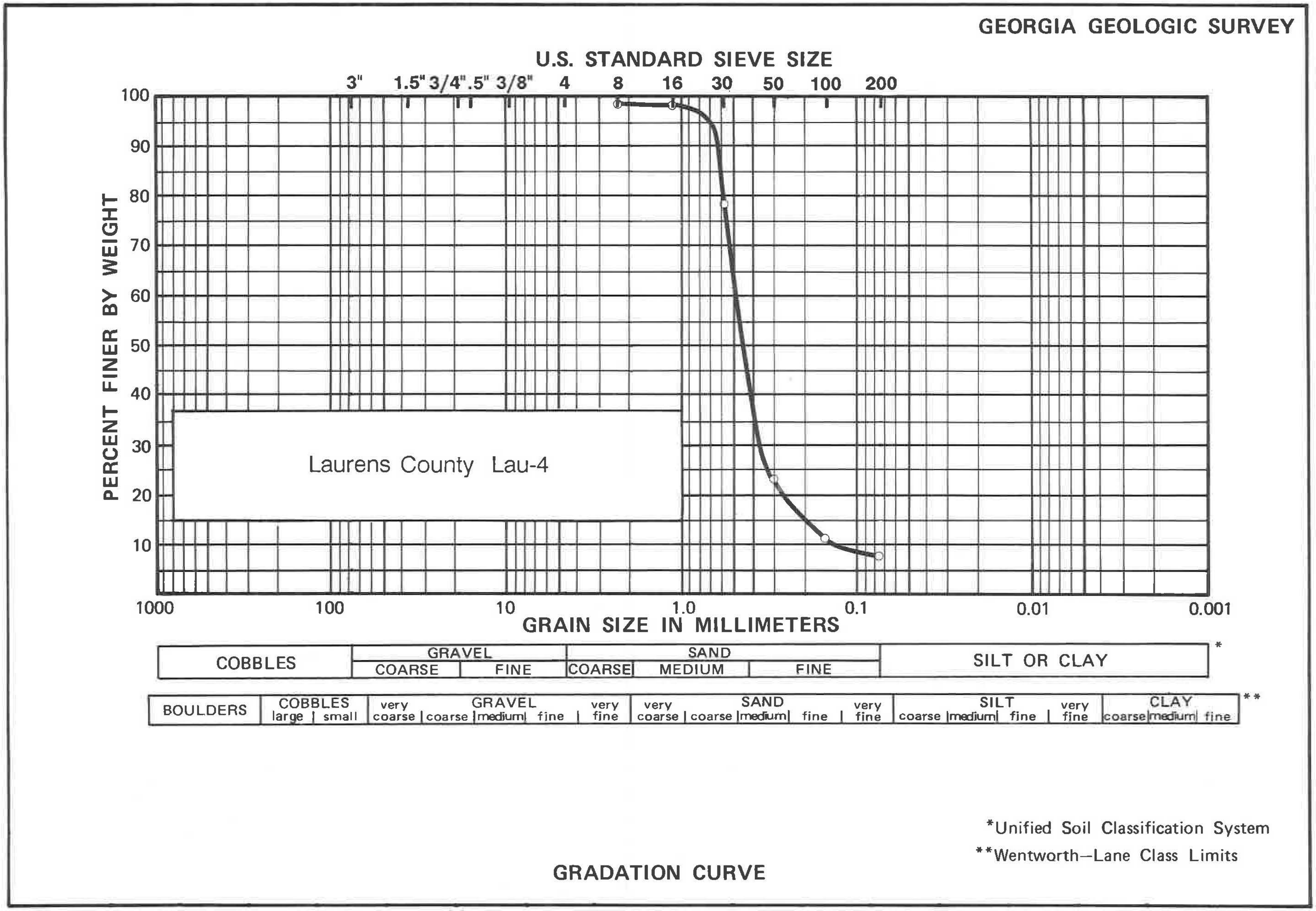


Figure 103. Size distribution curve of Sample Lau-4.

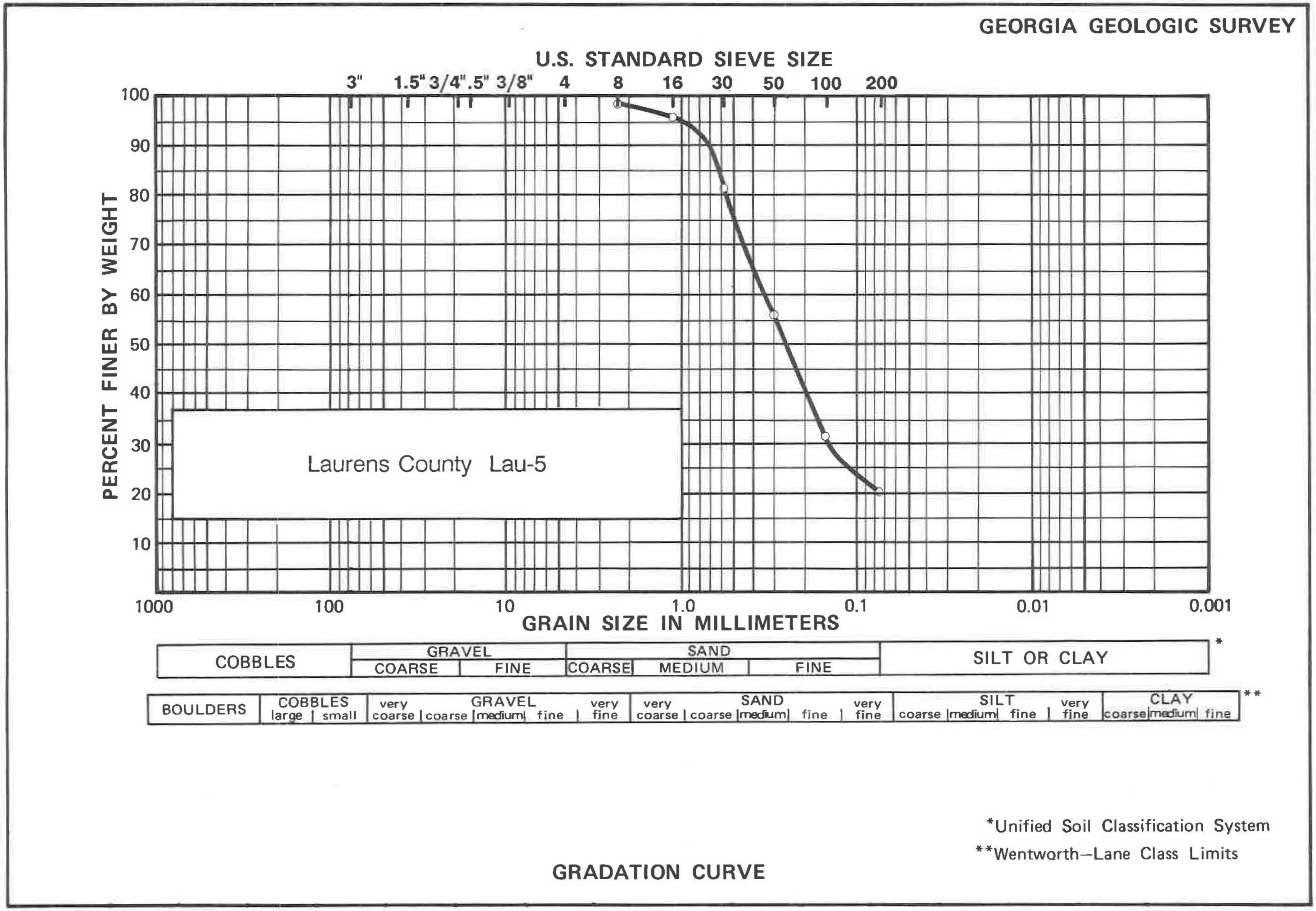


Figure 104. Size distribution curve of Sample Lau-5.

Summary Evaluation

The site represented by Lau-2 and Lau-3 is the location of Holmes Sand and Gravel Co. This site offers the best possibility for aggregate production in Laurens County. The potential for aggregate production in Laurens County is considered to be moderate.

Lowndes County

Note: A description of the aggregate potential for that part of Lowndes County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 107-112).

Geology and Physiography

The surficial sediments of Lowndes County are derived from the Miccosukee Formation. Lowndes County lies within the Tifton Upland District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 216) noted that coarse sand is present in the Withlacoochee River bed.

Present Study

The soil association used in targeting sites in Lowndes County was #24 (see p. 7) and is found throughout the county along streams. There were no apparent geomorphic features indicative of suitable sand or gravel occurrences noted. Four sites were sampled for analysis in Lowndes County (Fig.105, Table 22).

Evaluation

Samples Low-1, Low-3, and Low-4 were taken from preferred soil types. Sample Low-2 was taken from a preferred soil type and in the vicinity of an aggregate producer (Fig.105, #659). None of the samples met ASTM Standard C-33. Low-1 and Low-4 are too fine-grained and too well-sorted for use as construction aggregate. Low-2 and Low-3 are too well-sorted for use as construction aggregate.

Mining Activity

There are four active producers in Lowndes County; however, all produce only fill material. Richard DeLoach (Fig.105, F-659) operates an 8 acre pit in Lowndes County. Reames and Son Construction operates three pits (Fig.105, F-884, F-827, F-828) of 10, 25, and 35 acres, respectively. Scruggs Co. owns a pit (Fig. 105, F-884) but no information about its operation was available for this study.

Summary Evaluation

None of the sites sampled in Lowndes County offer good possibilities for construction aggregate production. The only mining activity is for fill material. The construction material potential for this part of Lowndes County is considered to be low.

Table 22. Lowndes County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Low-1	4'	auger	0	1	no	0
Low-2	8'	auger	8'	2	no	1
Low-3	8'	auger	8'	2	no	0
Low-4	8'	auger	8'	1	no	0

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

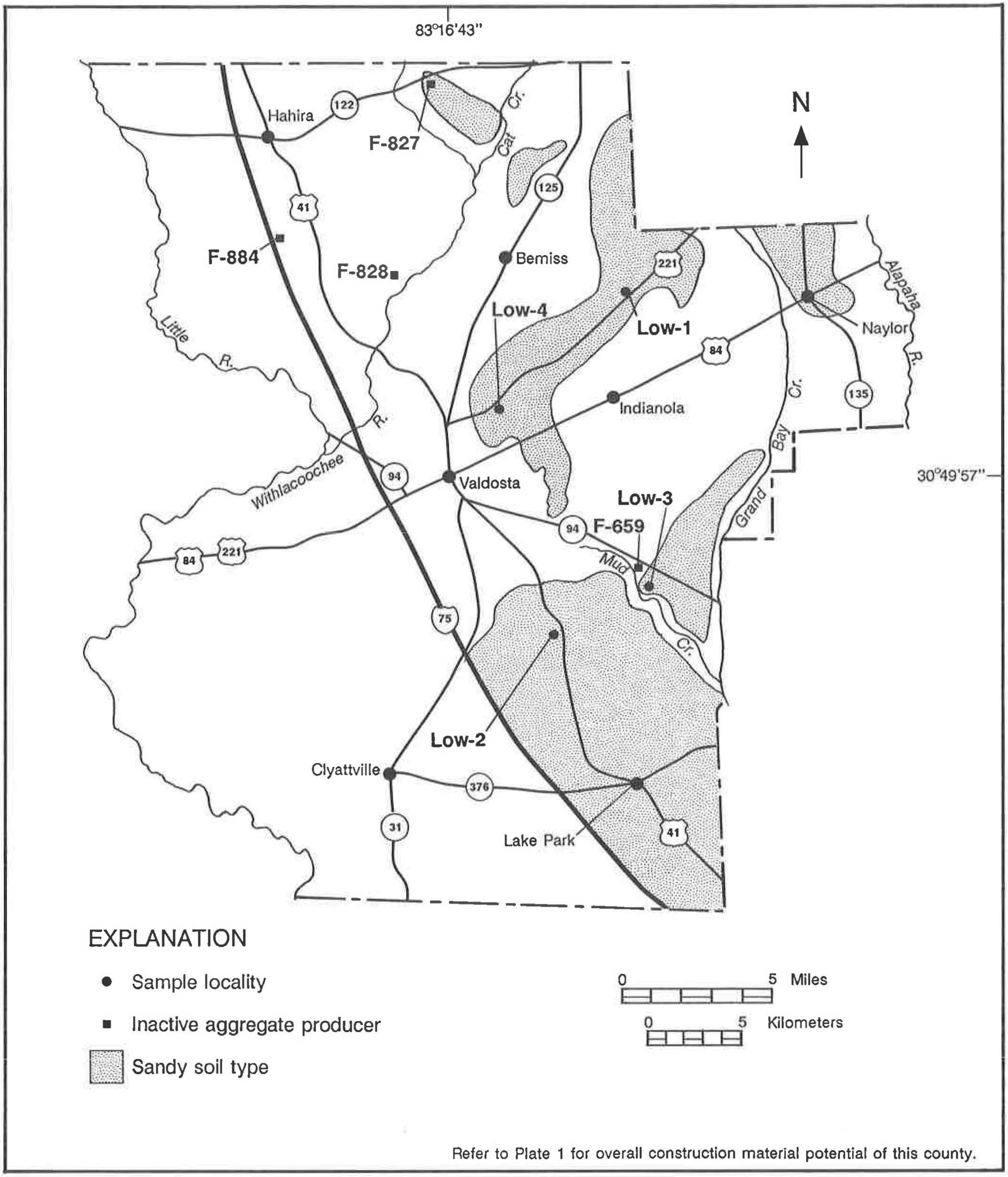


Figure 105. Lowndes County map.

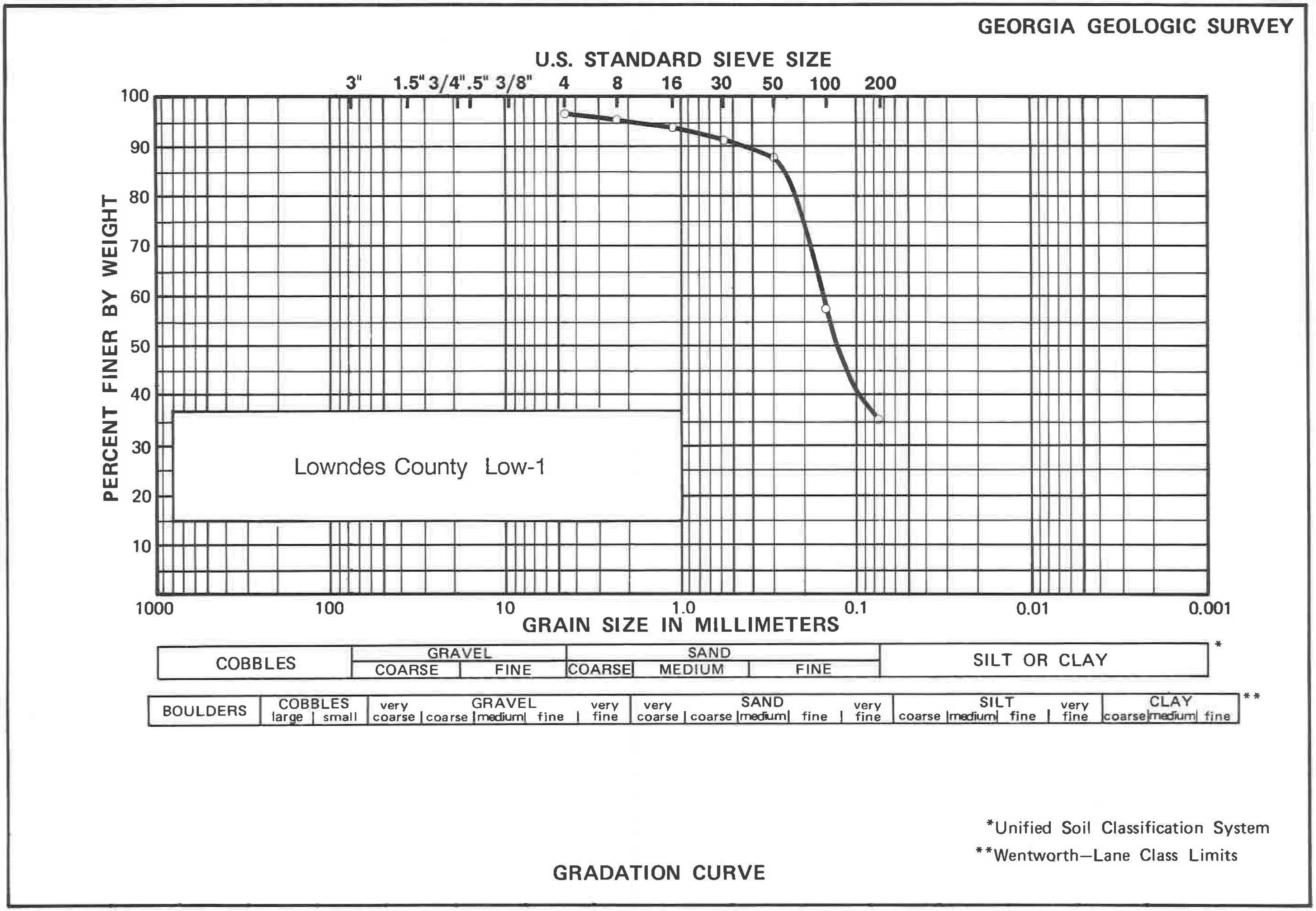


Figure 106. Size distribution curve of Sample Low-1.

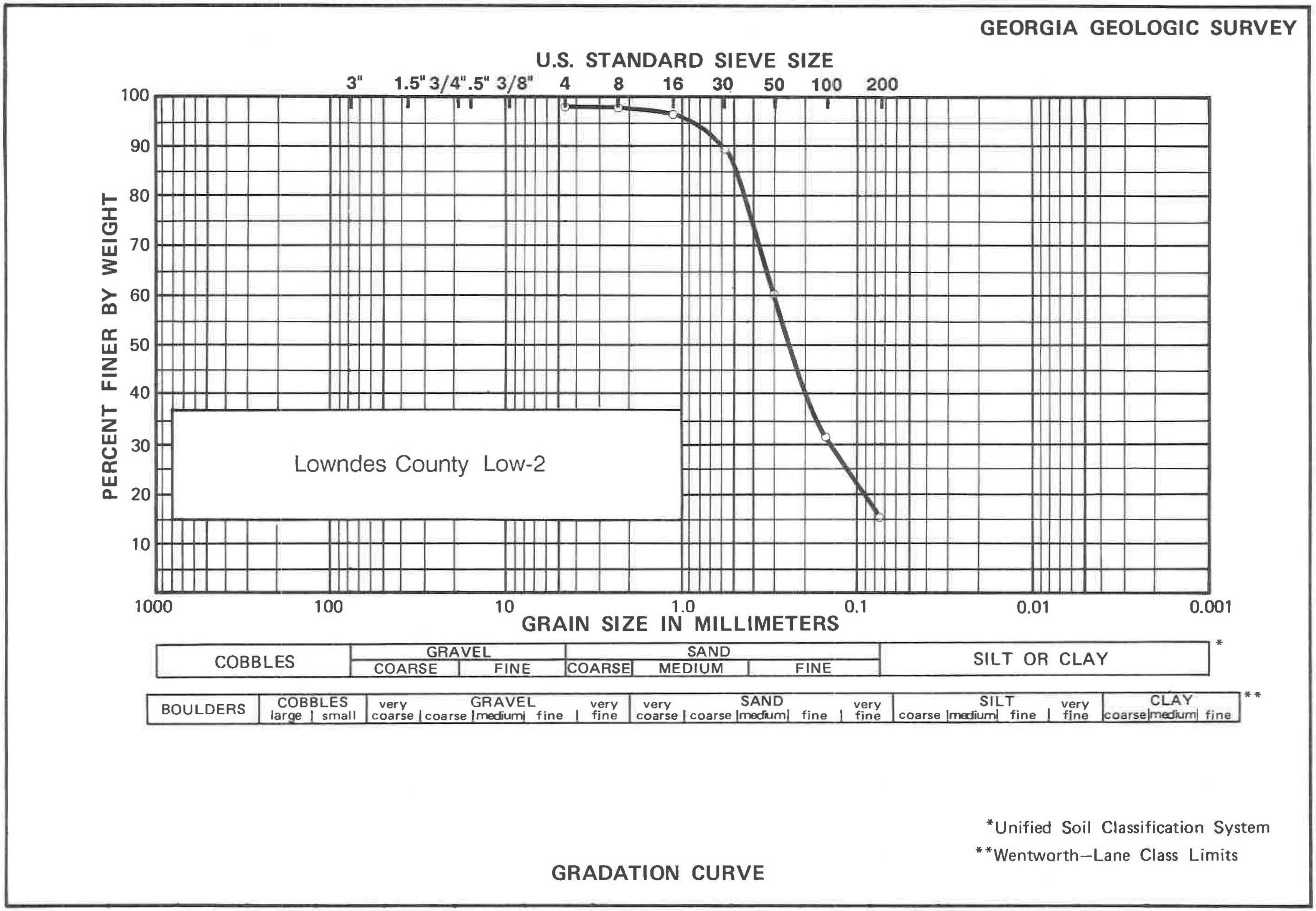


Figure 107. Size distribution curve of Sample Low-2.

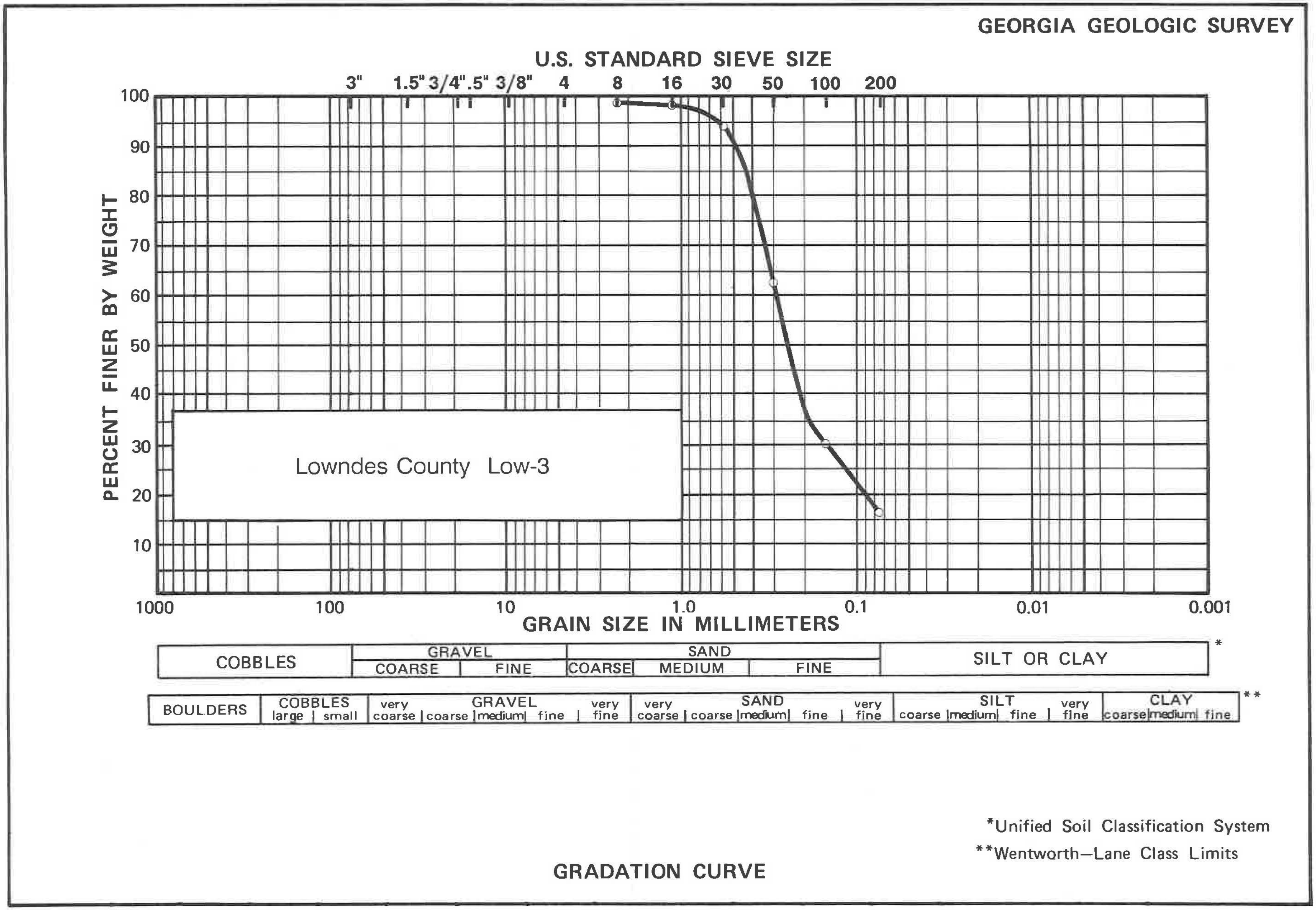


Figure 108. Size distribution curve of Sample Low-3.

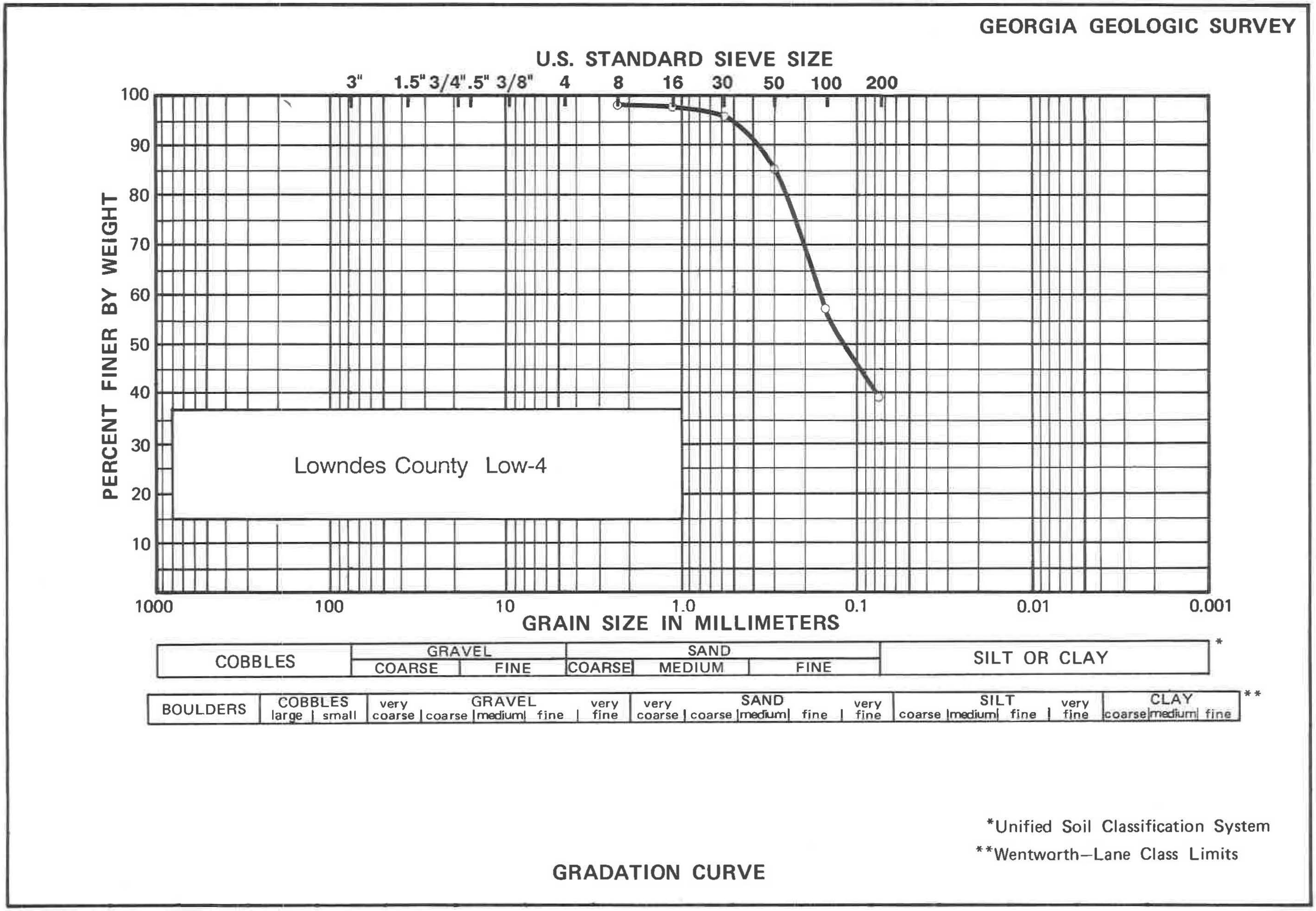


Figure 109. Size distribution curve of Sample Low-4.

Montgomery County

Geology and Physiography

The surficial sediments of Montgomery County are derived from the Altamaha Formation and Quaternary alluvium. Montgomery County lies within the Vidalia Upland District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 221) mentioned that coarse sand is present in the Oconee River bed.

Present Study

The soil series used in selecting sites for sampling in Montgomery County were Kershaw and Paola, and occur sparsely as isolated bodies. The geomorphic features sited were sand hills and sand bars along the Oconee River. Four samples representing three sites in Montgomery County were analyzed (Fig.110, Table 23).

Evaluation

Sample Mon-3 was taken from a targeted geomorphic feature. The material is too fine-grained and too well-sorted for use as construction aggregate. Samples Mon-1a and Mon-1b were taken from the proximity of a sand pit referenced in Georgia Geologic Survey files. The upper four feet of this sample (Mon-1a) marginally failed to meet ASTM Standard C-33 but could be upgraded. The lower four feet of the sample (Mon-1b) also failed to meet ASTM Standard C-33; the material is too fine-grained. Sample Mon-2 was taken from a preferred soil type; the material marginally failed ASTM Standard C-33 but could be upgraded.

Mining Activity

Montgomery Sand Company, a division of Florida Crushed Stone Co. (Fig.110, A-355), operates a 60 acre pit from a 420-acre tract of land near Mount Vernon and the Oconee River. Mining is done by a suction dredge. Concrete, mortar, trap (for golf course use), and sandblasting sand, in addition to well gravel, is transported by truck from the pit to within a 250-mile radius.

Summary Evaluation

The site represented by sample Mon-2 is a 40 acre tract; the sampled material extends 13 feet in depth. Sample Mon-1a represents a twenty acre tract and extends four feet in depth. Although the material analyzed marginally failed ASTM Standard C-33, both these sites could provide limited amounts of construction aggregate. There is, however, construction aggregate being mined at the Montgomery Sand Company. The construction material potential for Montgomery County is considered to be moderate.

Table 23. Montgomery County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Mon-1a	4'	auger	8'	2	no[3]	2
Mon-1b	4'	auger	8'	2	no	0
Mon-2	13'	auger	13'	1	no[3]	1
Mon-3	6'	auger	6'	1	no	0

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

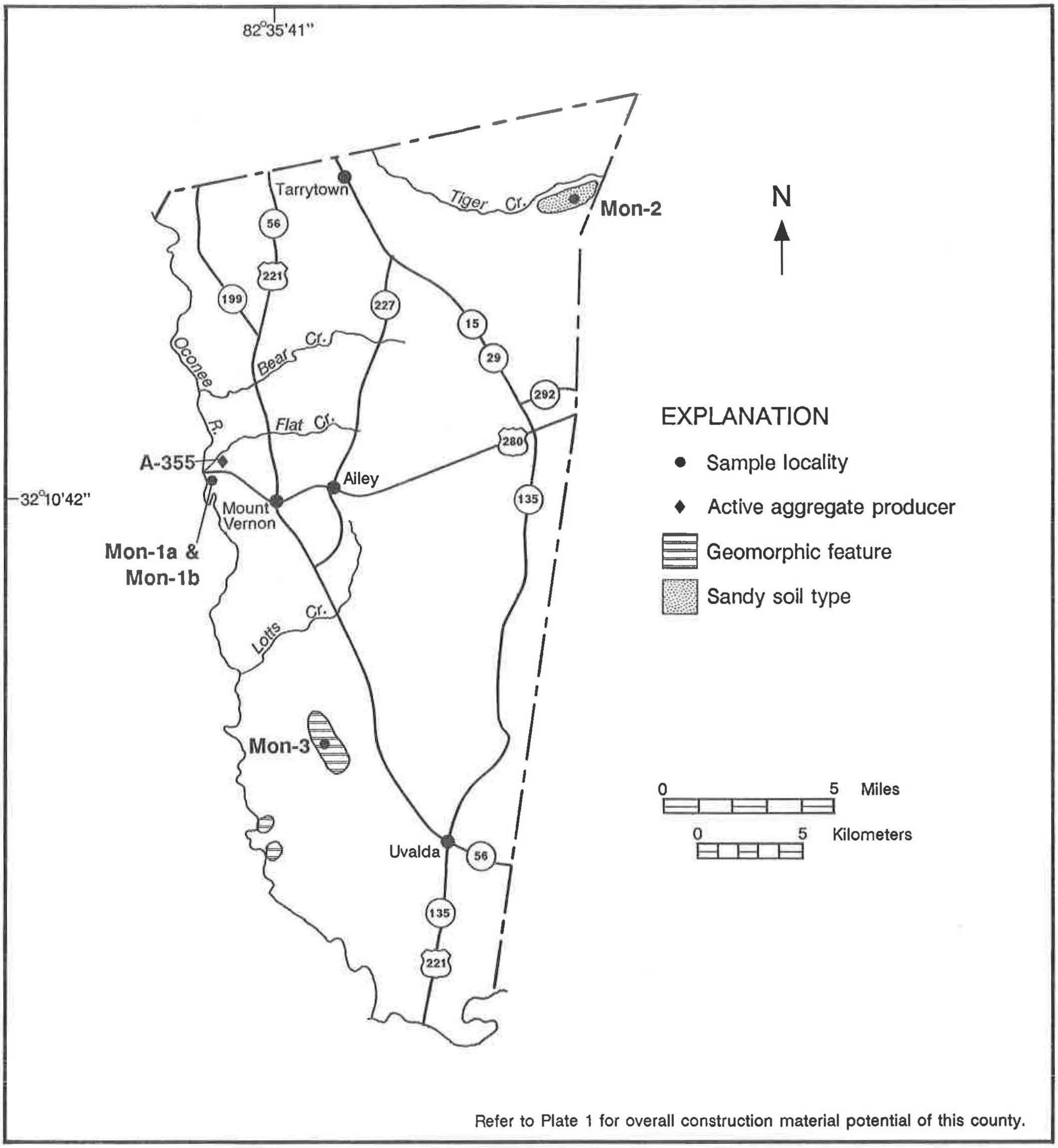


Figure 110. Montgomery County map.

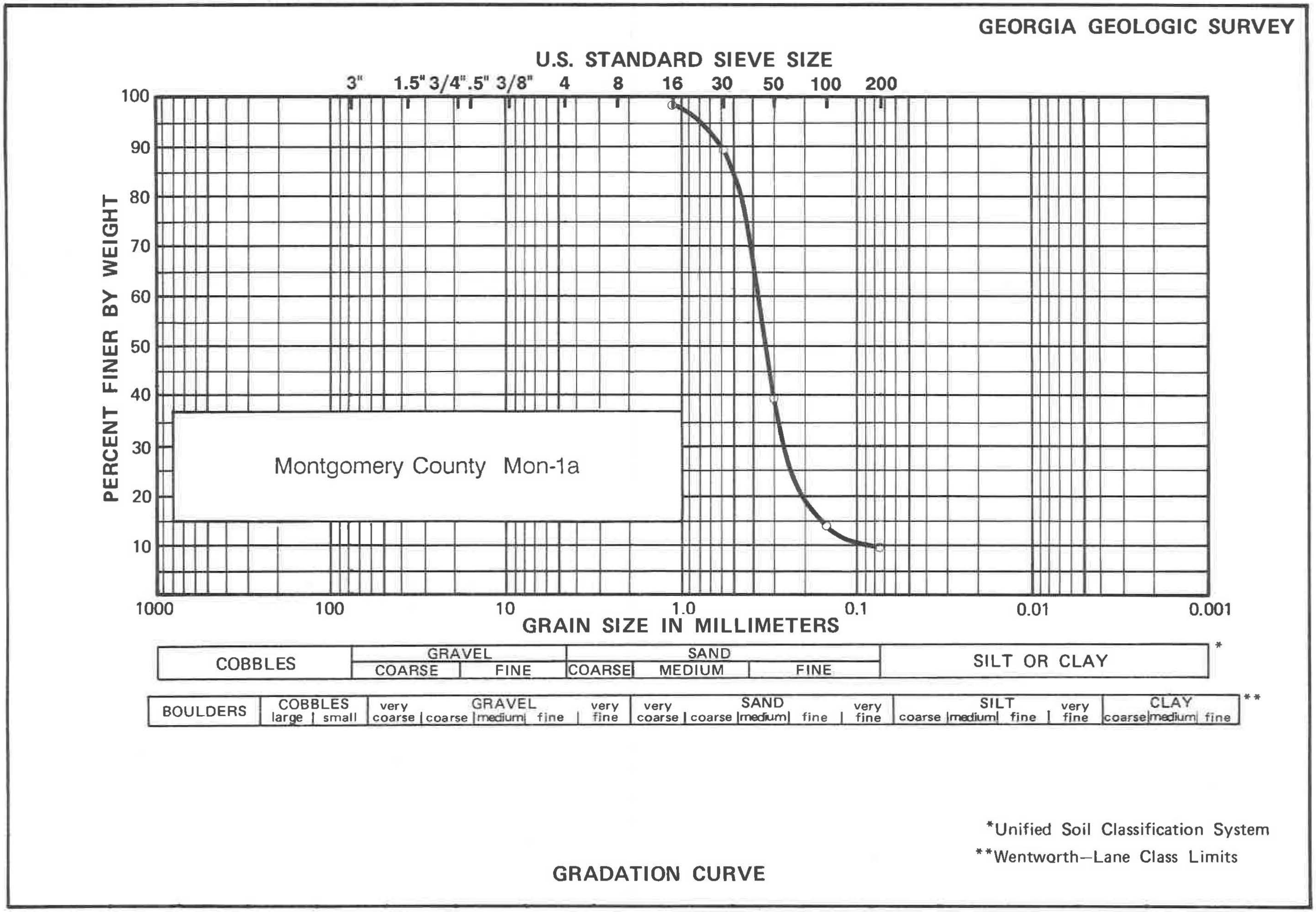


Figure 111. Size distribution curve of Sample Mon-1a.

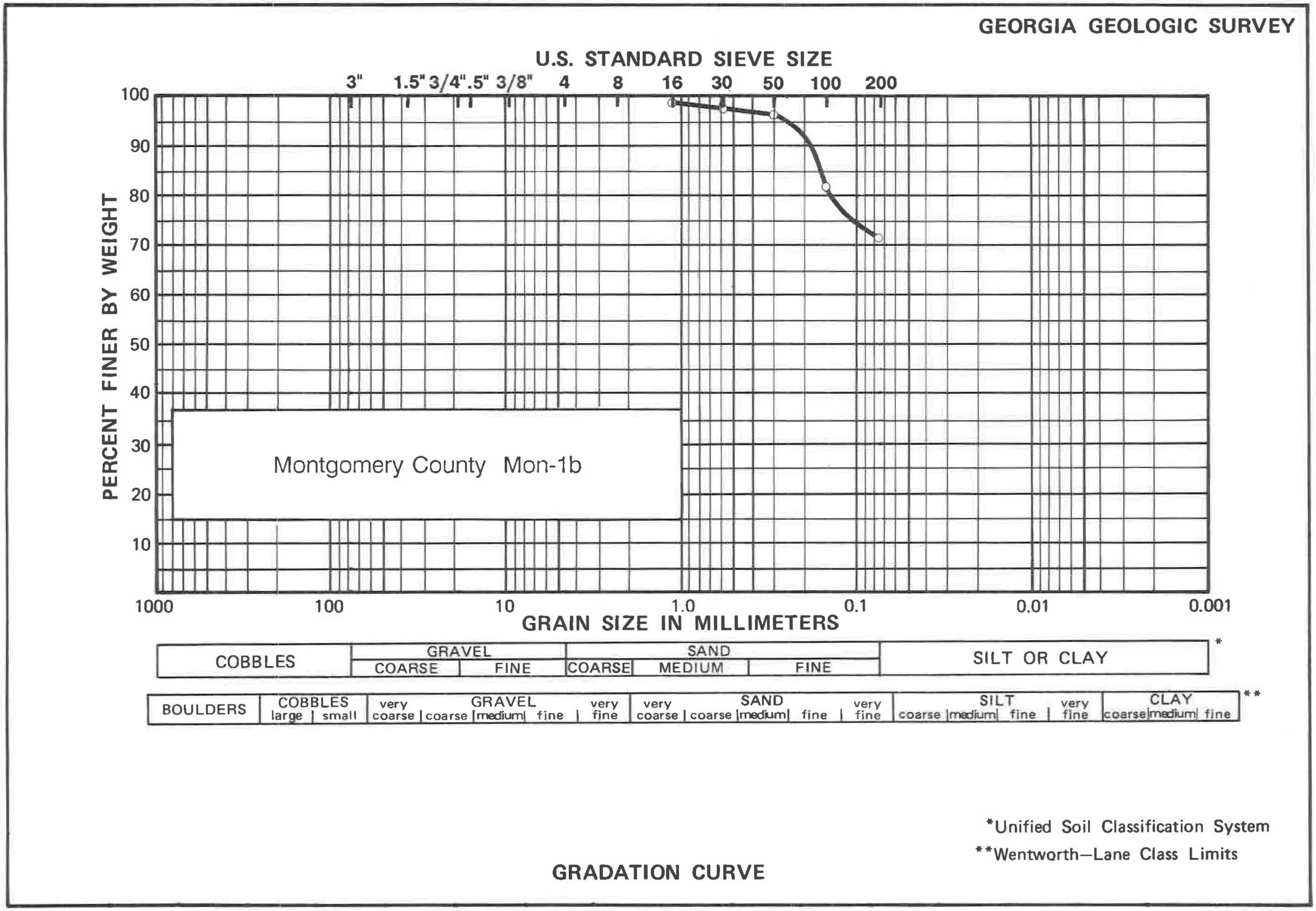


Figure 112. Size distribution curve of Sample Mon-1b.

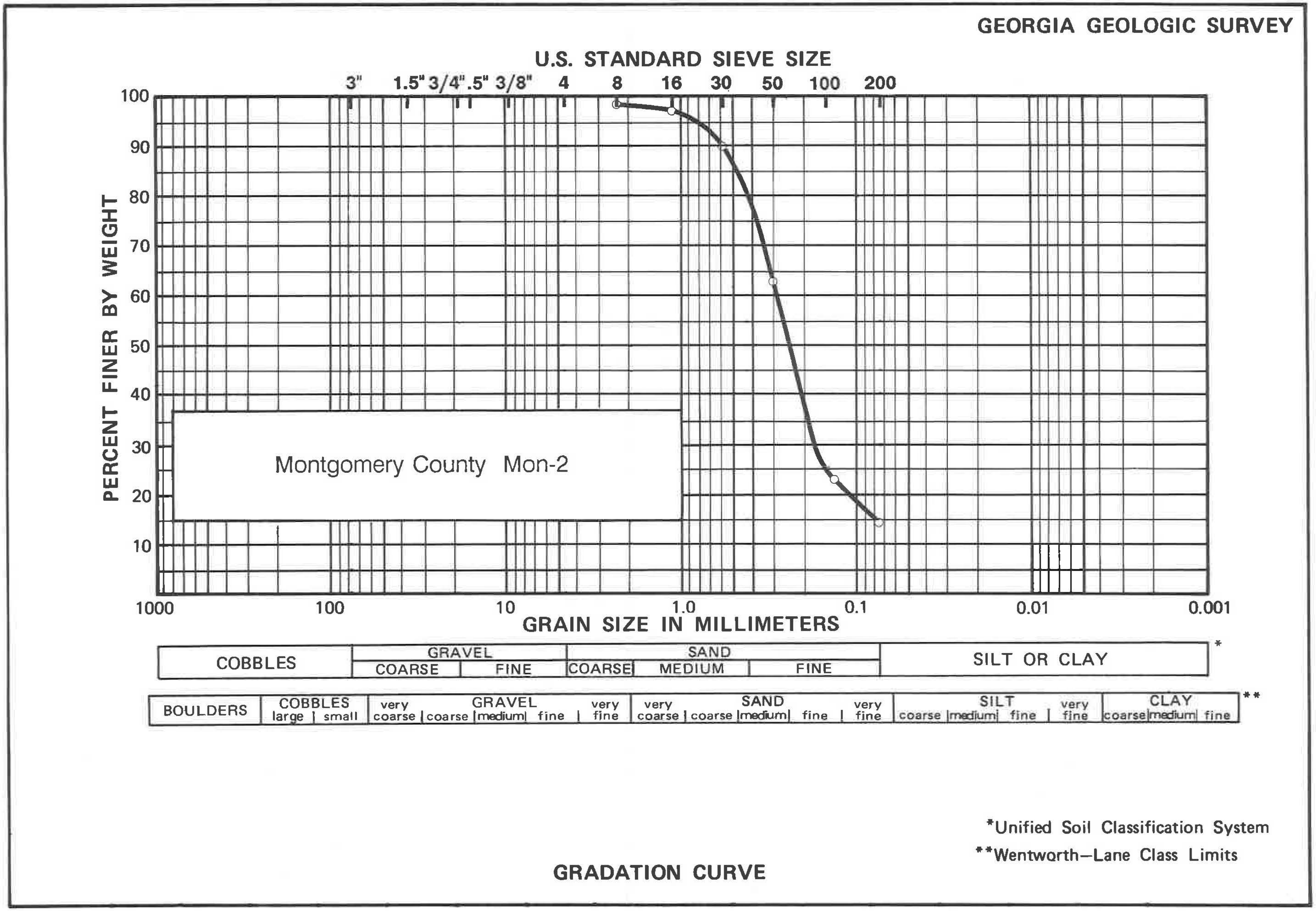


Figure 113. Size distribution curve of Sample Mon-2.

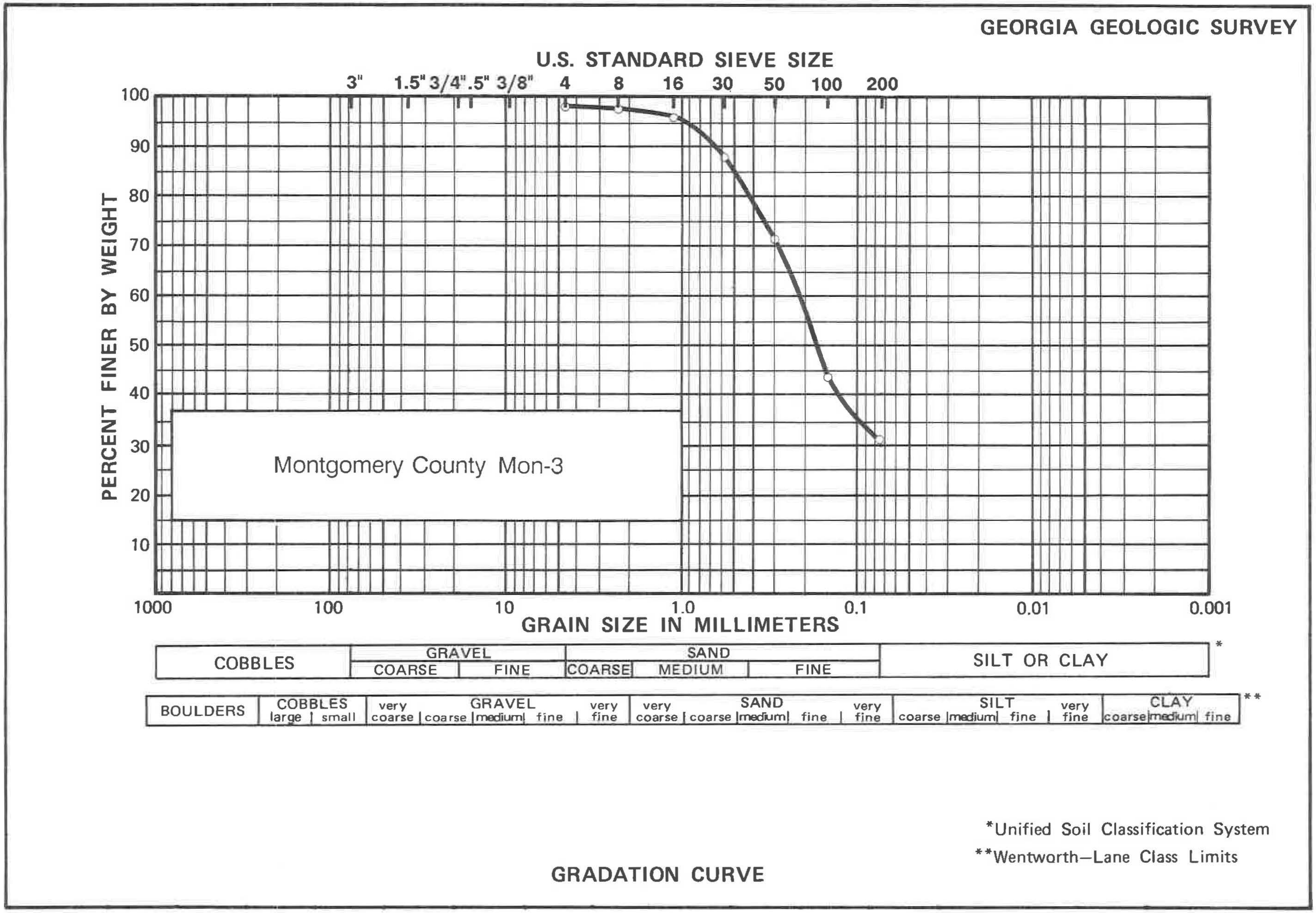


Figure 114. Size distribution curve of Sample Mon-3.

Peach County

Note: A description of the aggregate potential for that part of Peach County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 150-160).

Geology and Physiography

The surficial sediments of Peach County are derived from the Barnwell Group, the Oconee Group and the Marshallville Formation. Peach County lies within the Fall Line Hills and the Fort Valley Plateau Districts of the Coastal Plain Province.

Previous Study

Teas made no mention of sand occurrences in Peach County.

Present Study

The soil series used in targeting sites in Peach County was Lakeland and occurs as isolated bodies near streams. A possible terrace deposit of the Echeconnee Creek is the geomorphic feature targeted. It overlaps a targeted soil body. One site in Peach County was analyzed for construction aggregate (Fig.115, Table 24).

Evaluation

Sample Pch-1 is from a preferred soil body, which corresponds to a targeted geomorphic feature, and is in the vicinity of an inactive sand pit (Fig.115, I-525). The material is too fine-grained, and too well-sorted for use as construction aggregate.

Mining Activity

At one time Southern Aggregate of Augusta operated a sand pit in Peach County (Fig.115, I-525), but it has since been reclaimed and no other information is available.

Summary Evaluation

The site sampled in Peach County evidently would not be a good source for construction material, and there is no mining activity. Therefore, the construction material potential for this part of Peach County is considered to be low.

Pulaski County

Geology and Physiography

The surficial sediments of Pulaski County are derived from deposits of Oligocene age and Quaternary alluvium. This county lies within the Fall Line Hills and Vidalia Upland Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 229-230) noted that the sand bars in the Ocmulgee River were possible sources of aggregate.

Present Study

The soil association used in targeting sites for sampling in Pulaski County was #39 (see p. 7), and is found along the Ocmulgee River, roughly corresponding to the targeted geomorphic features. The geomorphic features noted were the sand hills, terraces, and sand bars along the Ocmulgee River. Five sites were sampled, and analyzed for construction aggregate potential (Fig.117, Table 25).

Table 24. Peach County Sample Data

Sample designation	Depth	Sample type	Minimum thickness of the deposit	Priority of[1] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[1]
Pch-1	8'	auger	8'	3	no	0

[1]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

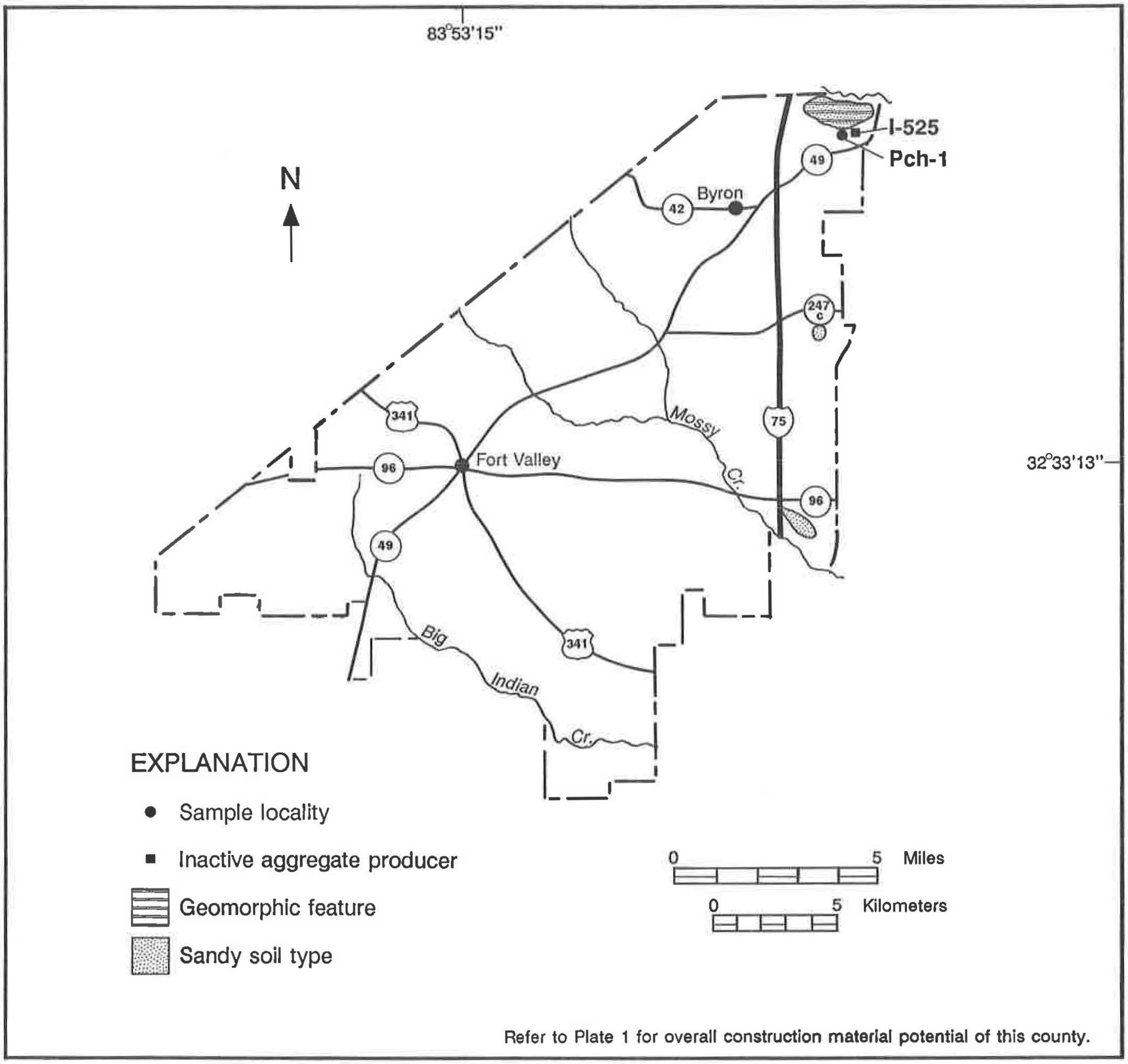


Figure 115. Peach County map.

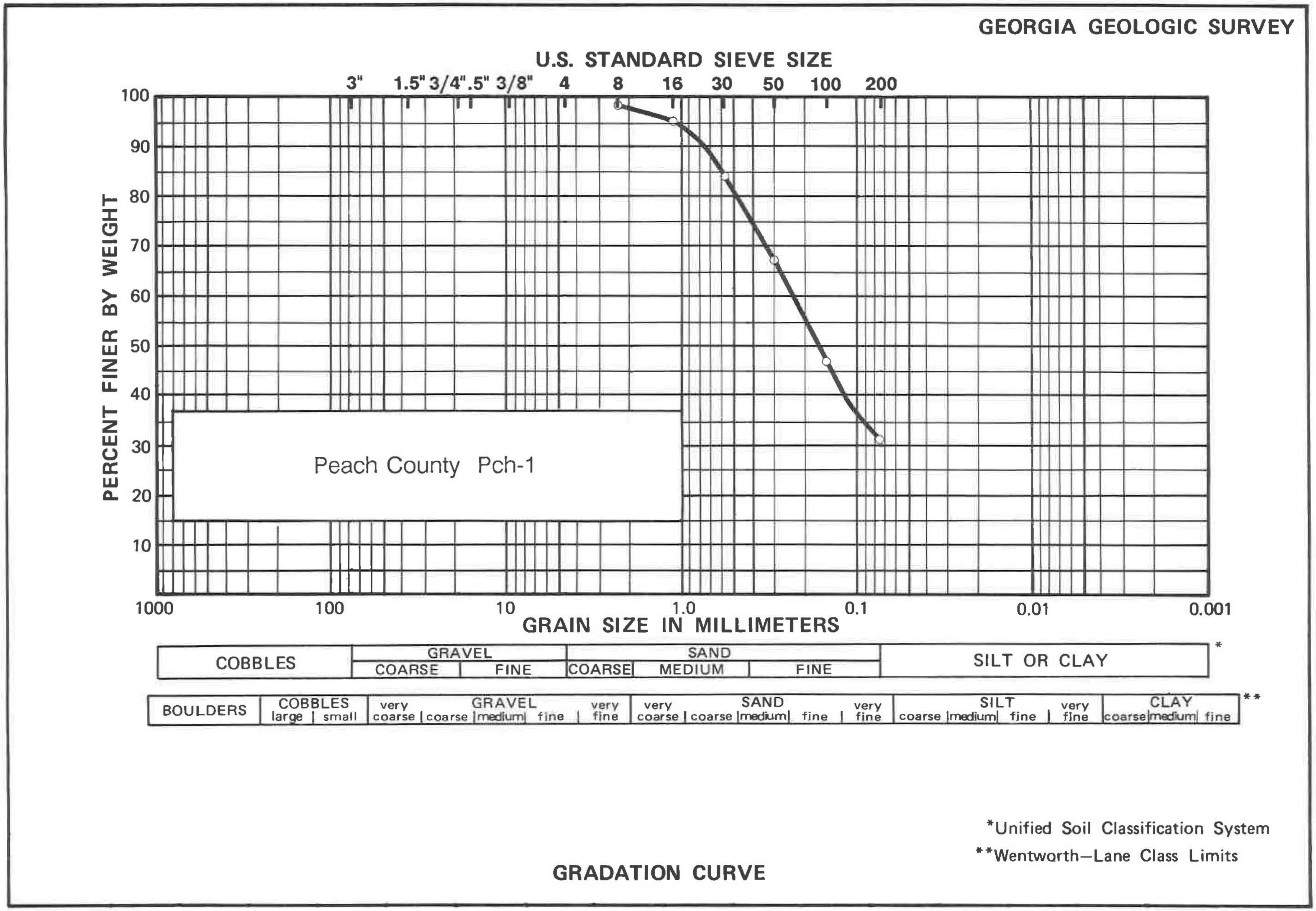


Figure 116. Size distribution curve of Sample Pch-1.

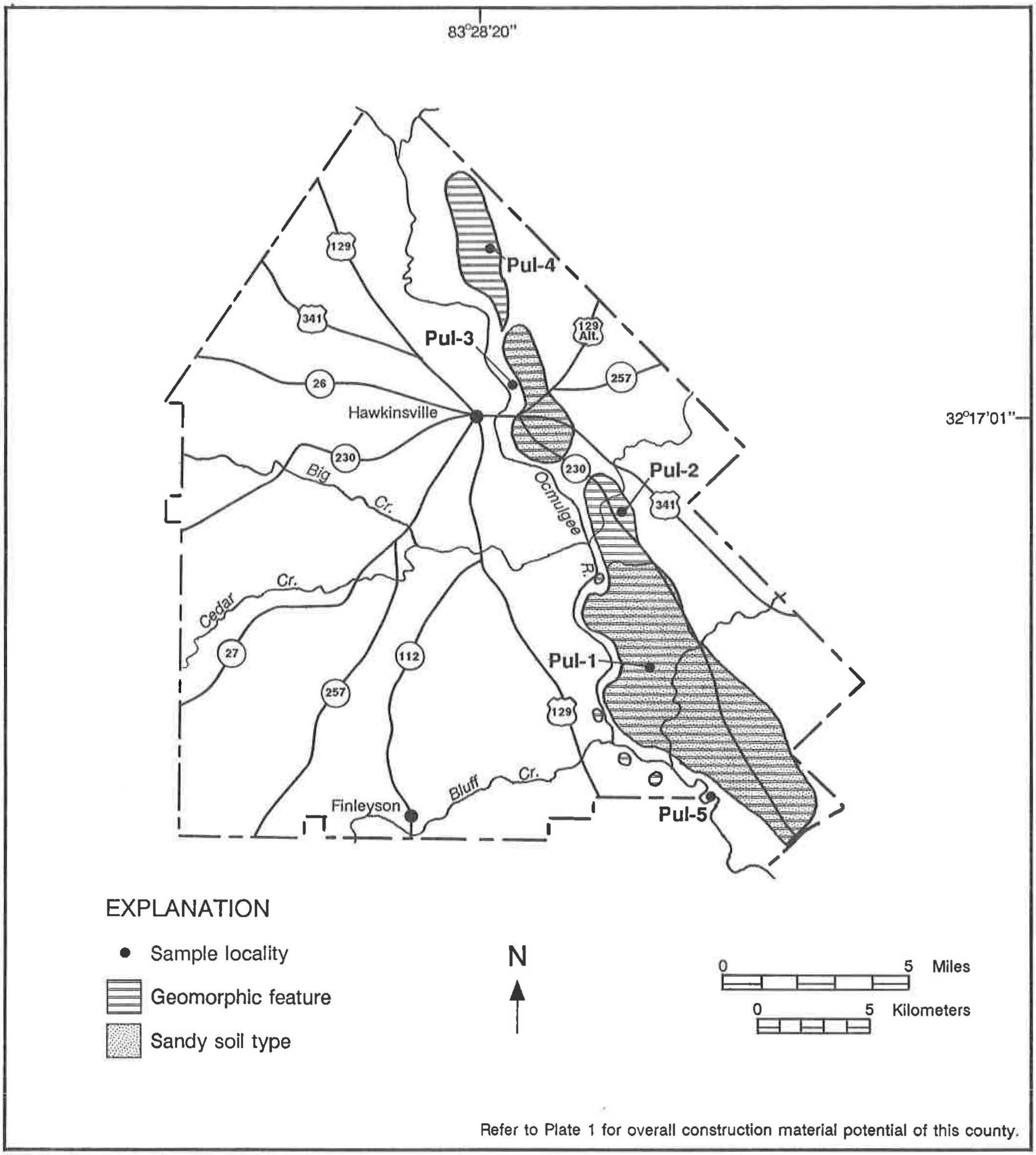


Figure 117. Pulaski County map.

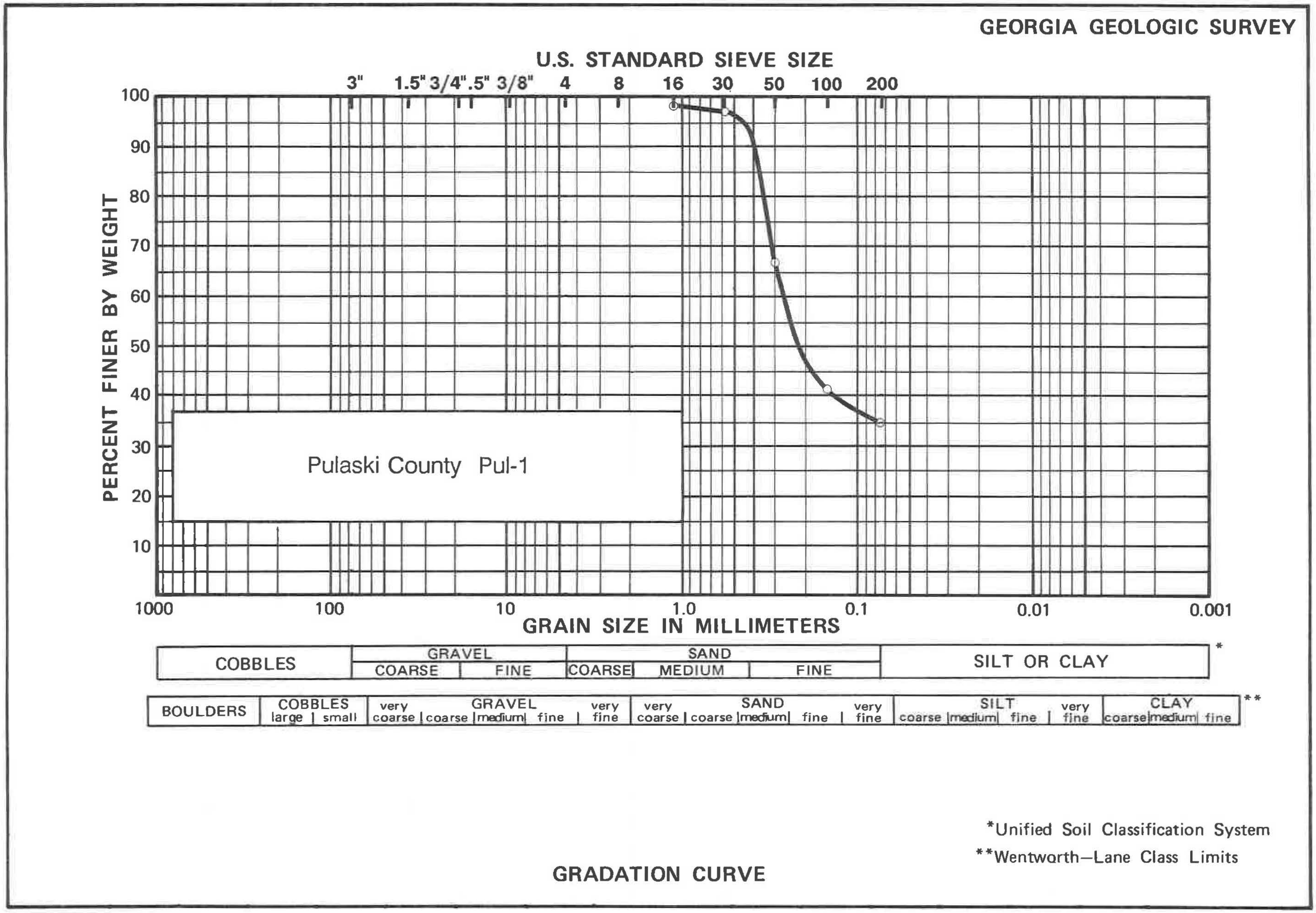


Figure 118. Size distribution curve of Sample Pul-1.

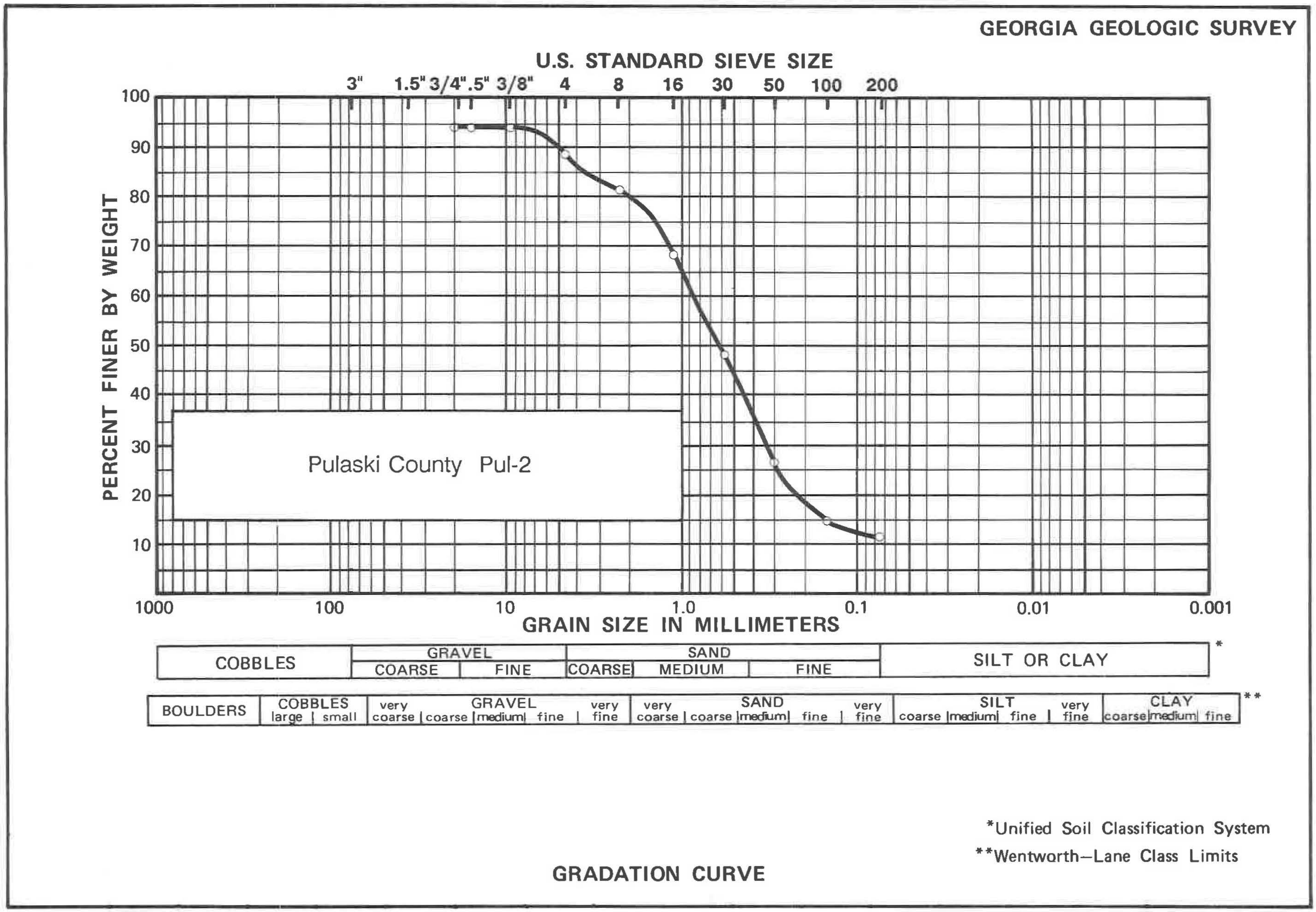


Figure 119. Size distribution curve of Sample Pul-2.

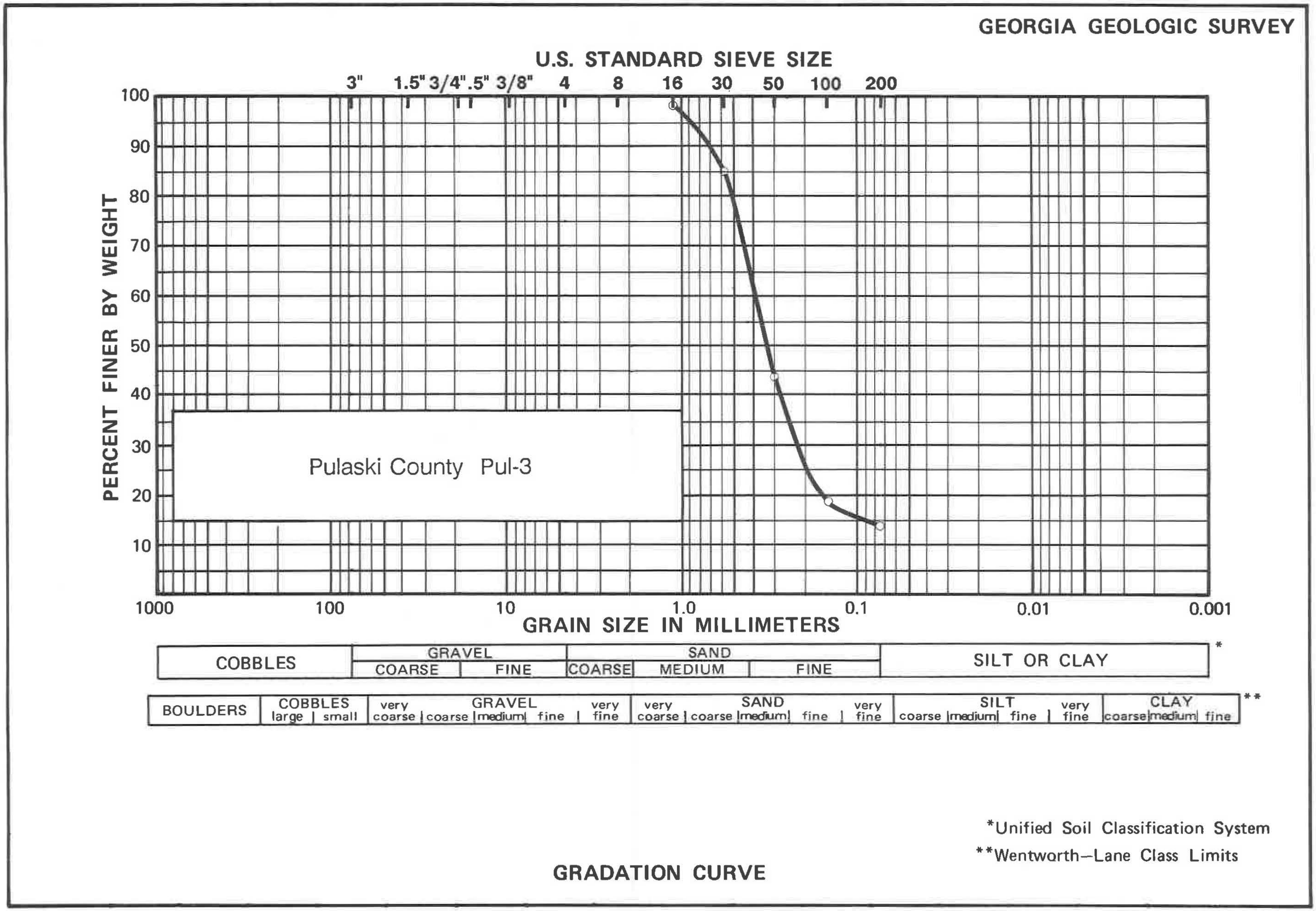


Figure 120. Size distribution curve of Sample Pul-3.

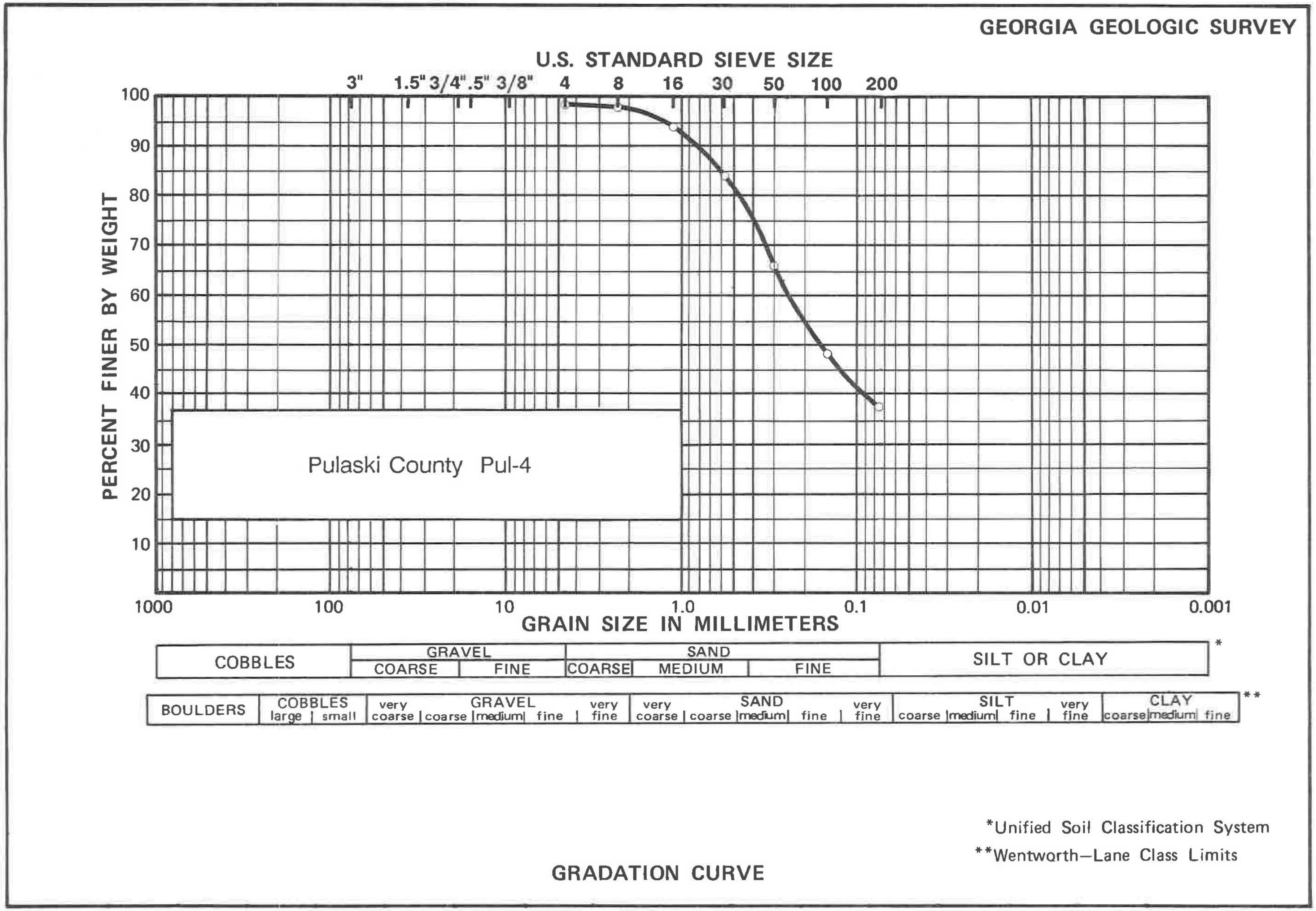


Figure 121. Size distribution curve of Sample Pul-4.

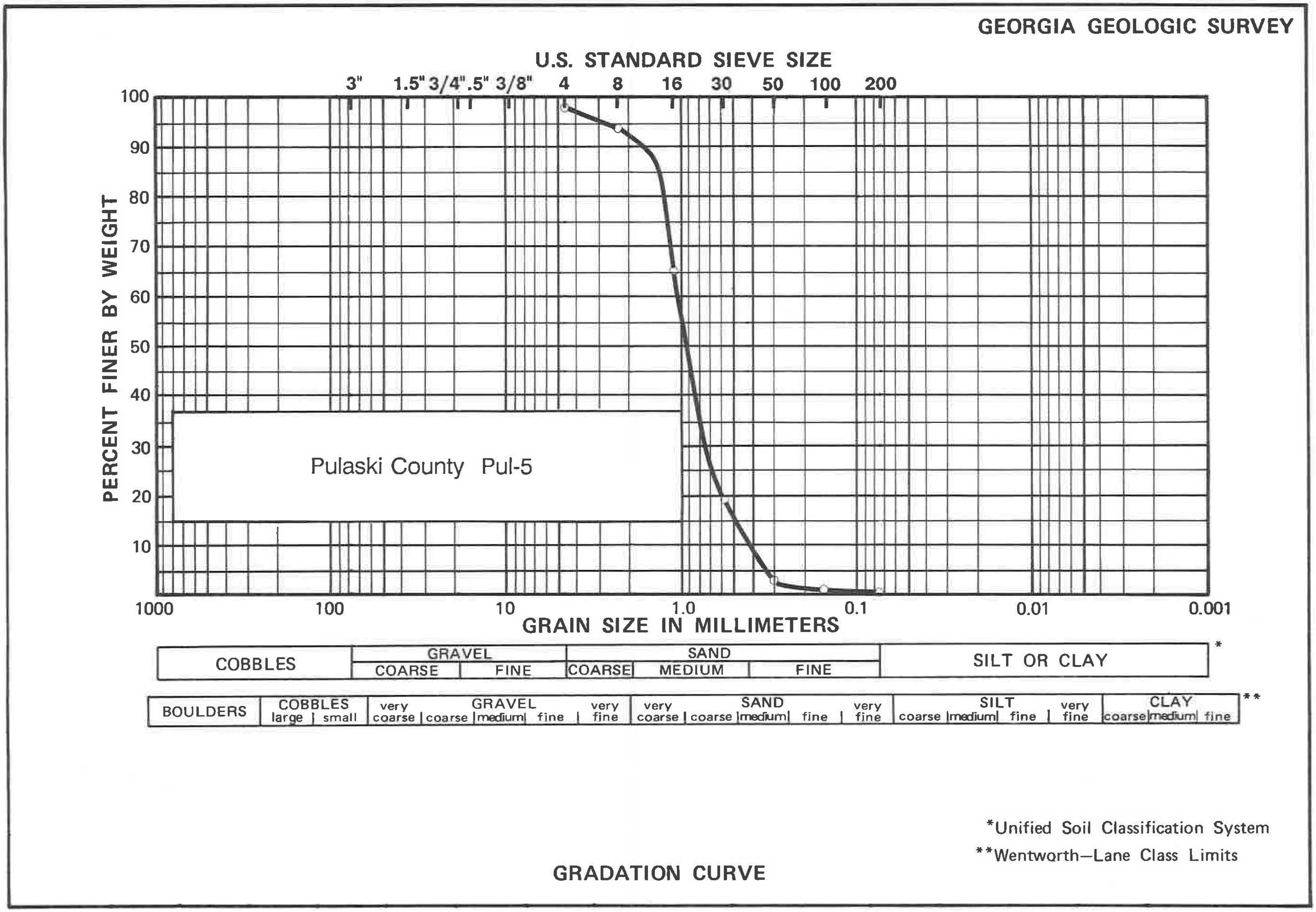


Figure 122. Size distribution curve of Sample Pul-5.

Evaluation

Samples Pul-1 and Pul-2 were taken from the preferred soil type where it corresponds to the terraces along the Ocmulgee River. Samples Pul-3 and Pul-4 were taken from the sand hills along the Ocmulgee River. Sample Pul-5 was taken from a sand bar on the Ocmulgee River. None of the material analyzed met ASTM Standard C-33. Samples Pul-1, Pul-2, and Pul-4 are too fine-grained, and samples Pul-3 and Pul-5 are too well-sorted for use as construction aggregate.

Mining Activity

There are no active or recently inactive aggregate operations in Pulaski County.

Summary Evaluation

Although the material in sample Pul-2 is too fine-grained, it could be upgraded. This site is a 50 acre tract. If mined to a depth of 15 feet, this site could produce reserves up to 545,000 tons, before upgrading. There are several sand bars along the Ocmulgee River that could also provide some construction aggregate. The sand bar sampled (Pul-5) extends for approximately 20 acres and to a depth of approximately 2 feet. The construction material potential for Pulaski County is moderate to high.

Telfair County

Geology and Physiography

The surficial sediments of Telfair County are derived from the Altamaha Formation and Quaternary alluvium. Telfair County lies within the Vidalia Upland District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 257) reported a small pit near Lumber City, (Fig.123, Ts-33) that produced good quality concrete sand. Teas (1921, p. 258) also mentioned a deposit of medium-grained sand at Sugar Creek (Fig.123, Ts-34) and again mentioned the presence of good quality sand in sand bars along the Ocmulgee River (1921, p. 258).

Present Study

The soil association #39 (see p. 7) was used in targeting sites for sampling in Telfair County and generally corresponds to the sand hills along the Ocmulgee River. The geomorphic features targeted are the sand hills and sand bars along the Ocmulgee River. Five samples representing four sites in Telfair County were analyzed for aggregate potential (Table 26).

Table 25. Pulaski County Sample Data

Sample designation	Depth[1]	Sample type	Minimum thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Pul-1	13.5'	auger	13.5'	2	no	0
Pul-2	15'	trench	15'	2	no	3
Pul-3	15'	auger	15'	2	no	2
Pul-4	2.5'	auger	2.5'	1	no	0
Pul-5	2'	auger[3]	2'	1	no	2

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]River sample, taken with a hand auger.

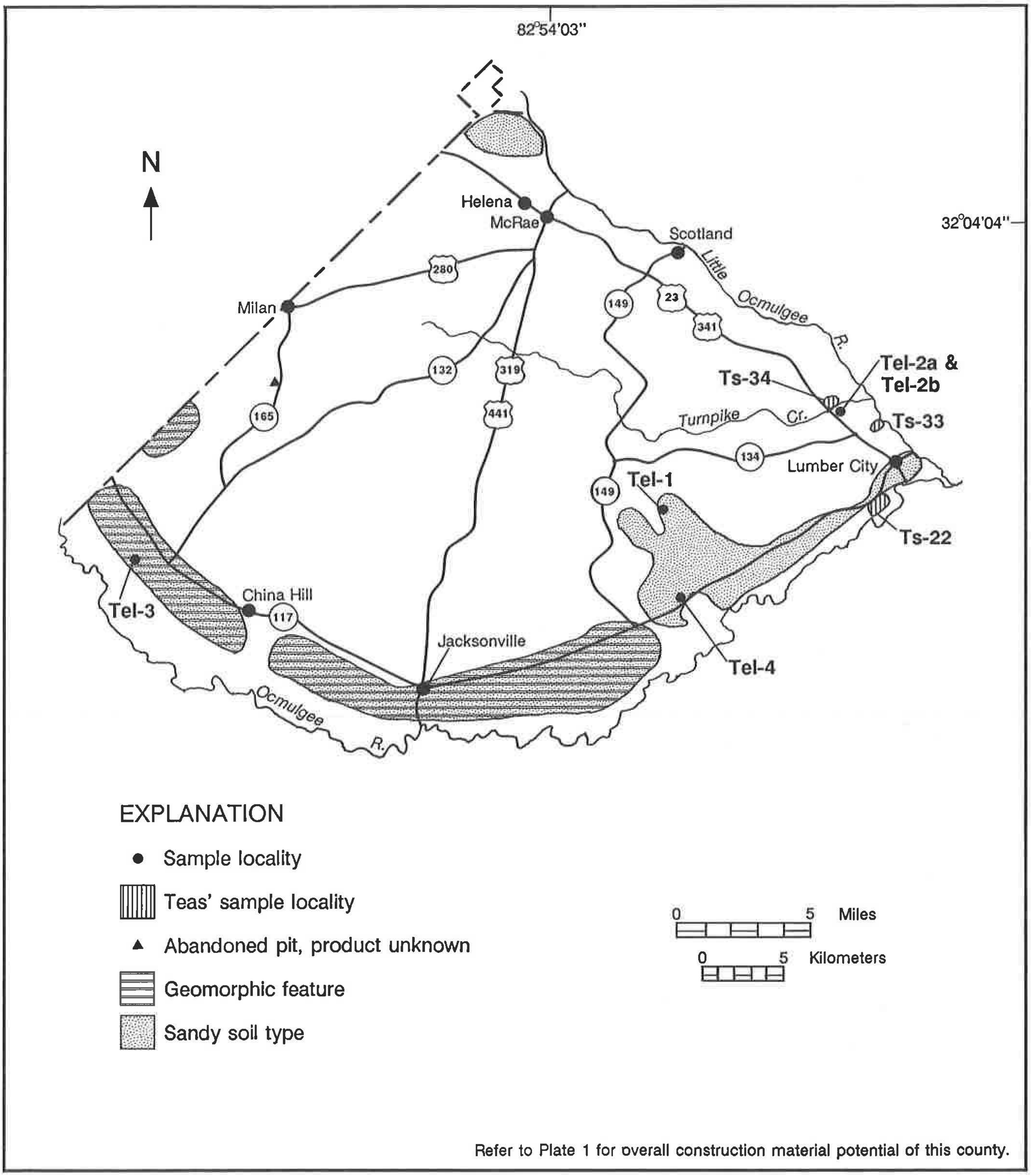


Figure 123. Telfair County map.

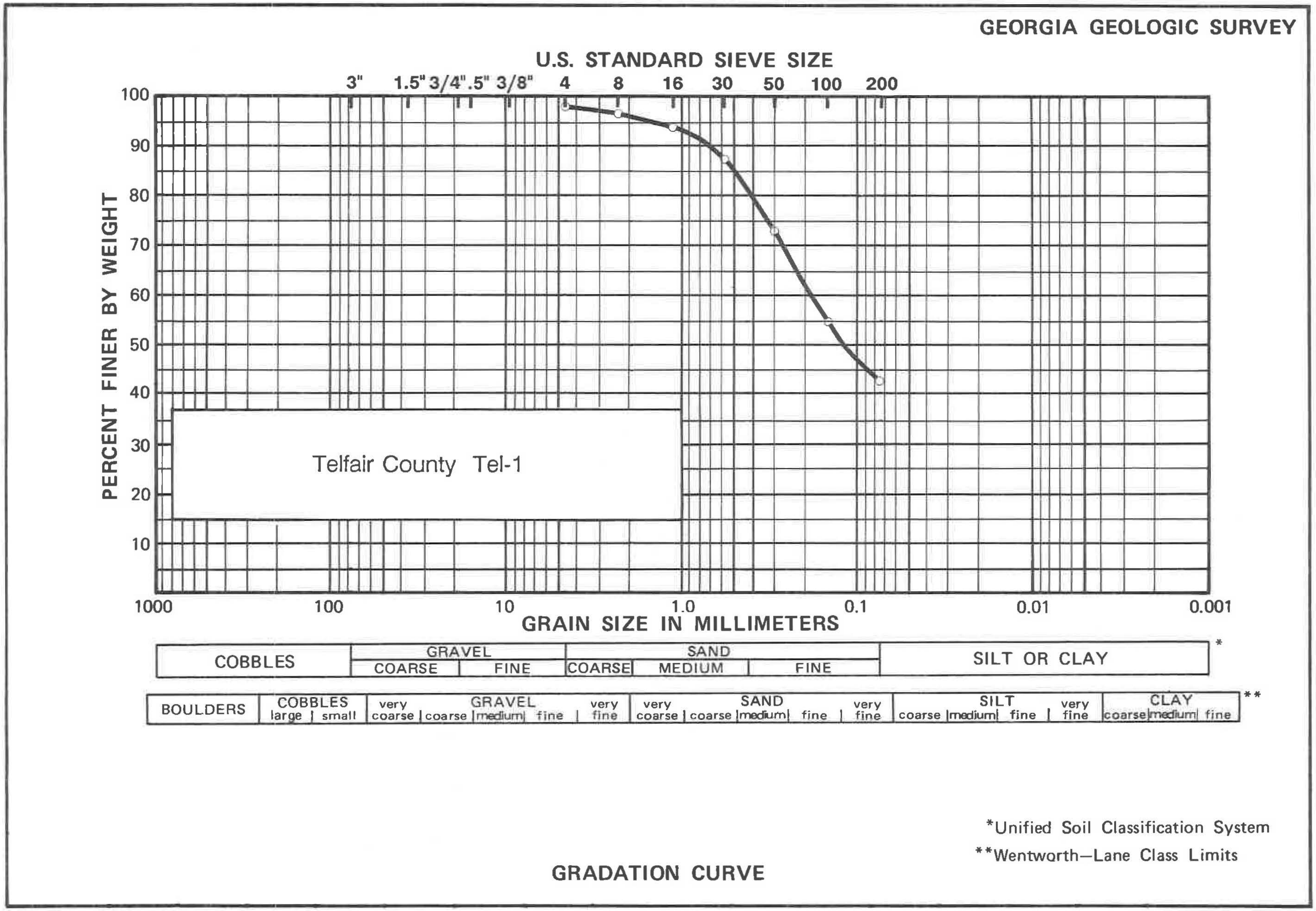


Figure 124. Size distribution curve of Sample Tel-1.

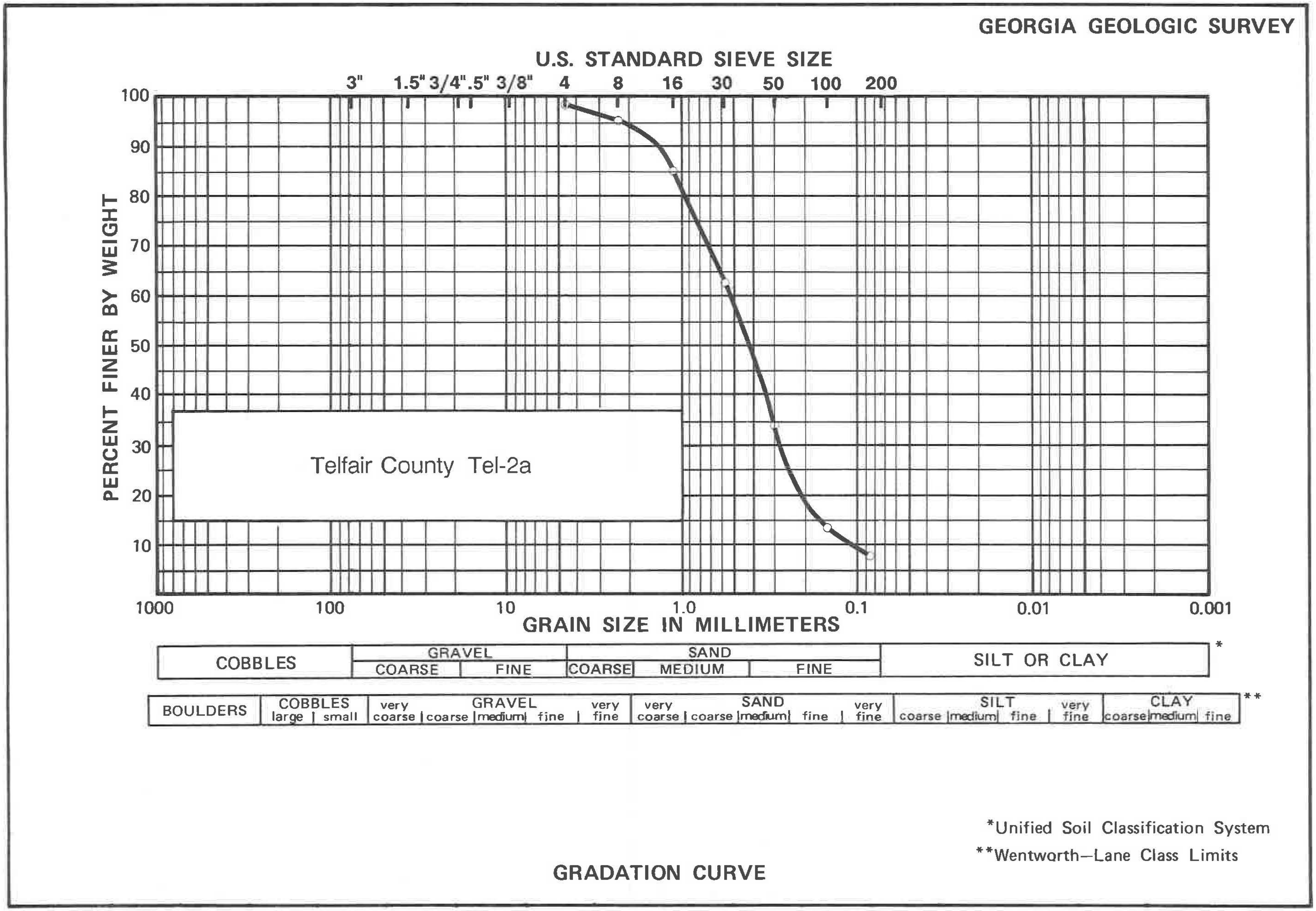


Figure 125. Size distribution curve of Sample Tel-2a.

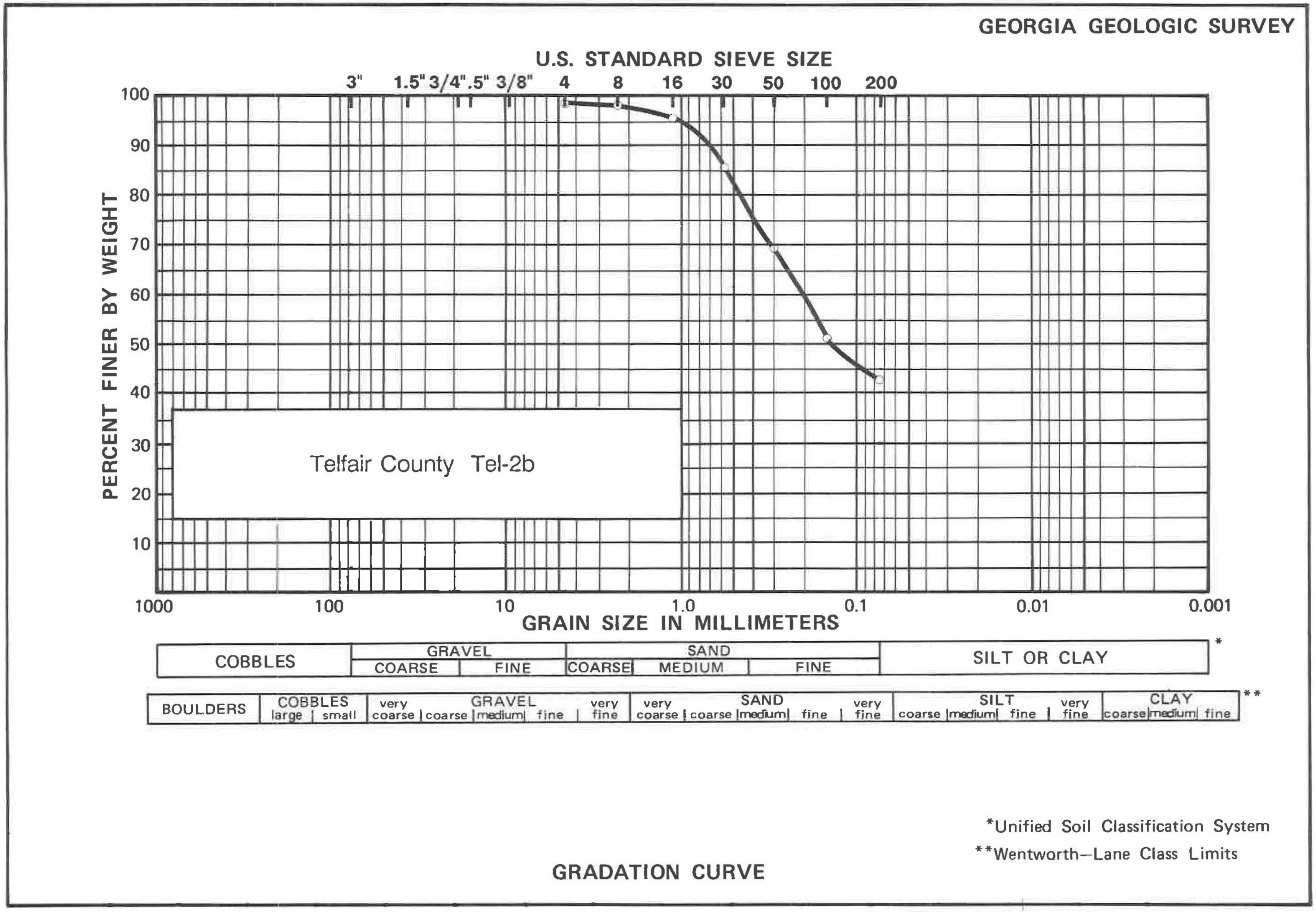


Figure 126. Size distribution curve of Sample Tel-2b.

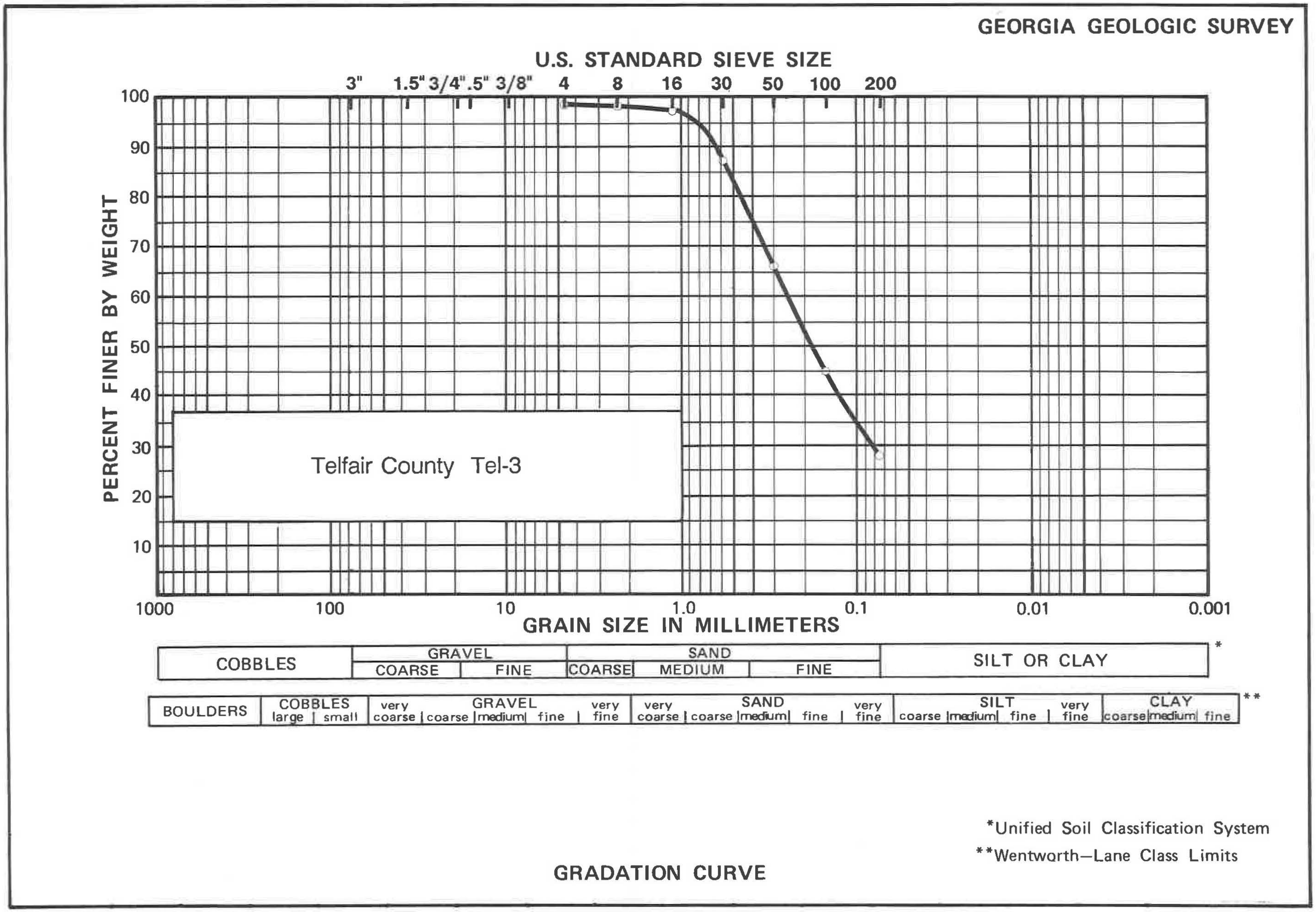


Figure 127. Size distribution curve of Sample Tel-3.

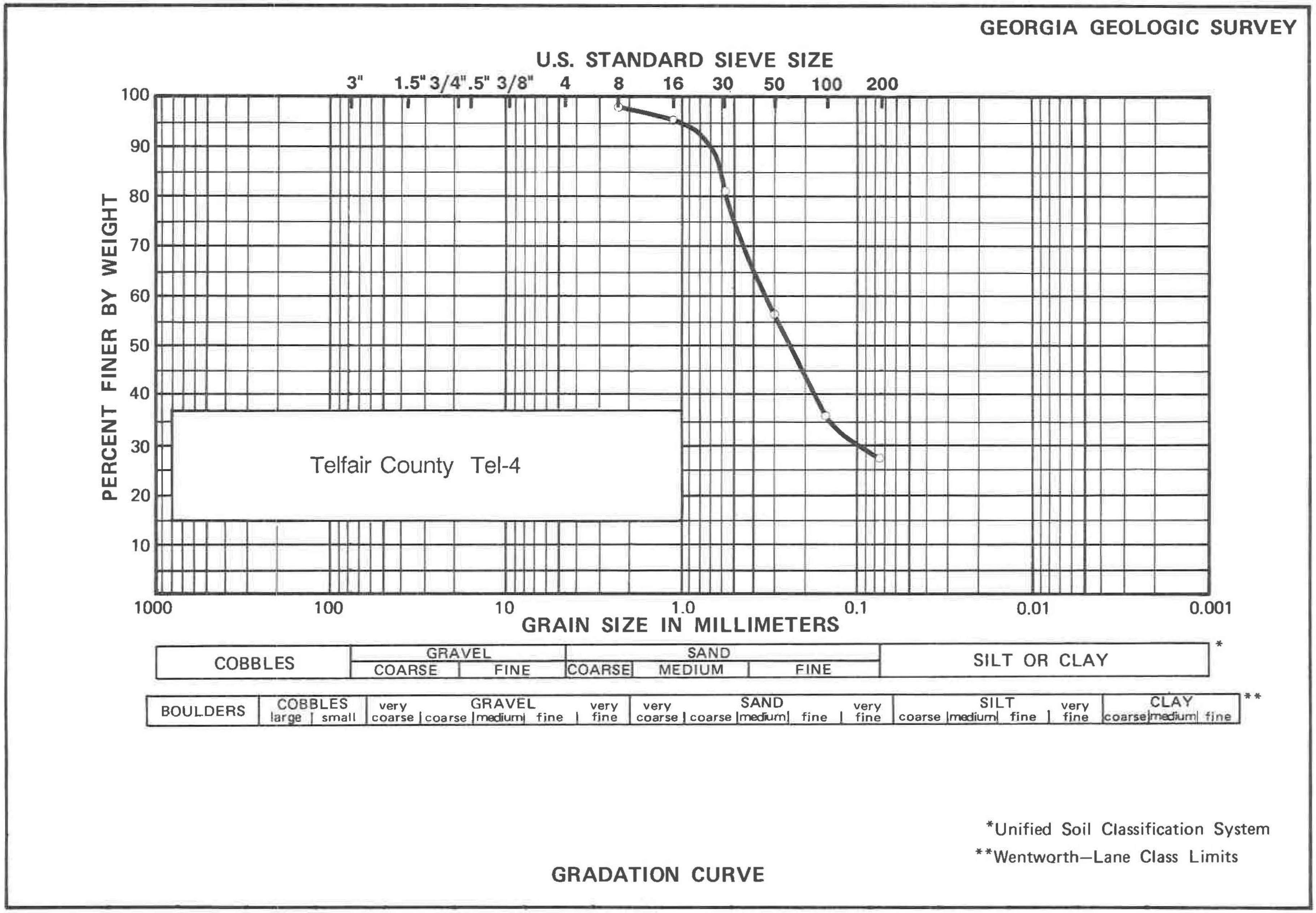


Figure 128. Size distribution curve of Sample Tel-4.

Evaluation

Sample Tel-1 was taken from the vicinity of an abandoned sand pit and a possible terrace deposit. Samples Tel-2a and Tel-2b were taken from the preferred soil type. Samples Tel-3 and Tel-4 were taken from the sand hills along the Ocmulgee River where they correspond to a preferred soil type. None of the samples met ASTM Standard C-33. Tel-1 and Tel-2b are too fine-grained; Tel-3 and Tel-4 are both too fine-grained as well as too well-sorted for use as construction aggregate. However, Tel-2a marginally failed, it could be upgraded.

Mining Activity

There are no active or recently inactive mining operations in Telfair County. Teas (1921, p.257) mentioned a small pit in the county, and there is another abandoned pit for which no information is available.

Summary Evaluation

Sample Tel-2a represents a 10-foot thick deposit of coarse-grained sand and gravels that extends for approximately 10 acres. This site is in the vicinity of an abandoned pit. Overall, the construction material potential for Telfair County is considered to be low.

Tift County

Note: A description of the aggregate potential for that part of Tift County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 230-238).

Geology and Physiography

The surficial sediments of Tift County are derived from the Altamaha Formation. Tift County lies within the Tifton Upland District of the Coastal Plain Province.

Previous Study

Teas made no mention of sand deposits in Tift County.

Present Study

The soil series used in targeting sites for sampling in Tift County were Lakeland and Mascotte. There were no apparent geomorphic features indicative of sand or gravel deposits present in Tift County. Three samples representing two sites were analyzed from Tift County for construction aggregate potential (Fig.129, Table 27).

Evaluation

Samples Tif-1, Tif-2a and Tif-2b were taken from areas of preferred soil types. None of the samples met ASTM Standard C-33. All are too well-sorted for use as construction aggregate.

Table 26. Telfair County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Tel-1	8'	auger	8'	1	no	0
Tel-2a	10'	auger	10'	2	no[3]	2
Tel-2b	2'	auger	0	2	no	0
Tel-3	8'	auger	8'	2	no	0
Tel-4	12'	auger	12'	2	no	1

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

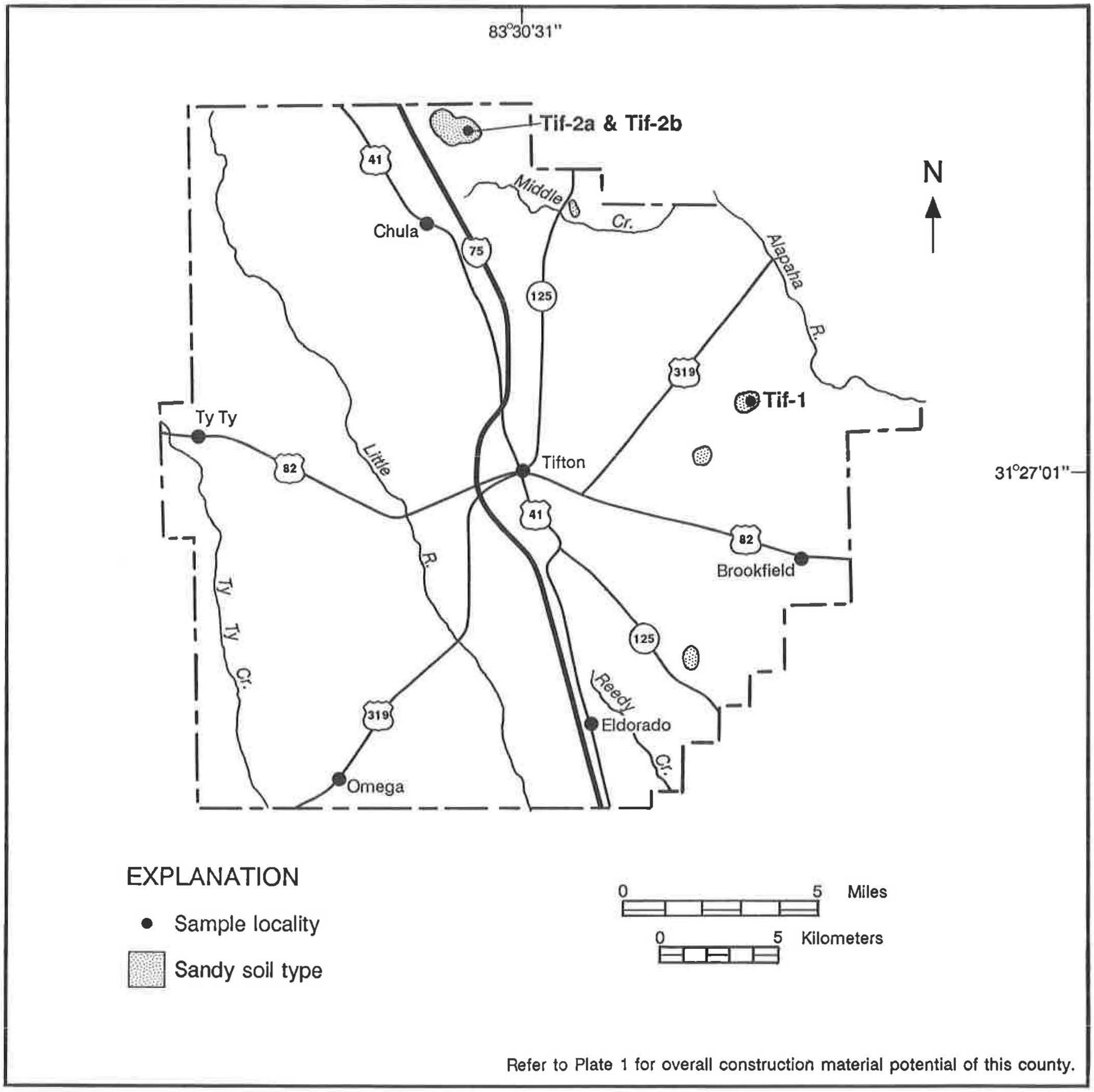


Figure 129. Tift County map.

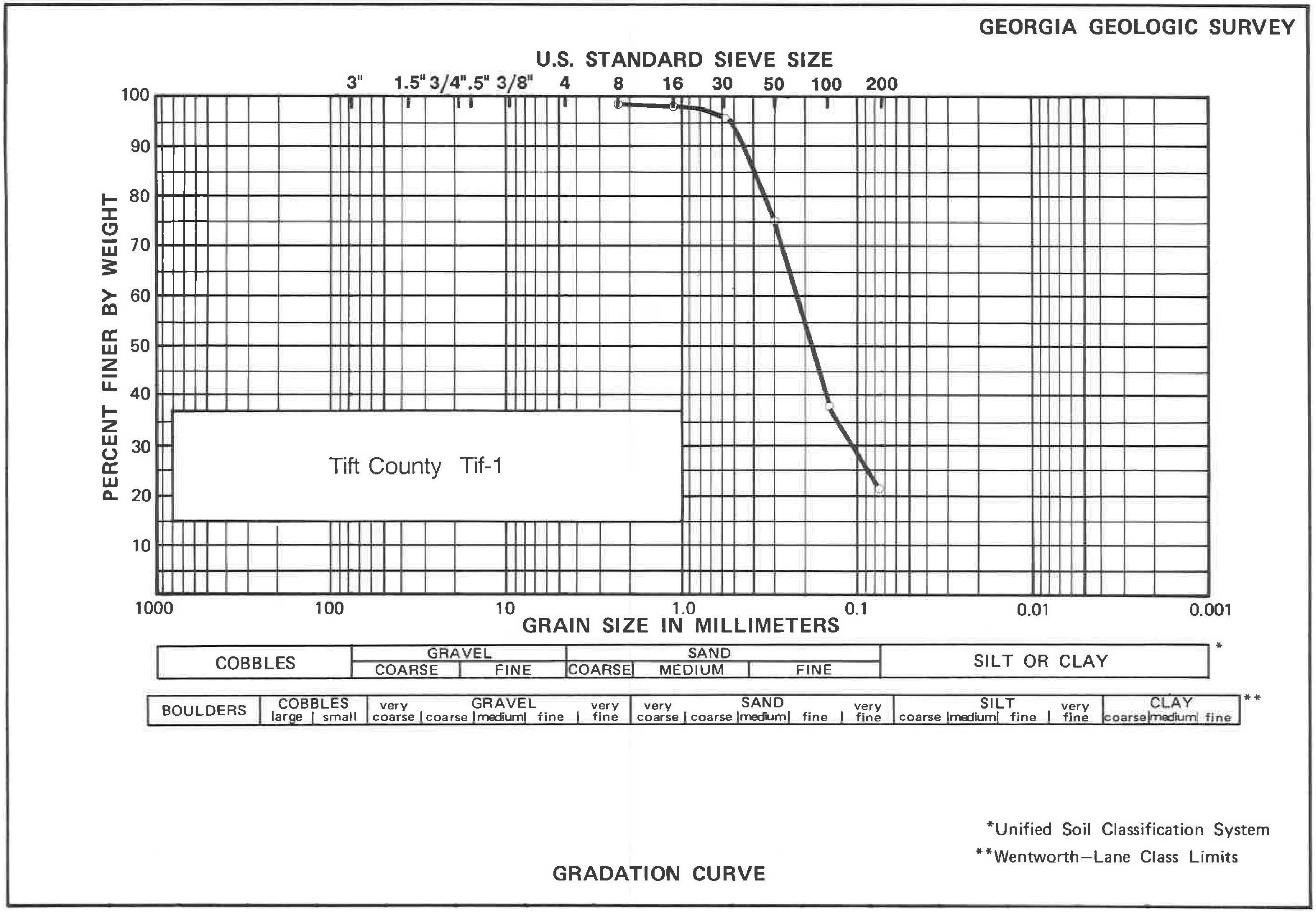


Figure 130. Size distribution curve of Sample Tif-1.

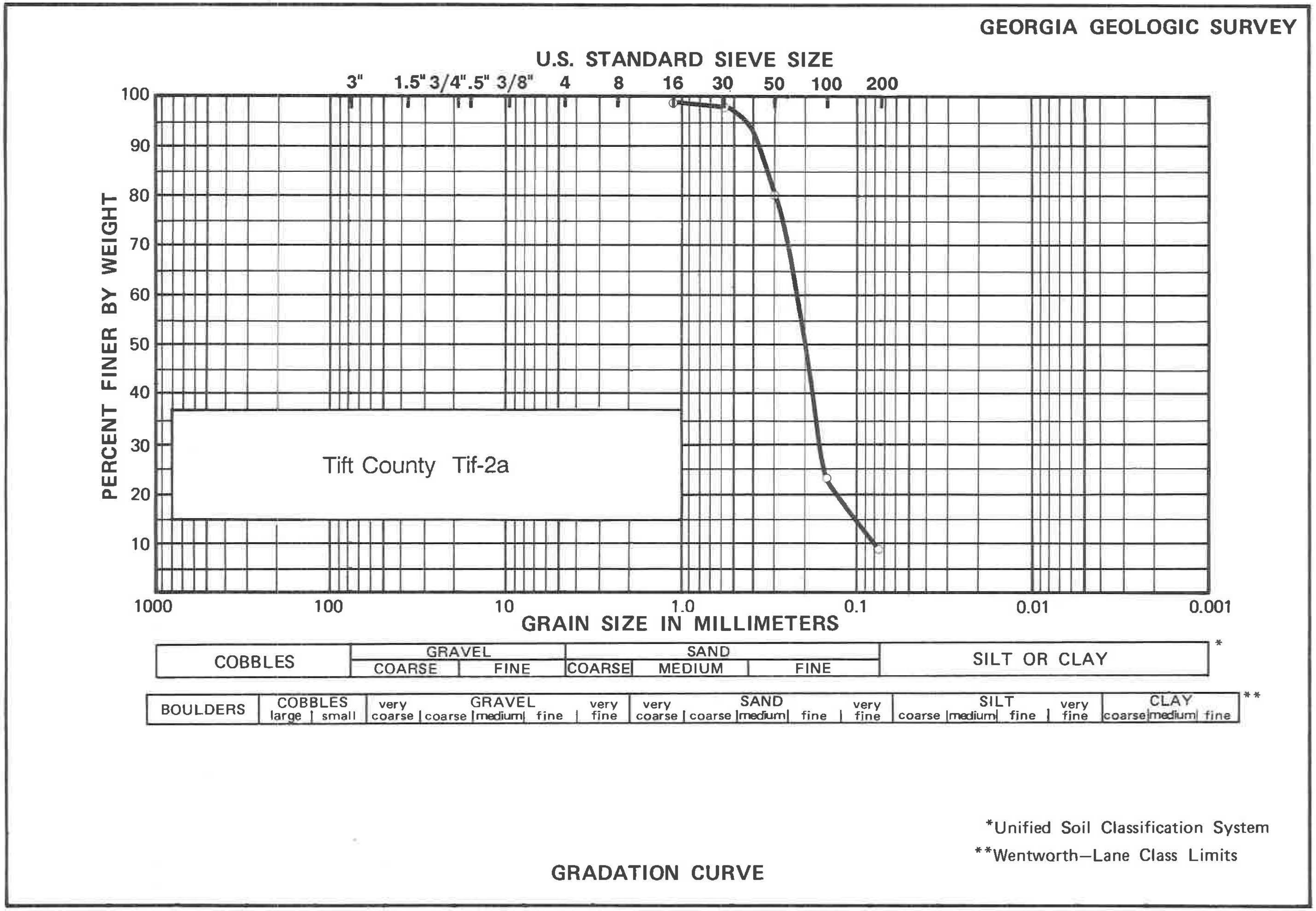


Figure 131. Size distribution curve of Sample Tif-2a.

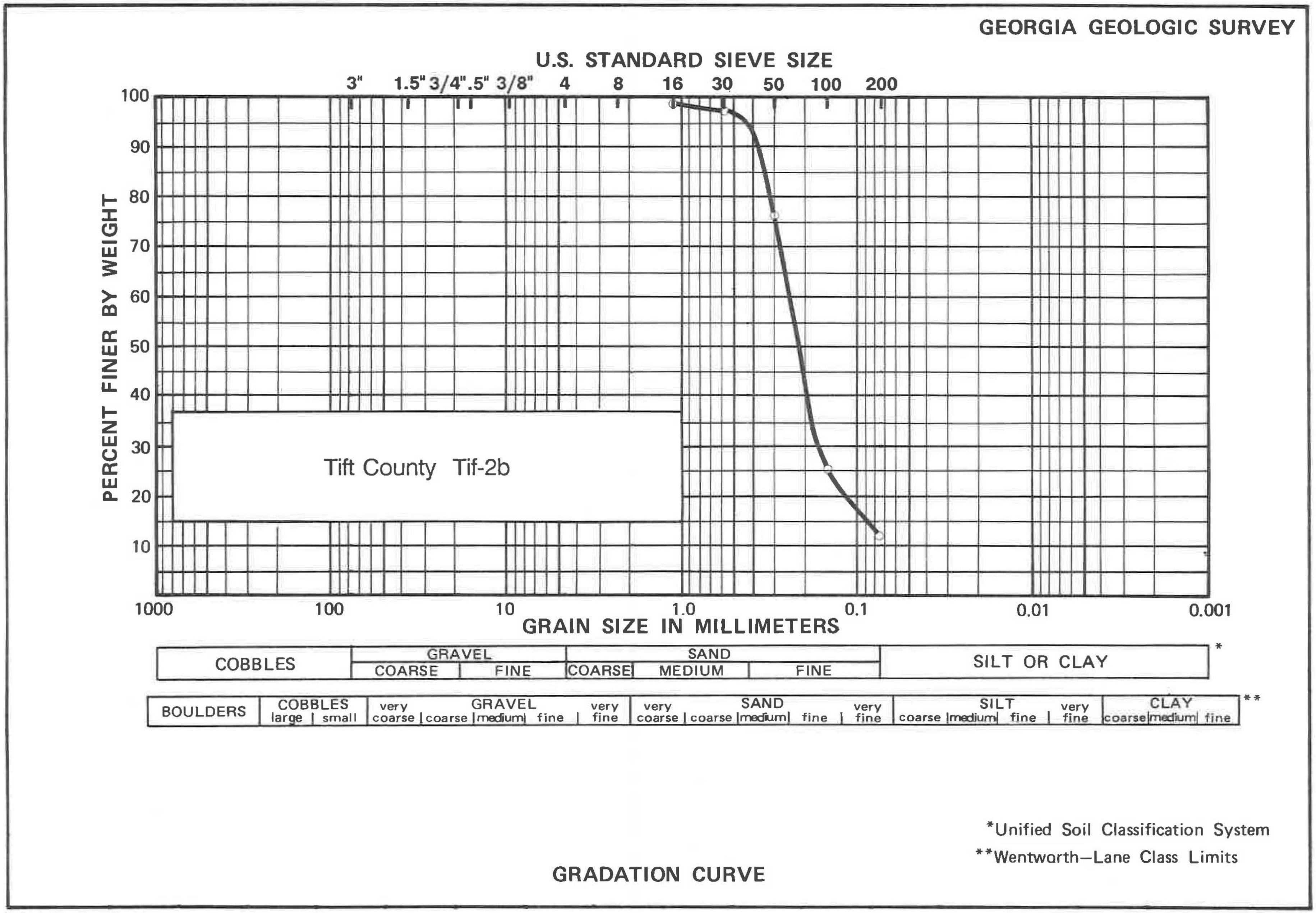


Figure 132. Size distribution curve of Sample Tif-2b.

Mining Activity

There are no active or recently inactive mining operations in Tift County.

Summary Evaluation

None of the areas targeted in Tift County are potential sites for aggregate production. The materials present are too well-sorted. The construction material potential for this part of Tift County is considered to be low.

Treutlen County

Geology and Physiography

The surficial sediments of Treutlen County are derived from the Altamaha Formation and Quaternary alluvium. Treutlen County lies within the Vidalia Upland District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 264) mentioned several small sand deposits in Treutlen County. A small pit north of Soperton (Fig. 133, Ts-35) provided sand for local use. Near Red Bluff Creek (Fig. 133, Ts-36) there is an occurrence of fine-grained sand. Medium- to coarse-grained sand is present in the Oconee River bed.

Present Study

The soil series used in targeting sites for sampling in Treutlen County was Lakeland and is found at various places along Pendleton Creek and the Oconee River. The geomorphic features noted were the sand hills at Pendleton Creek, and near the Oconee River. Seven samples representing six sites were analyzed for aggregate potential from Treutlen County (Table 28).

Evaluation

Samples Tre-1a, Tre-1b and Tre-2 were taken from areas of the preferred soil type that correspond to targeted geomorphic features. Samples Tre-3 and Tre-4 were taken from sand bars along the Oconee River. Samples Tre-5 and Tre-6 were taken from areas noted by Teas (1921, p.264).

None of the samples analyzed met ASTM Standard C-33. Samples Tre-1a, Tre-3, and Tre-4 were too well-sorted. Samples Tre-1b, Tre-2, Tre-5, and Tre-6 were too fine-grained for use as construction aggregate.

Mining Activity

Other than the small pits mentioned by Teas (1921, p. 264), there are no known active or inactive mining operations in Treutlen County.

Table 27. Tift County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Tif-1	8'	auger	8'	1	no	0
Tif-2a	4'	trench	16'	1	no	1
Tif-2b	12'	trench	16'	1	no	1

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

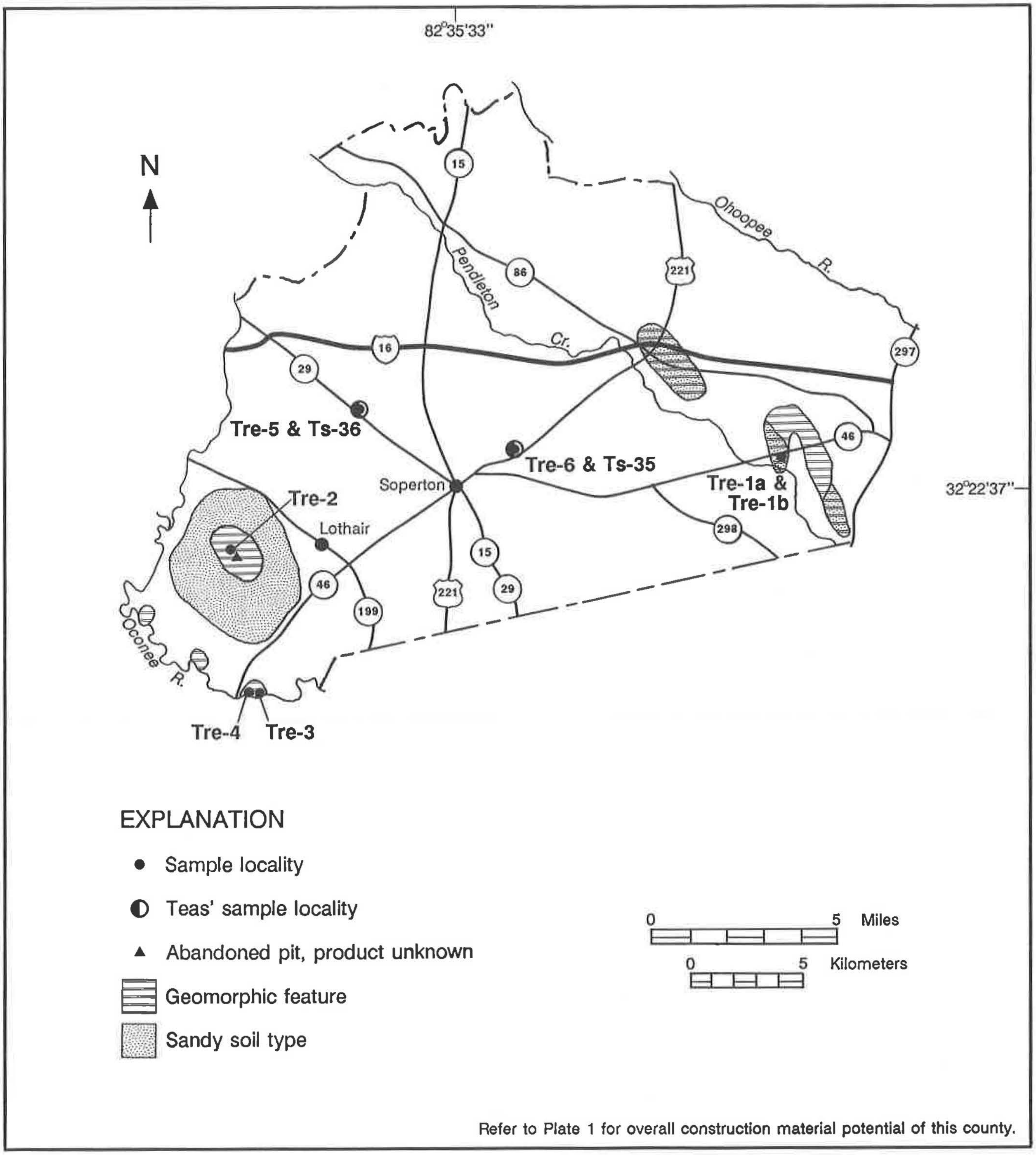


Figure 133. Treutlen County map.

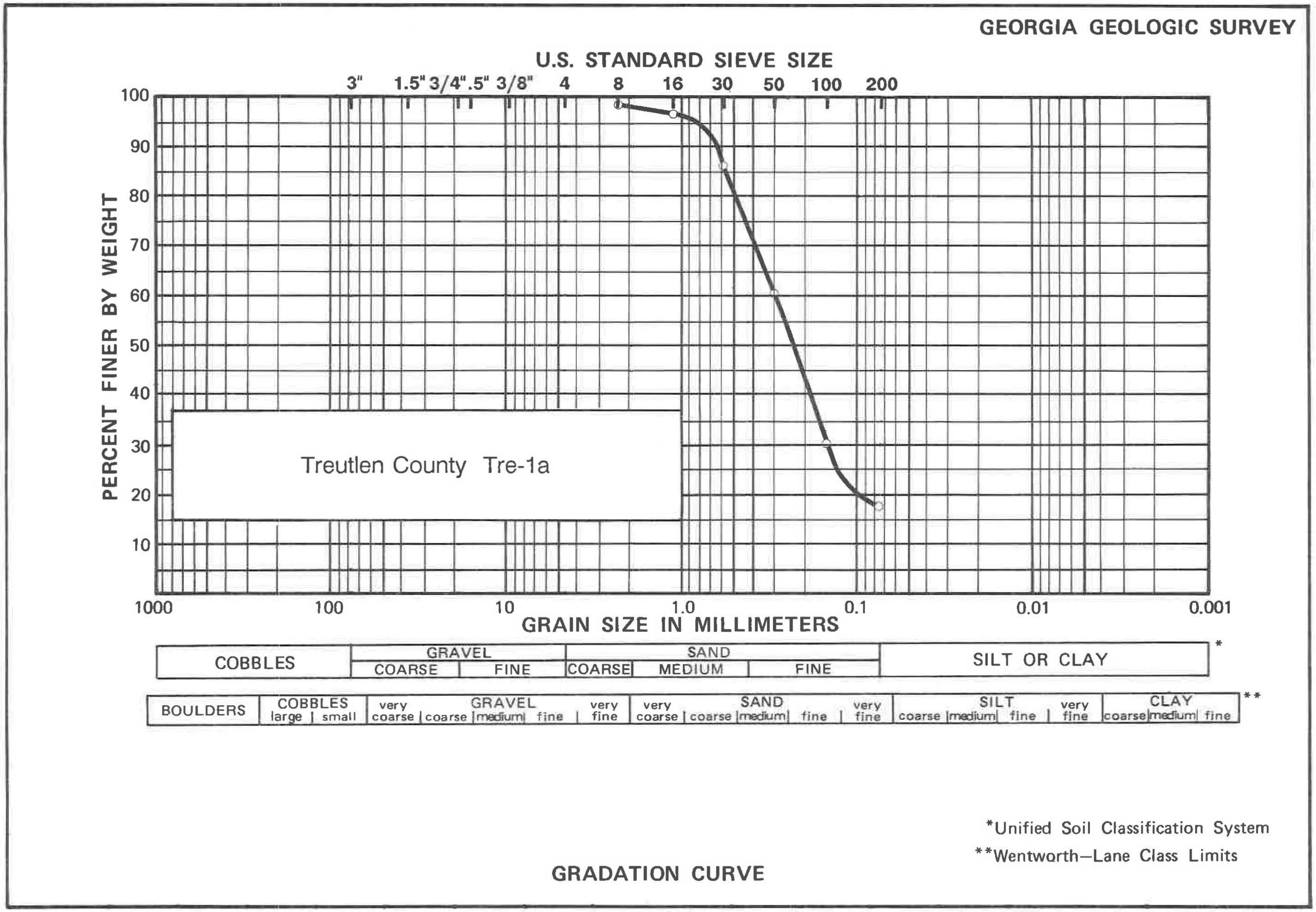


Figure 134. Size distribution curve of Sample Tre-1a.

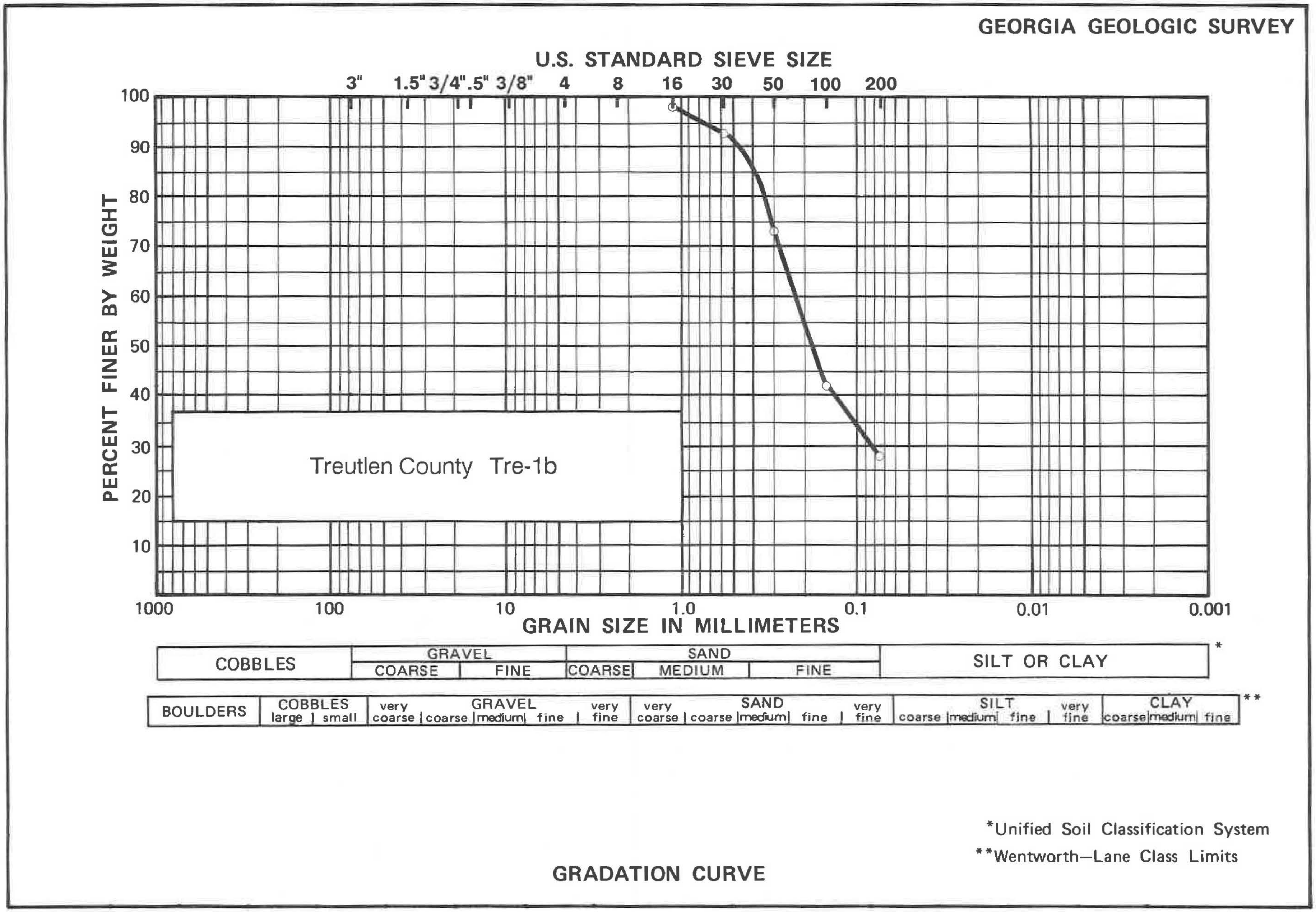


Figure 135. Size distributution curve of Sample Tre-1b.

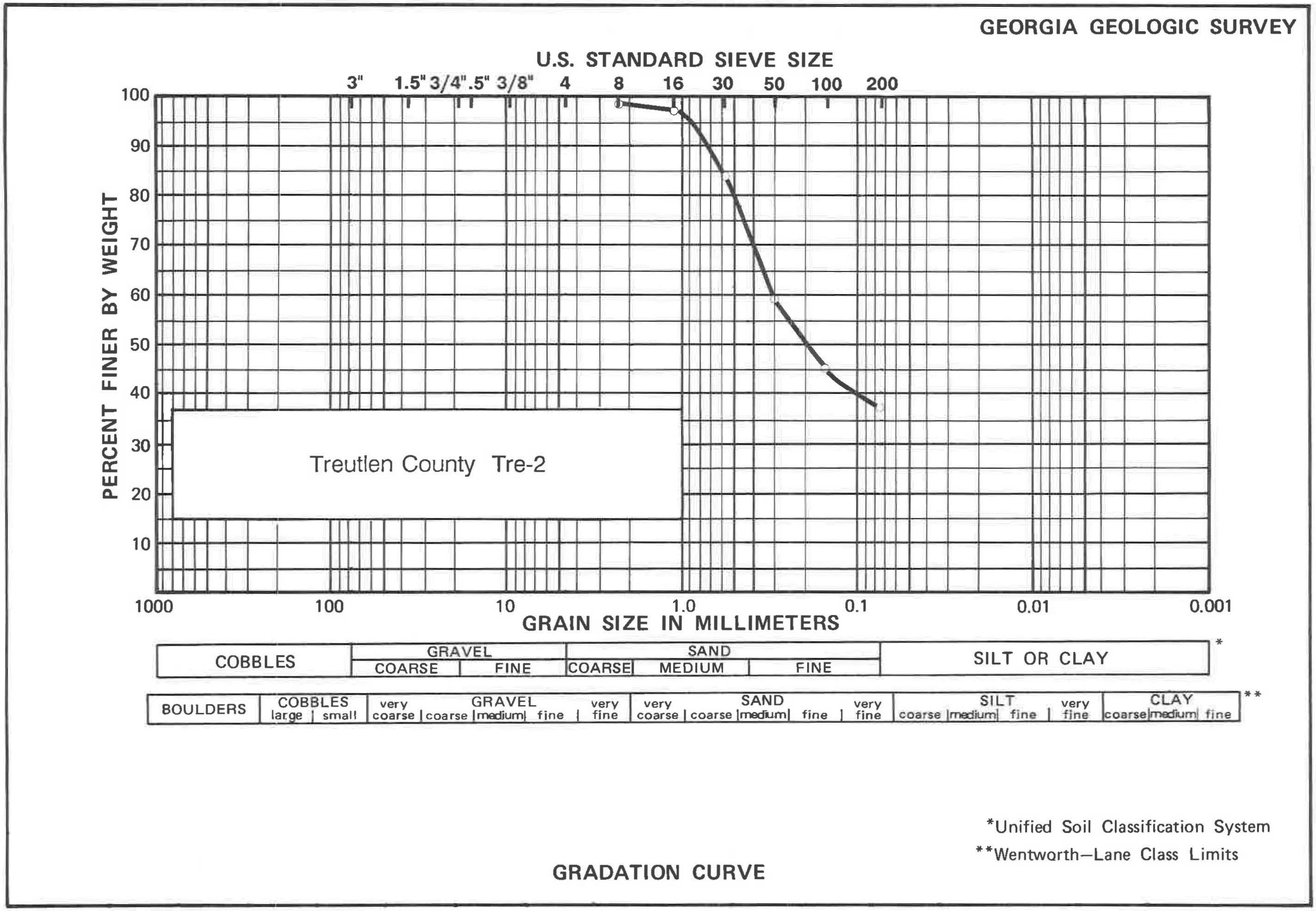


Figure 136. Size distribution curve of Sample Tre-2.

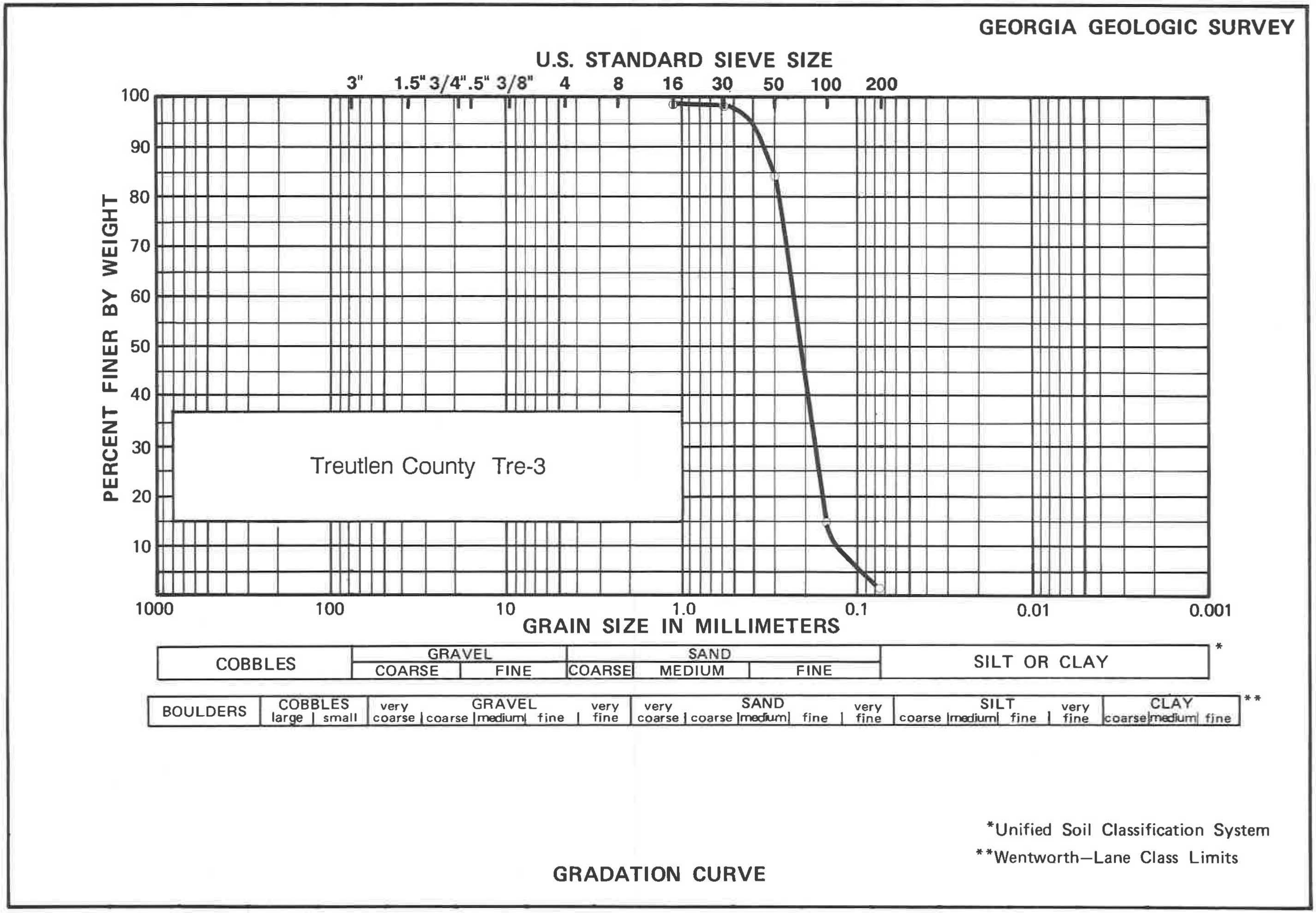


Figure 137. Size distribution curve of Sample Tre-3.

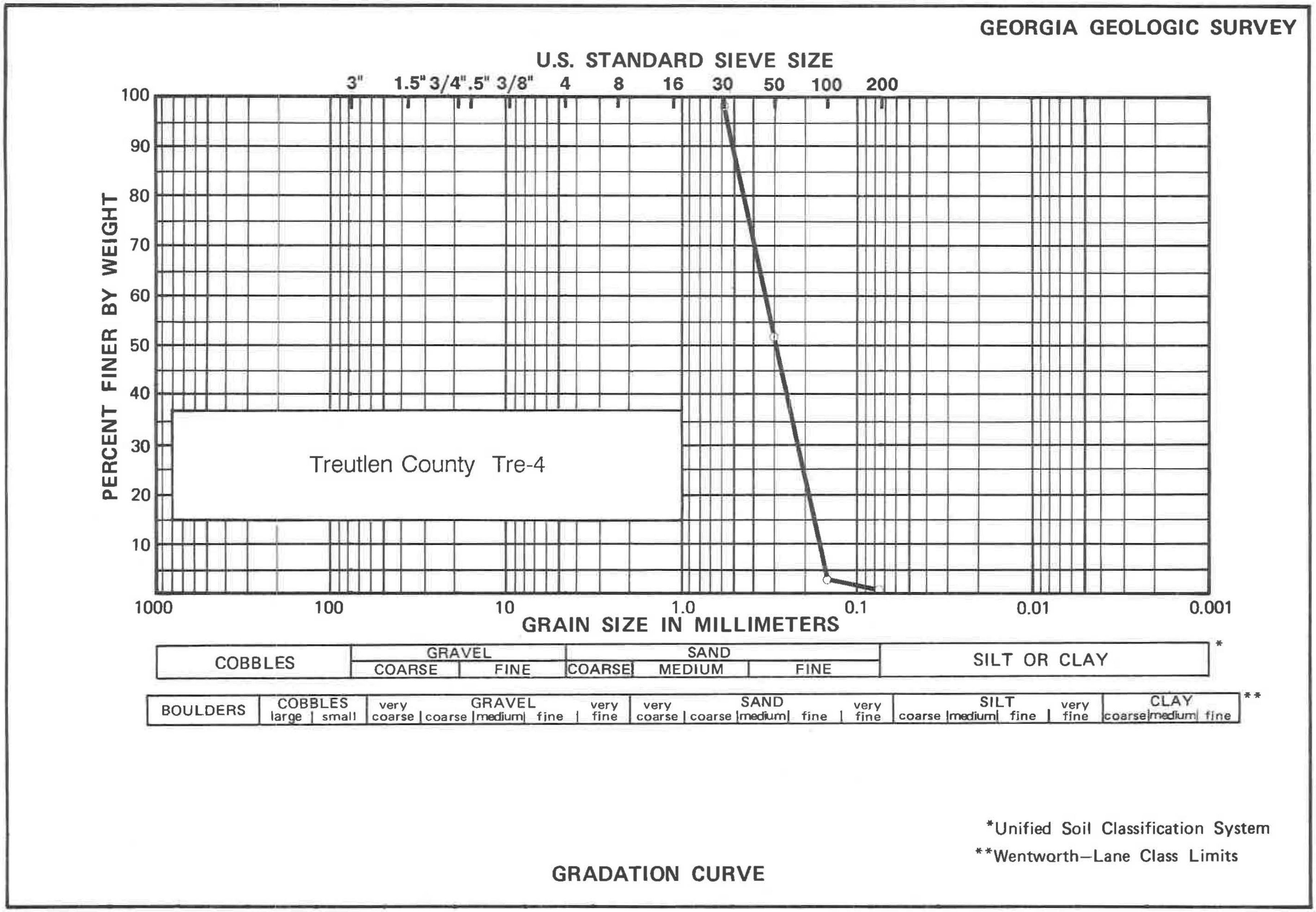


Figure 138. Size distribution curve of Sample Tre-4.

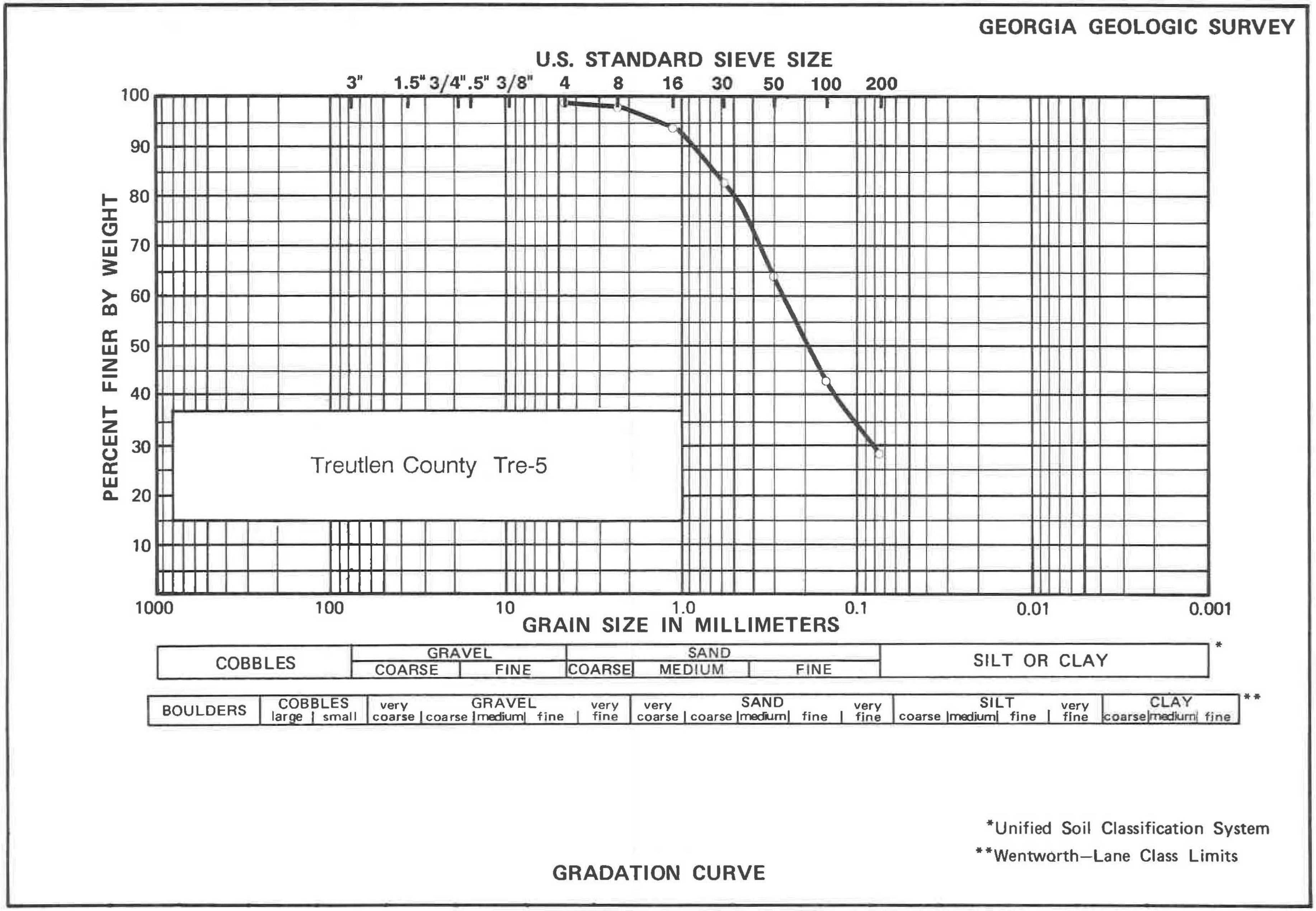


Figure 139. Size distribution curve of Sample Tre-5.

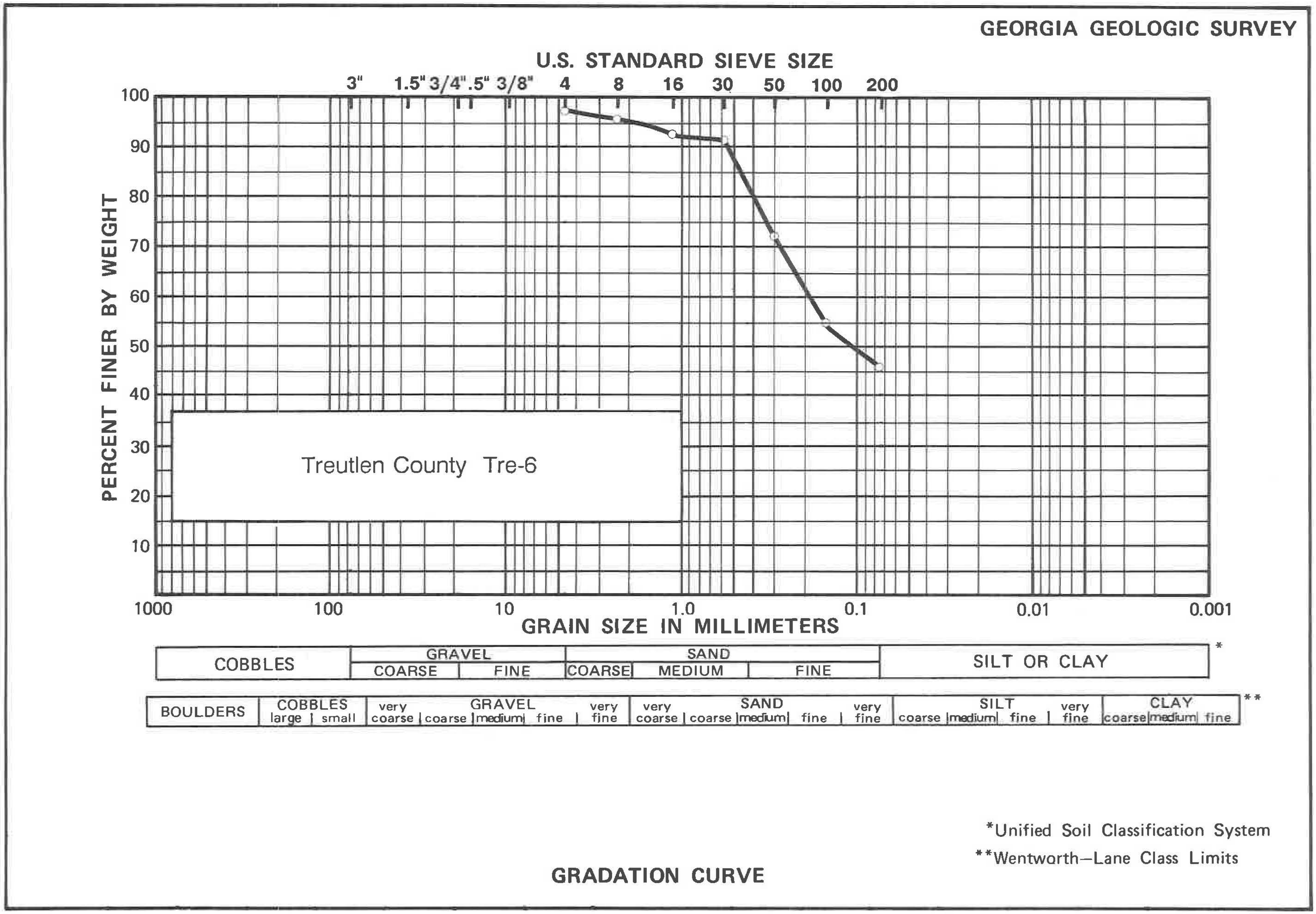


Figure 140. Size distribution curve of Sample Tre-6.

Table 28. Treutlen County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Tre-1a	8'	auger	9.5'	2	no	0
Tre-1b	1.5'	auger	9.5'	2	no	0
Tre-2	12'	auger	12'	2	no	1
Tre-3	1'	auger[3]	1'	1	no	1
Tre-4	2'	auger[3]	2'	1	no	2
Tre-5	9.5'	auger	9.5'	1	no	0
Tre-6	3'	auger	3'	1	no	0

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]River sample, taken with a hand auger.

Summary Evaluation

None of the samples analyzed for aggregate potential met ASTM Standard C-33, and there is no evidence to support the potential for aggregate production in this county. The construction material potential for Treutlen County is considered to be low.

Turner County

Note: A description of the aggregate potential for that part of Turner County which lies west of I-75 may be found in Construction Material Potential of the Coastal Plain of Southwestern Georgia: An Evaluation, Georgia Geologic Survey Bulletin 106; (Friddell, 1987, p. 239-242).

Geology and Physiography

The surficial sediments of Turner County are derived from the Altamaha Formation. Turner County lies within the Tifton Upland District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 265) reported one small deposit of medium-grained sand at Deep Creek in Turner County (Fig.141, Ts-37).

Present Study

The soil series used in targeting sites for sampling in Turner County were Kershaw and Lakeland, which are present as isolated bodies near Wolf, Deep and Lake Creeks. There were no apparent geomorphic features indicative of sand or gravel deposits. Four sites were sampled, and the material analyzed for aggregate potential (Table 29).

Evaluation

Samples Trn-1, Trn-3 and Trn-4 were taken from areas of preferred soil types; sample Trn-2 was taken from a preferred soil type that corresponds to a locality mentioned by Teas (1921, p.265). None of the samples met ASTM Standard C-33. Trn-3 is too fine-grained for use as construction aggregate. Samples Trn-1, Trn-2, and Trn-4 are too well-sorted, but contain very little fine-grained material. These three samples could be upgraded to meet ASTM Standard C-33.

Mining Activity

Prior to 1985, Reeves Construction Company was mining a 20-acre pit for fill material in Turner County (Fig.141, I-691). This pit is no longer active.

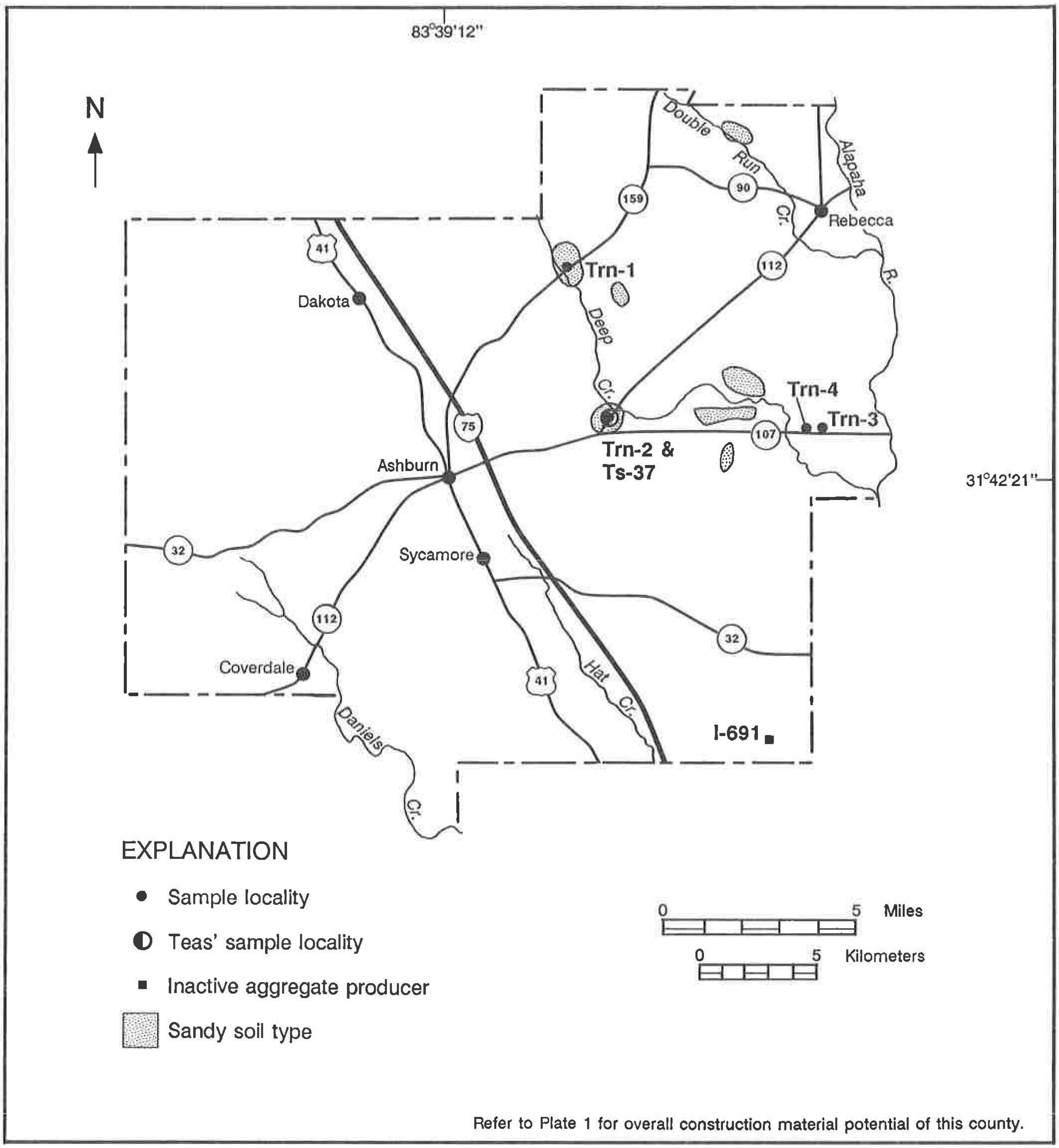


Figure 141. Turner County map.

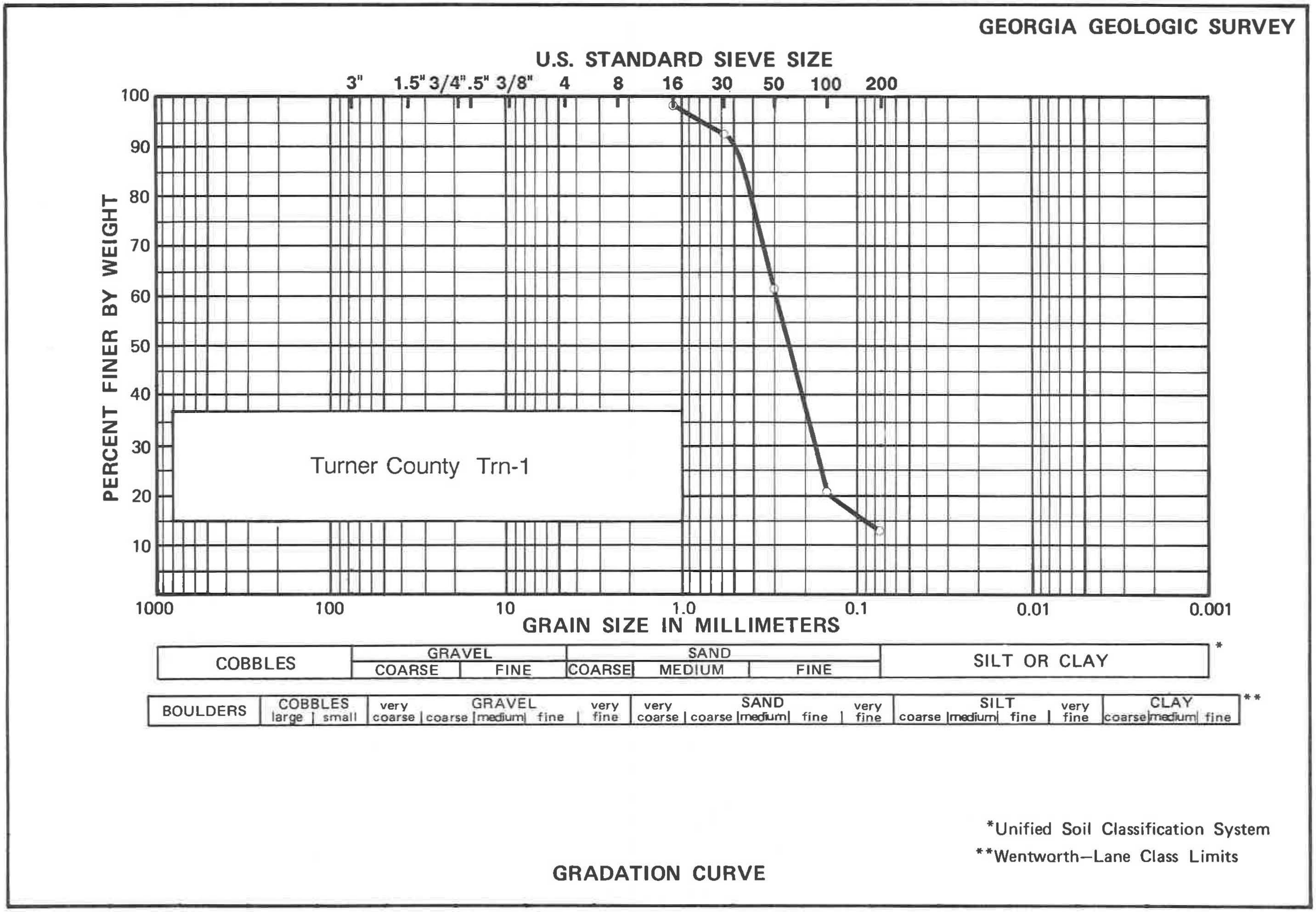


Figure 142. Size distribution curve of Sample Trn-1.

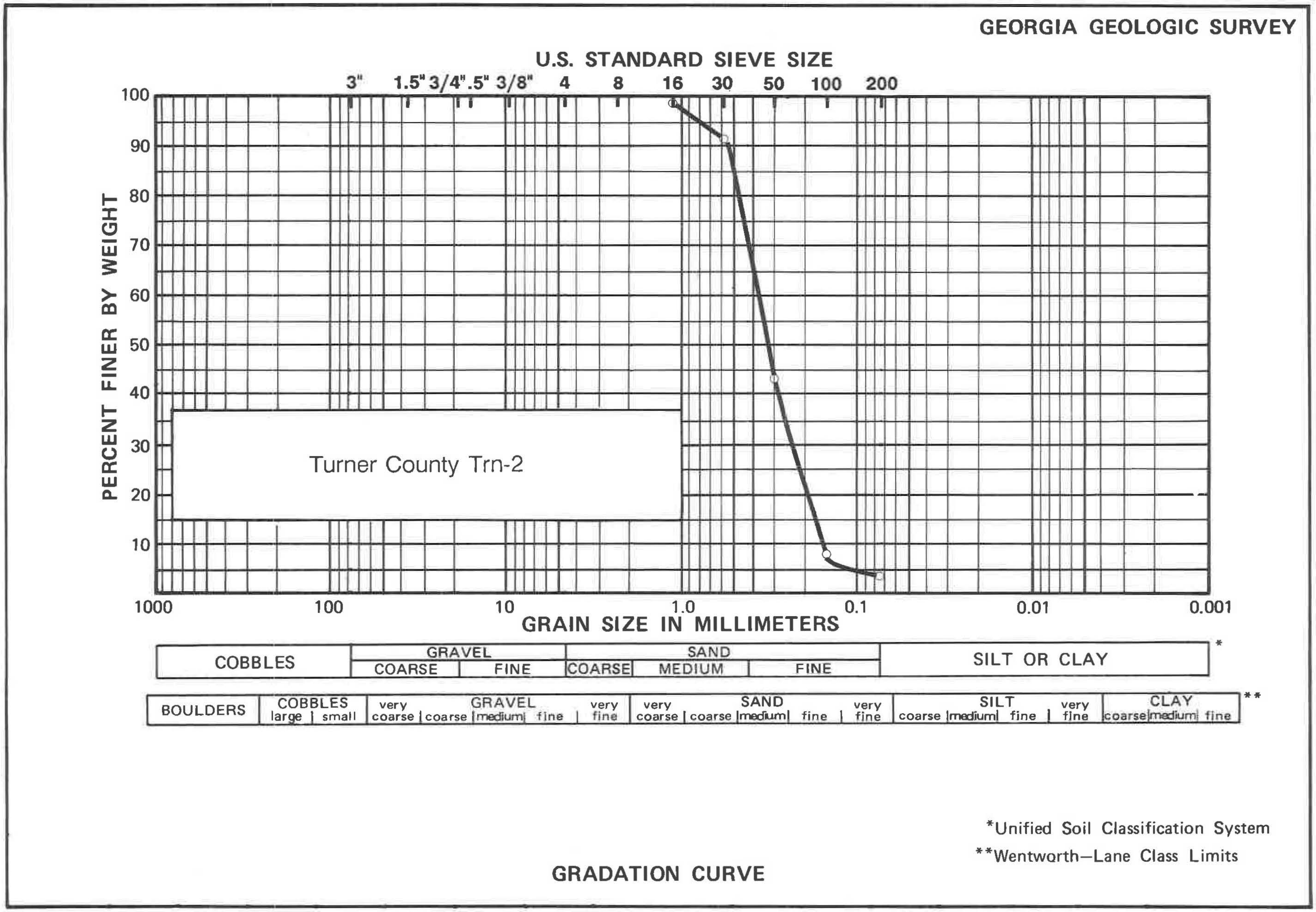


Figure 143. Size distribution curve of Sample Trn-2.

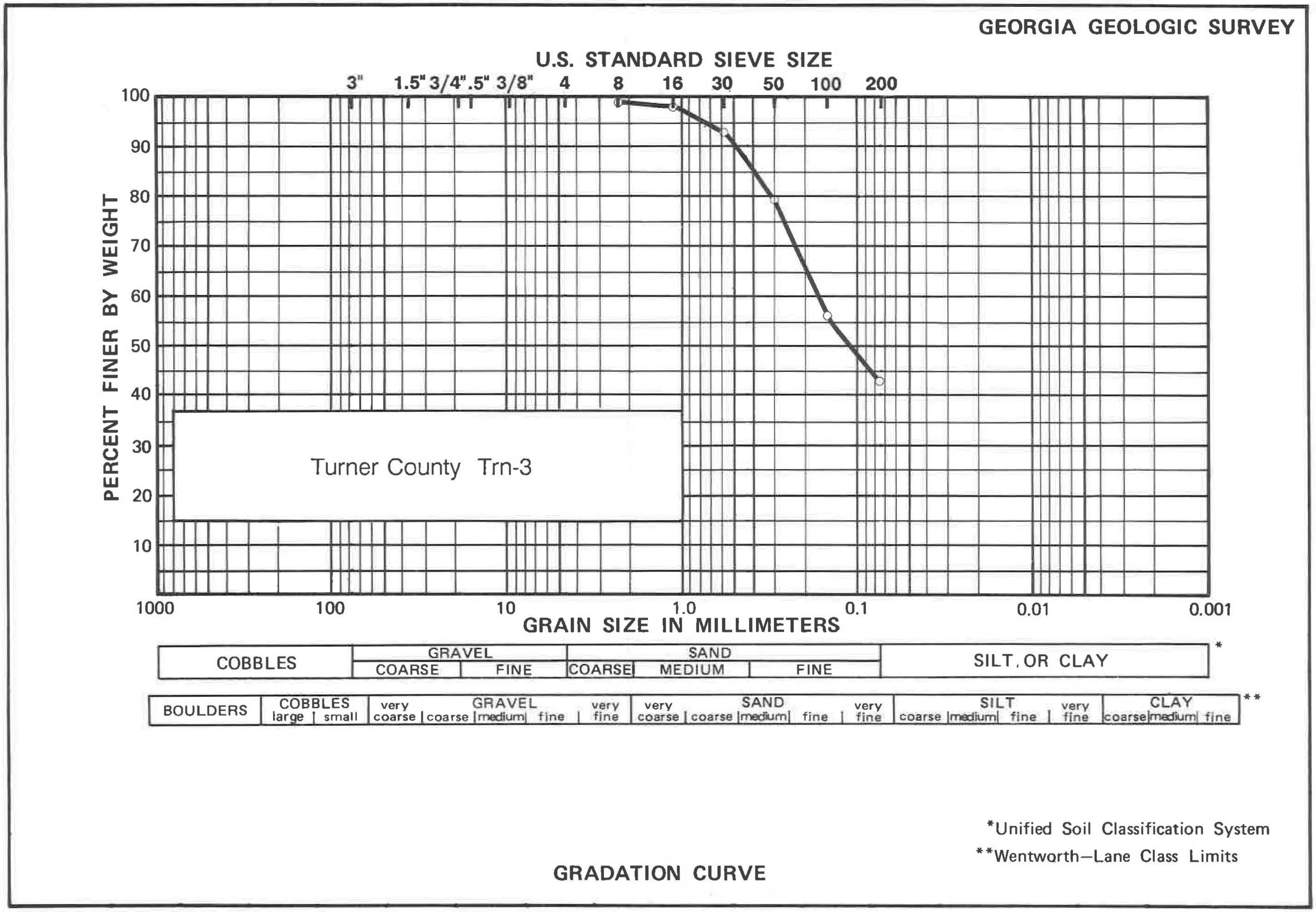


Figure 144. Size distribution curve of Sample Trn-3.

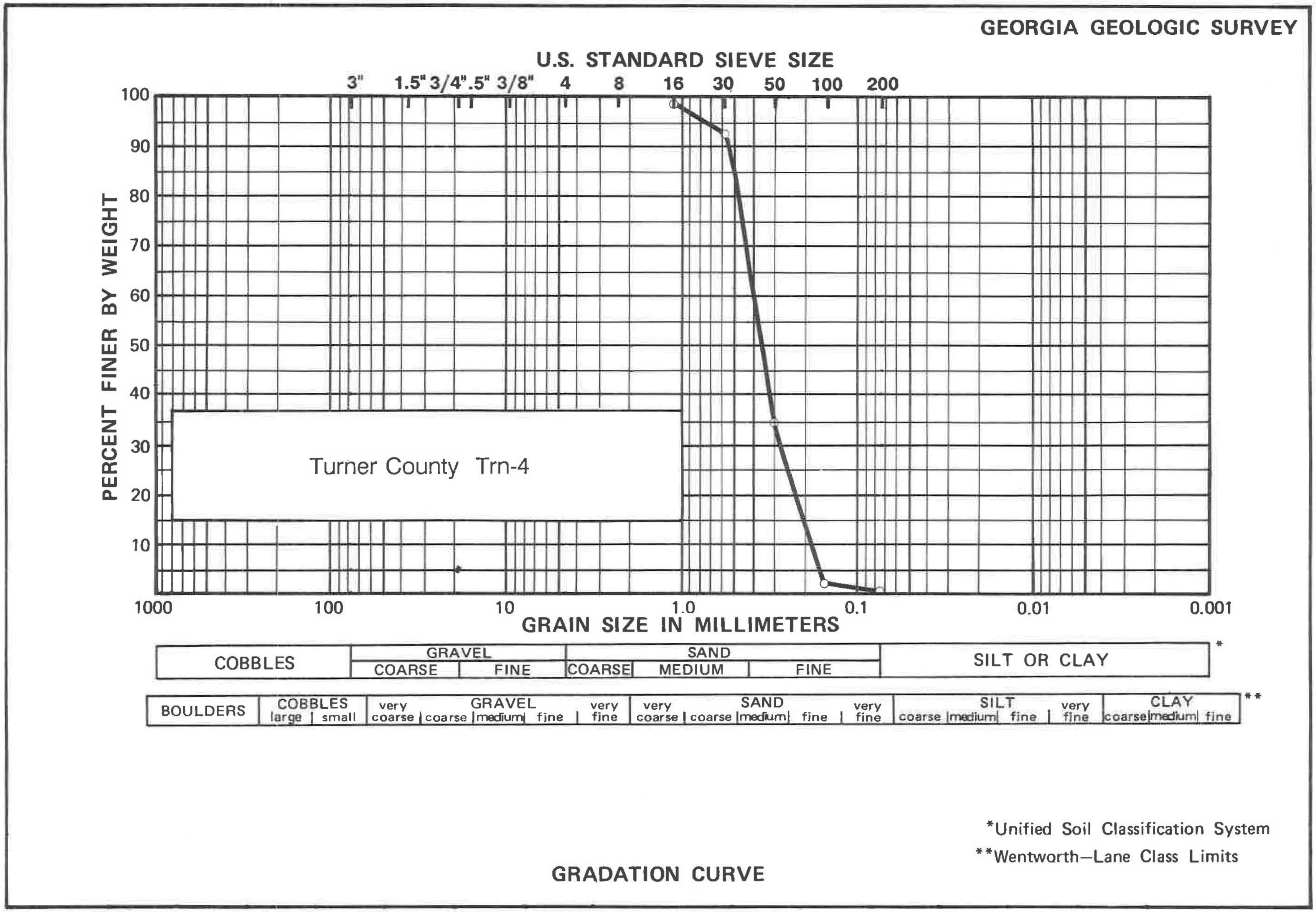


Figure 145. Size distribution curve of Sample Trn-4.

Table 29. Turner County Sample Data

Sample designation	Depth[1]	Sample type	Minimum thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Trn-1	12'	auger	12'	1	no[3]	2
Trn-2	8'	auger	8'	2	no[3]	2
Trn-3	8'	auger	8'	1	no	0
Trn-4	10'	trench	10'	1	no[3]	0

[1]For trench samples, this figure is the vertical length of the trench.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33, may be upgraded to meet specifications.

Summary Evaluation

The sites represented by samples Trn-1, Trn-2 and Trn-4 have some potential for aggregate production. The construction material potential for this part of Turner County is moderate.

Twiggs County

Geology and Physiography

The surficial sediments of Twiggs County are derived from the Barnwell Group, the Oconee Group, deposits of Oligocene age, and Quaternary alluvium. Twiggs County lies within the Fall Line Hills and the Vidalia Upland Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 265) noted the occurrence of coarse-grained sand along Big Sandy Creek (Fig.146, Ts-38). He also noted the occurrence of medium-grained sand on the tops of hills in Twiggs County (Fig.146, Ts-39).

Present Study

The soil series used in targeting sites in Twiggs County was Lakeland and is found along the Ocmulgee River, as well as Big Sandy and Turkey Creeks. The geomorphic feature targeted was a possible terrace deposit of the Ocmulgee River. Six samples, representing five sites in Twiggs County, were analyzed for aggregate potential (Fig.146, Table 30).

Evaluation

Samples Twi-1a, Twi-1b, Twi-3, and Twi-4 were taken from areas of preferred soil types. Sample Twi-2 was taken from an area mentioned by Teas (1921, p. 265). Sample Twi-5 was taken from a site where a preferred soil type corresponds with the terrace deposit.

None of the material in these samples met ASTM Standard C-33; however, sample Twi-4 contains very little fine-grained material and some coarse gravel.

Mining Activity

Quality Sands operates a 37 acre sand pit in Twiggs County (Fig.146), but no information about their operation was available for this publication.

Summary Evaluation

The site represented by sample Twi-4 is a 15 acre tract, and the deposit extends for a depth of approximately 5 feet. This site could yield as much as 270,000 tons, before upgrading. The construction material potential for Twiggs County is considered to be moderate.

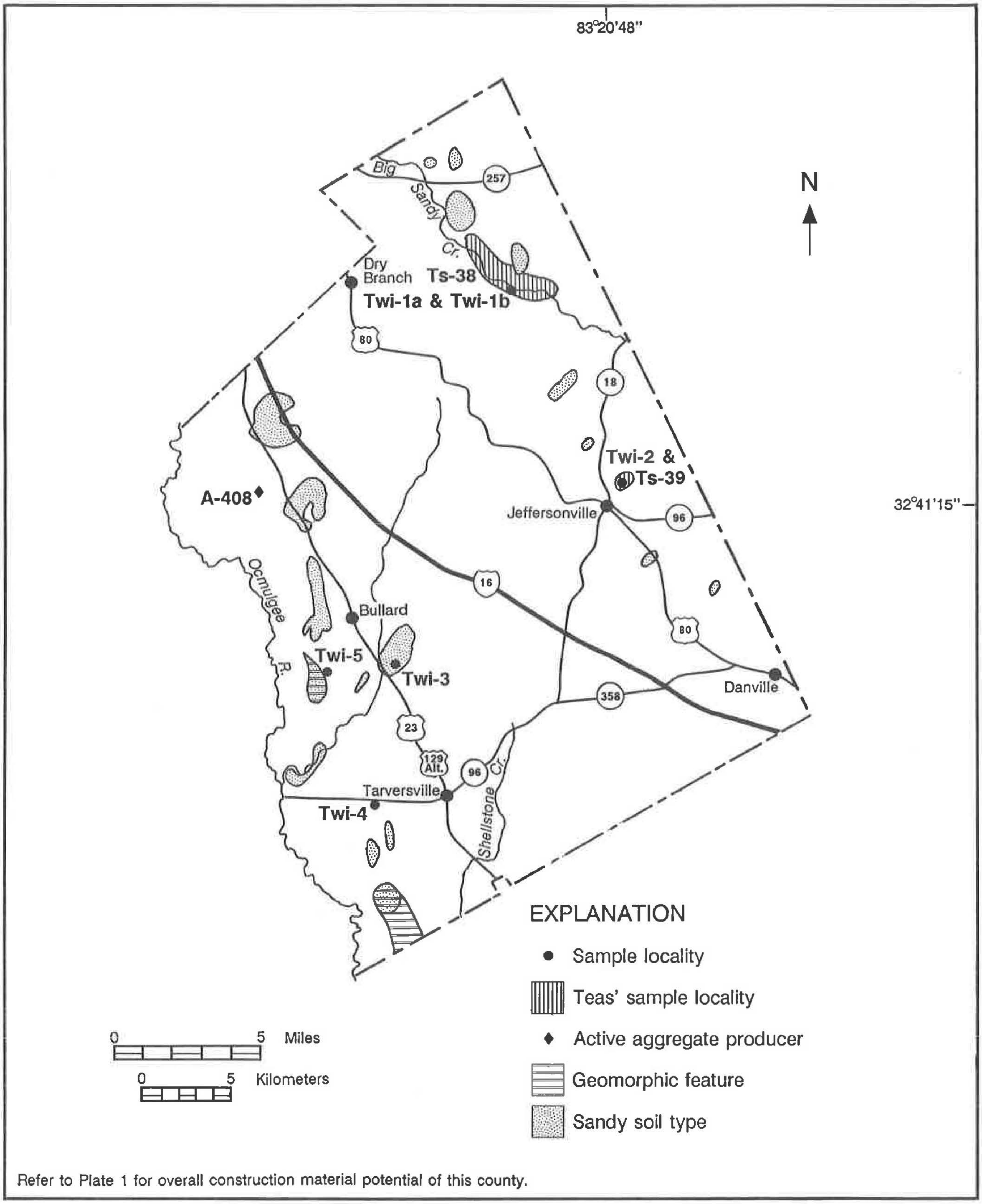


Figure 146. Twiggs County map.

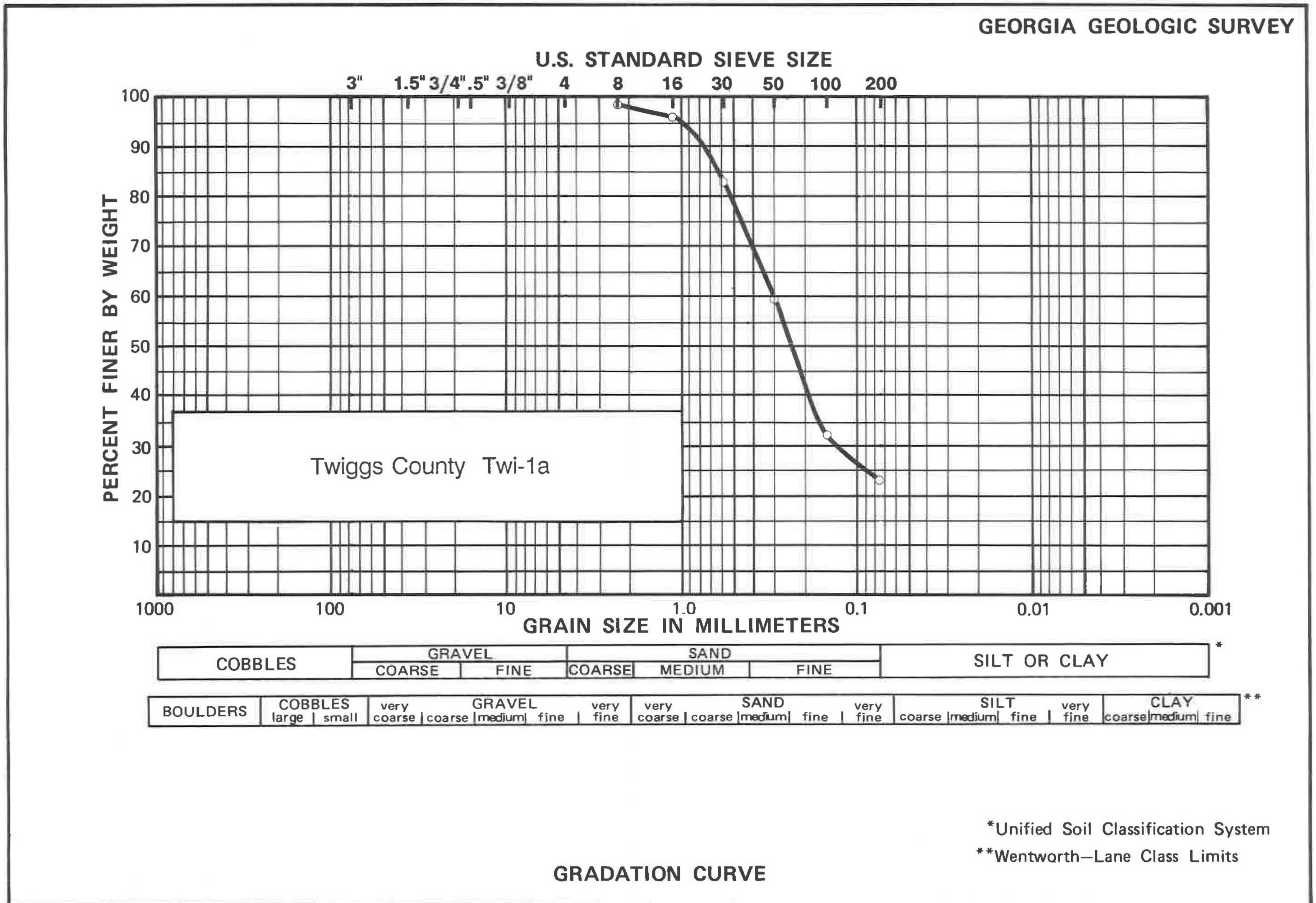


Figure 147. Size distribution curve of Sample Twi-1a.

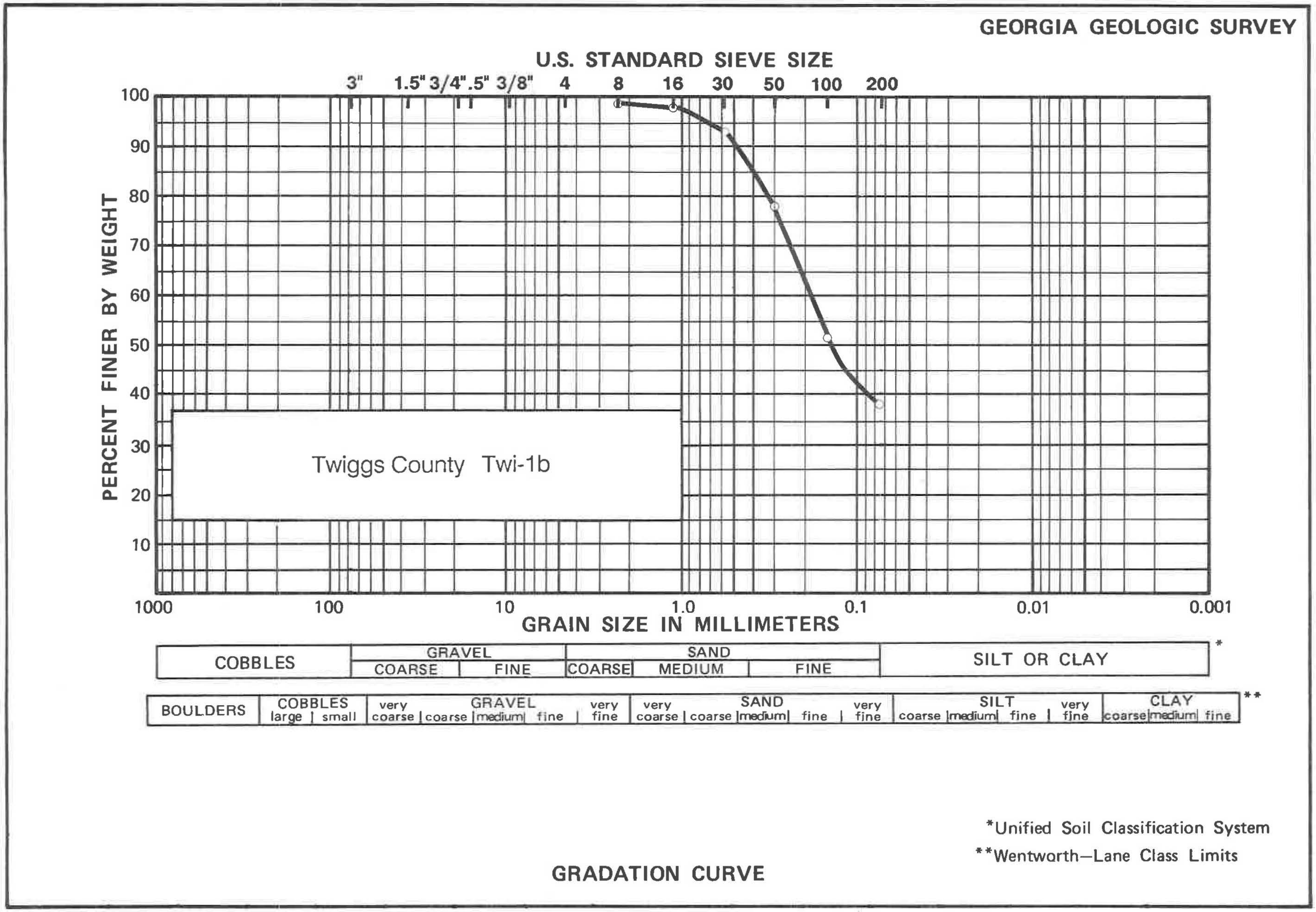


Figure 148. Size distribution curve of Sample Twi-1b.

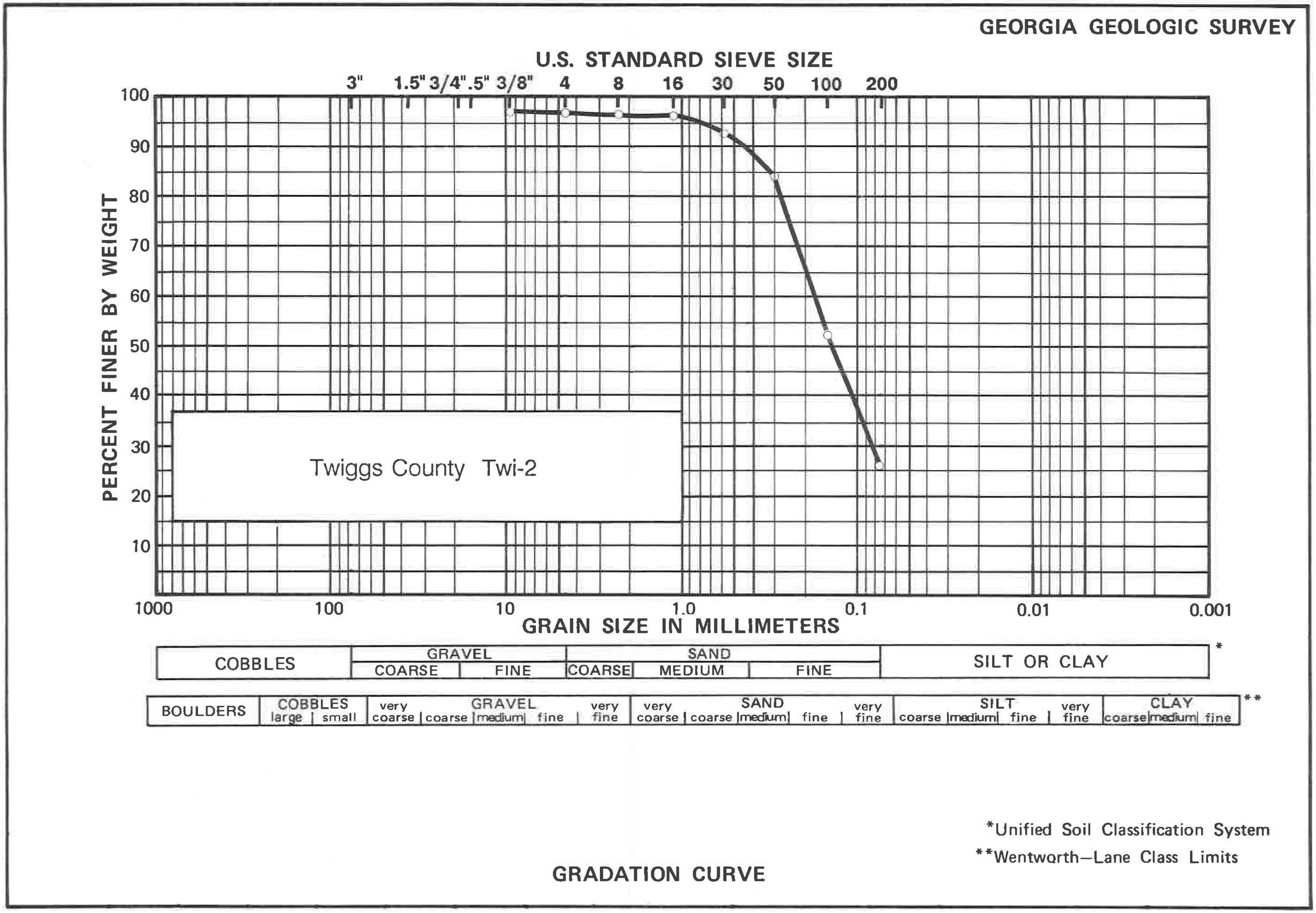


Figure 149. Size distribution curve of Sample Twi-2.

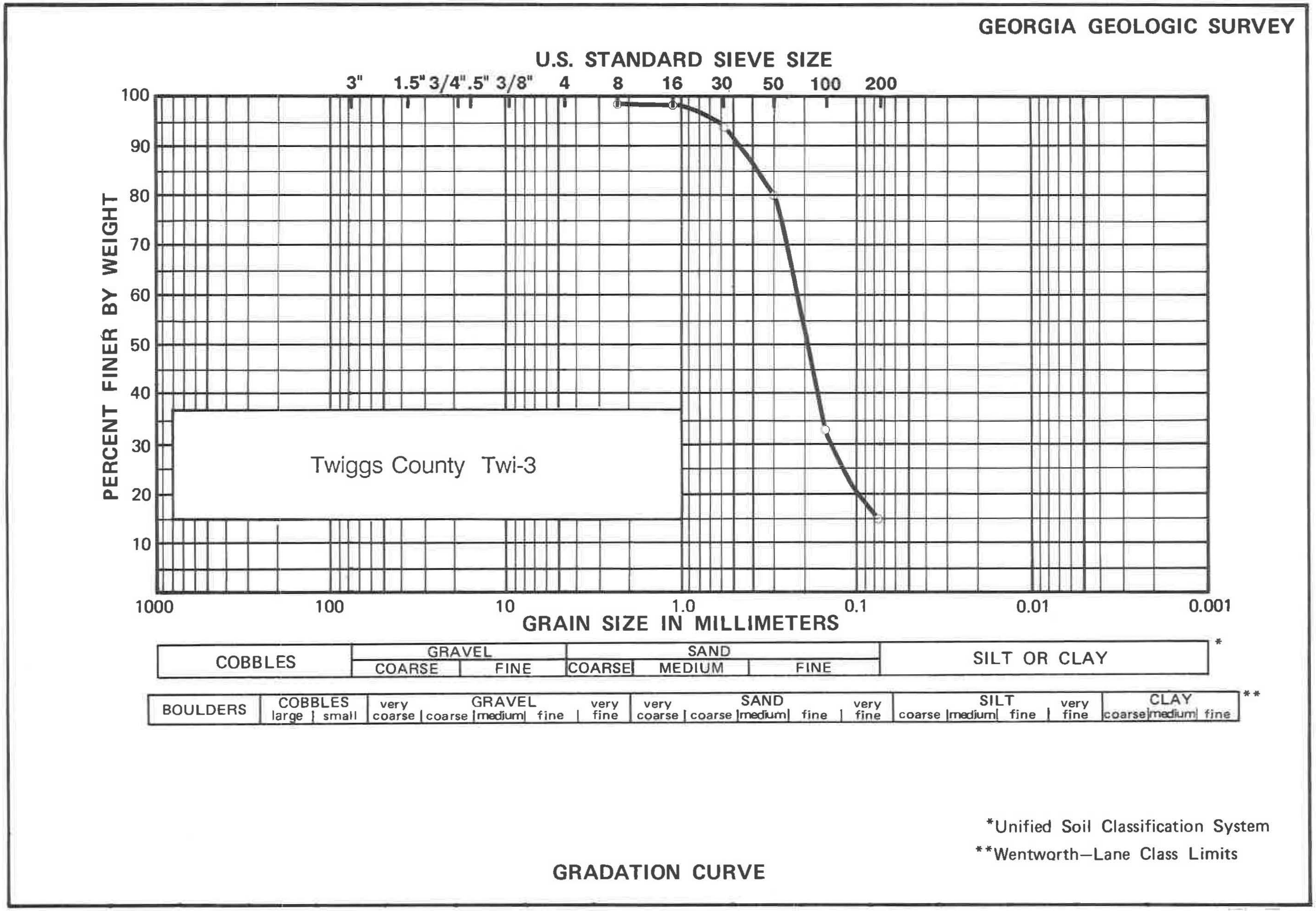


Figure 150. Size distribution curve of Sample Twi-3.

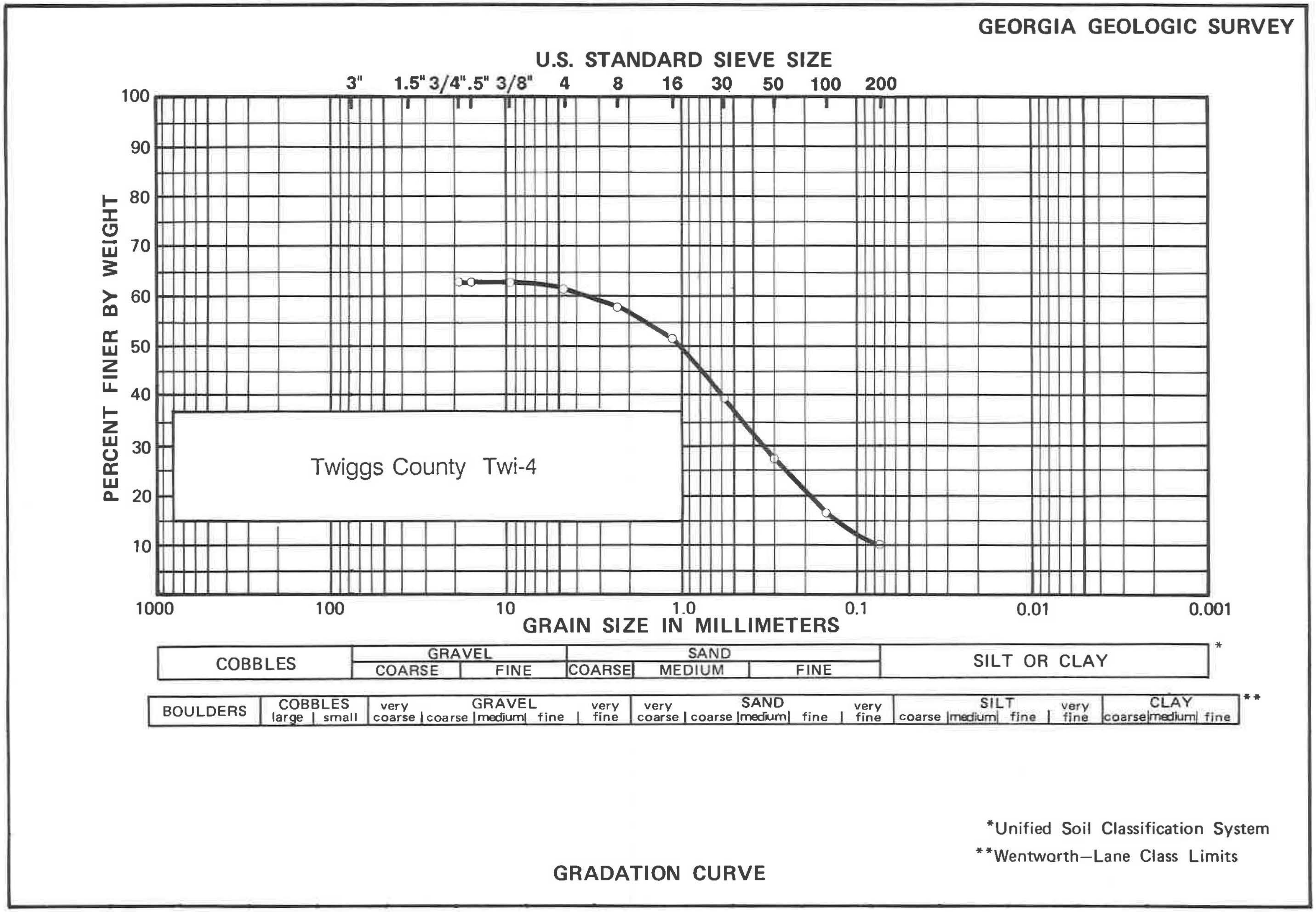


Figure 151. Size distribution curve of Sample Twi-4.

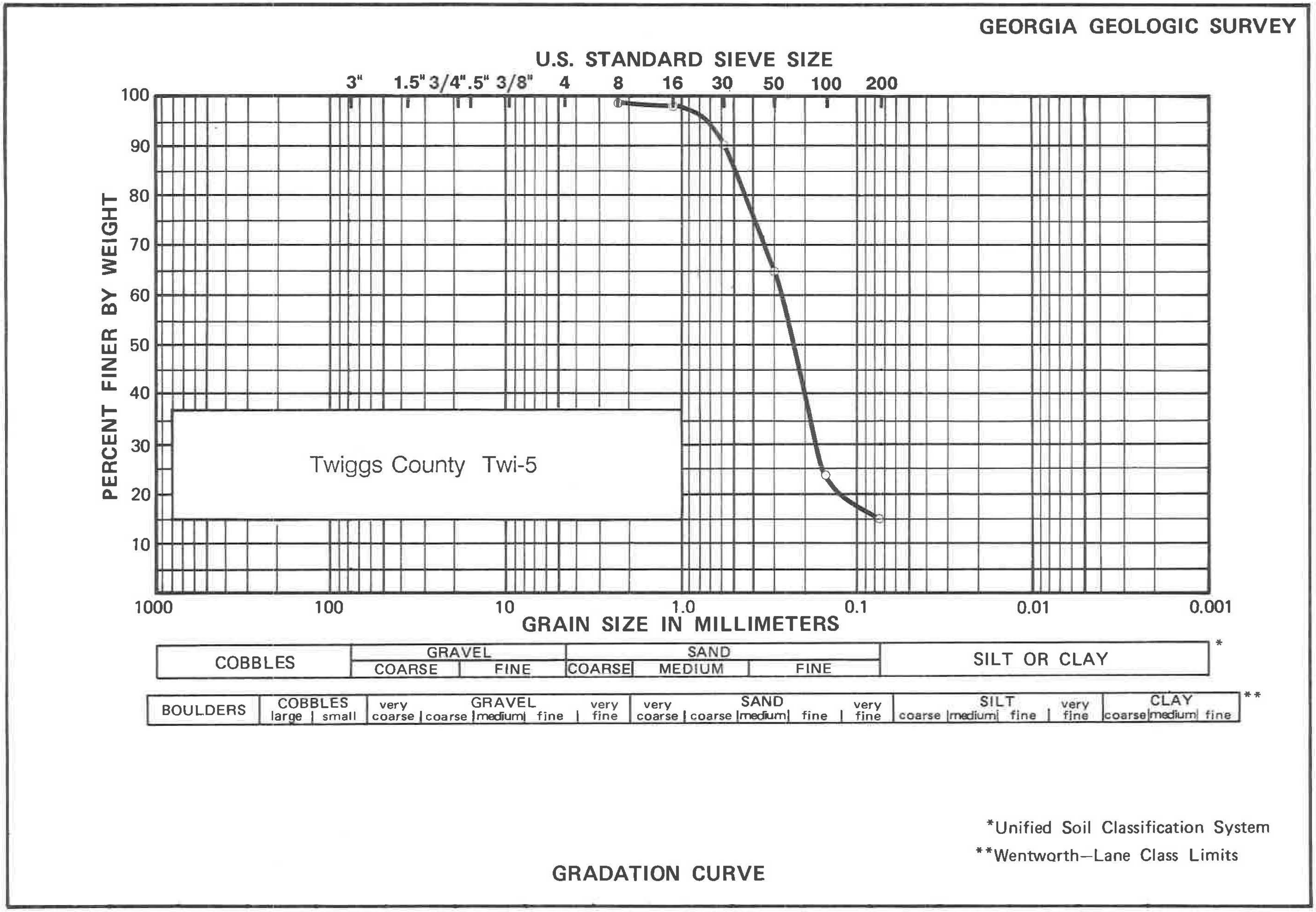


Figure 152. Size distribution curve of Sample Twi-5.

Table 30. Twiggs County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Twi-1a	9'	auger	11'	1	no	0
Twi-1b	2'	auger	11'	1	no	0
Twi-2	10'	trench	10'	1	no	0
Twi-3	11'	auger	11'	1	no	0
Twi-4	5'	trench	5'	1	no	3
Twi-5	14'	auger	14'	2	no	1

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

Ware County

Geology and Physiography

The surficial sediments of Ware County are derived from the Altamaha Formation; as well as the Statenville and the Cypresshead Formations of the Hawthorne Group. Ware County lies within the Bacon Terraces and the Okefenokee Basin Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 266) mentioned the occurrence of medium-to coarse-grained sand along the Satilla River (Fig.153, Ts-40); and particularly at the railroad crossing (Fig.153, Ts-42). Teas (1921, p. 266) reported that clean medium-grained sand is present in large quantities on the banks of the Satilla River (Fig.153, Ts-43) and along the banks of Seventeenmile and Hog Creeks (Fig.153, Ts-41).

Present Study

The soil association targeted for sampling sites in Ware County was #24 (see p. 7). This overlaps the geomorphic features noted which are the sand hills along the Satilla River and Seventeenmile and Hog Creeks. Seven samples were analyzed for construction material potential in Ware County (Fig.153, Table 31).

Evaluation

Sample War-2 was taken from the vicinity of an abandoned sand pit that is within an area targeted for preferred soil type. Sample War-5 was taken from a targeted geomorphic feature. Sample War-6 was taken from an area of preferred soil type which corresponds to the sand hills along the Satilla River. Sample War-7 was taken from an area mentioned by Teas (1921, p. 266; Fig.153, Ts-42), which corresponds to a targeted geomorphic feature, and is also in the vicinity of an abandoned sand pit. None of these samples met ASTM Standard C-33. Sample War-5 is too well-sorted, and samples War-2, War-6, and War-7 are too fine-grained for use as construction aggregate.

Samples War-1 and War-4 were taken from areas in which a targeted soil type, targeted geomorphic features, and also a Teas locality (1921, p.266; Fig.153, Ts-40 and Ts-43, respectively) overlap. War-1 represents a 12 foot deep sample of a deposit which covers approximately 50 acres; War-4 represents a 13 foot deep sample of a tract that covers approximately 70 acres. Sample War-3, taken from the vicinity of a fill-material pit (Fig.153, F-651), represents a 12 foot deep sample of a tract that extends for approximately 80 acres. Even though these samples did not meet ASTM Standard C-33, they could be upgraded for use as construction aggregate and could (before upgrad-

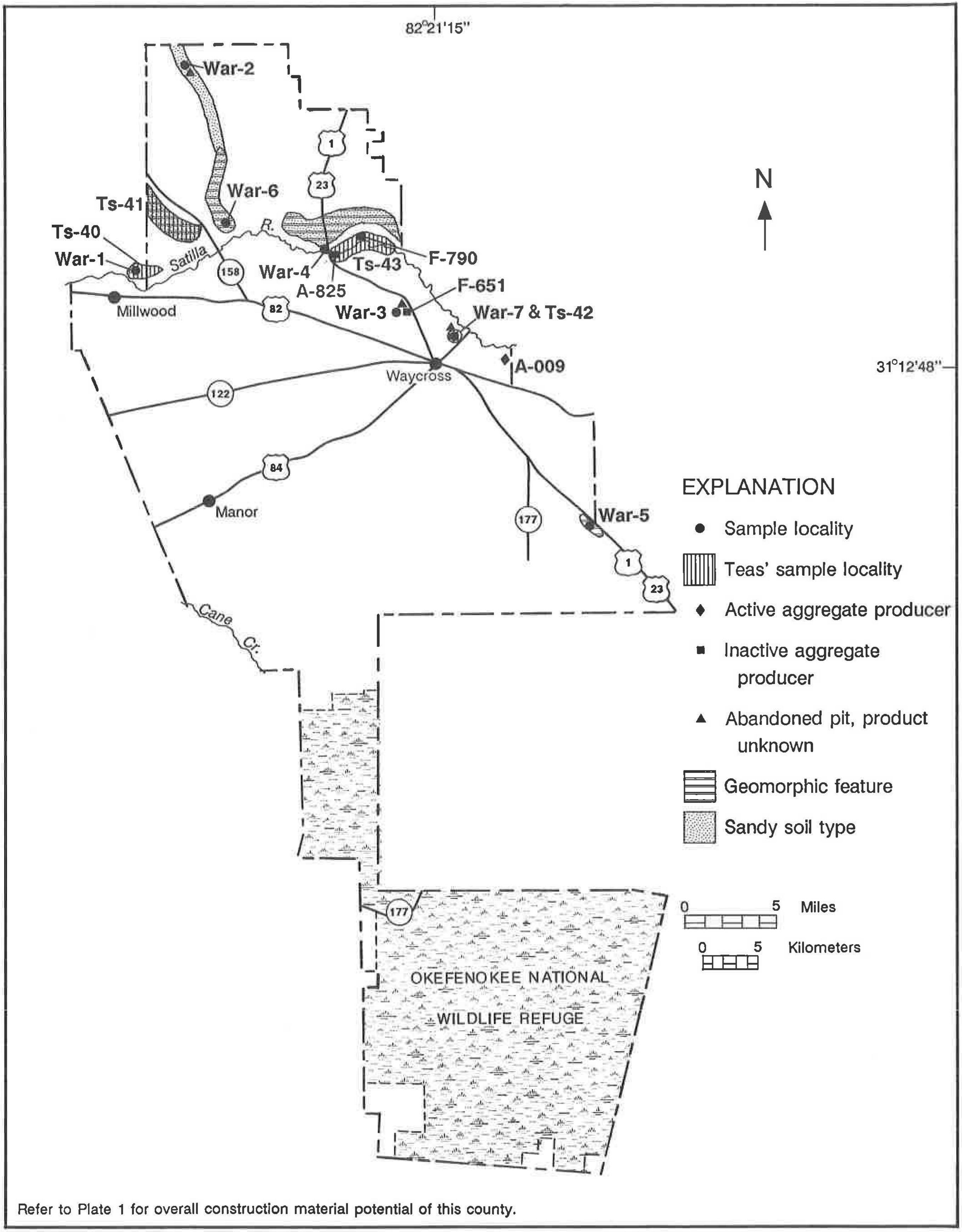


Figure 153. Ware County map.

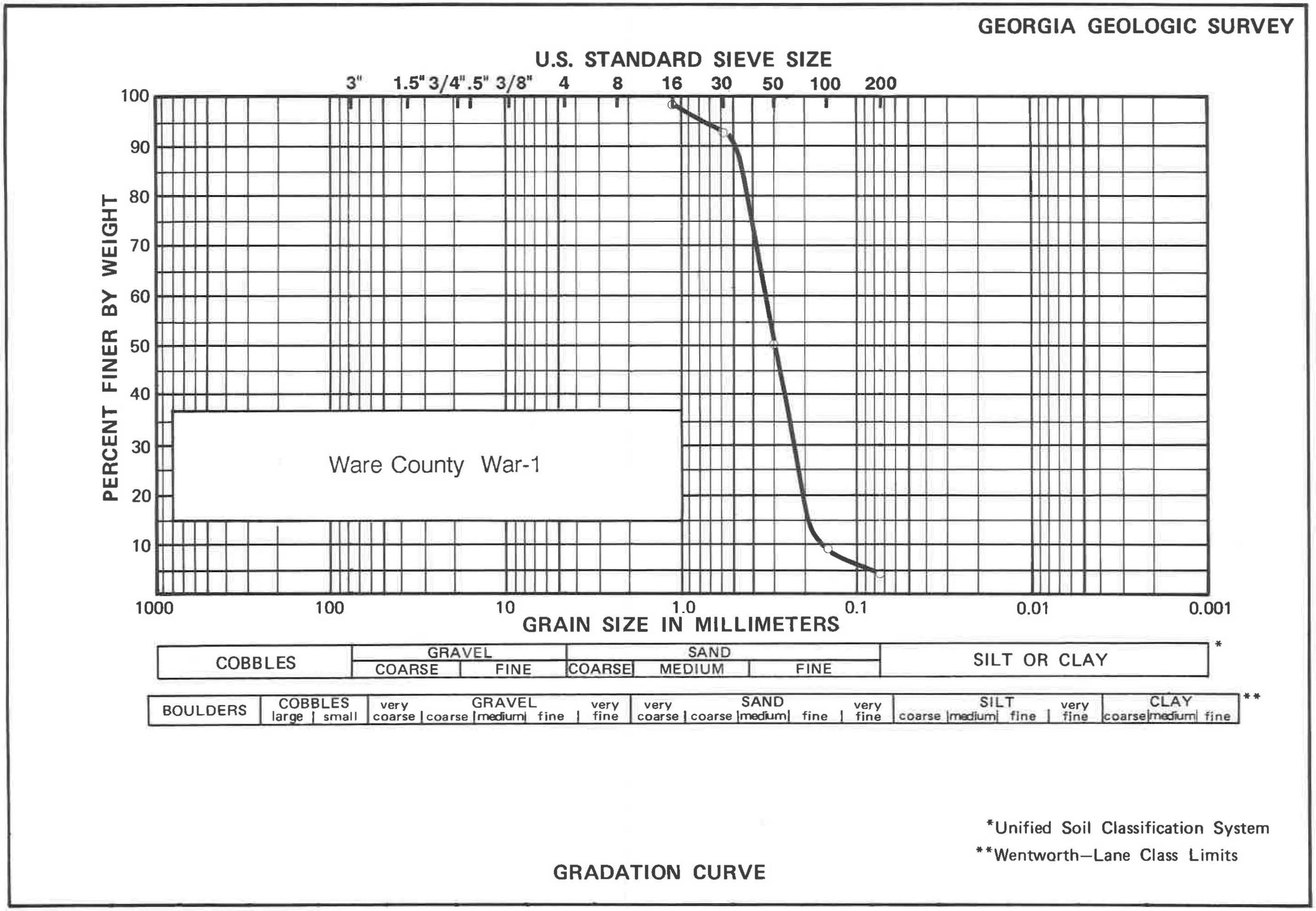


Figure 154. Size distribution curve of Sample War-1.

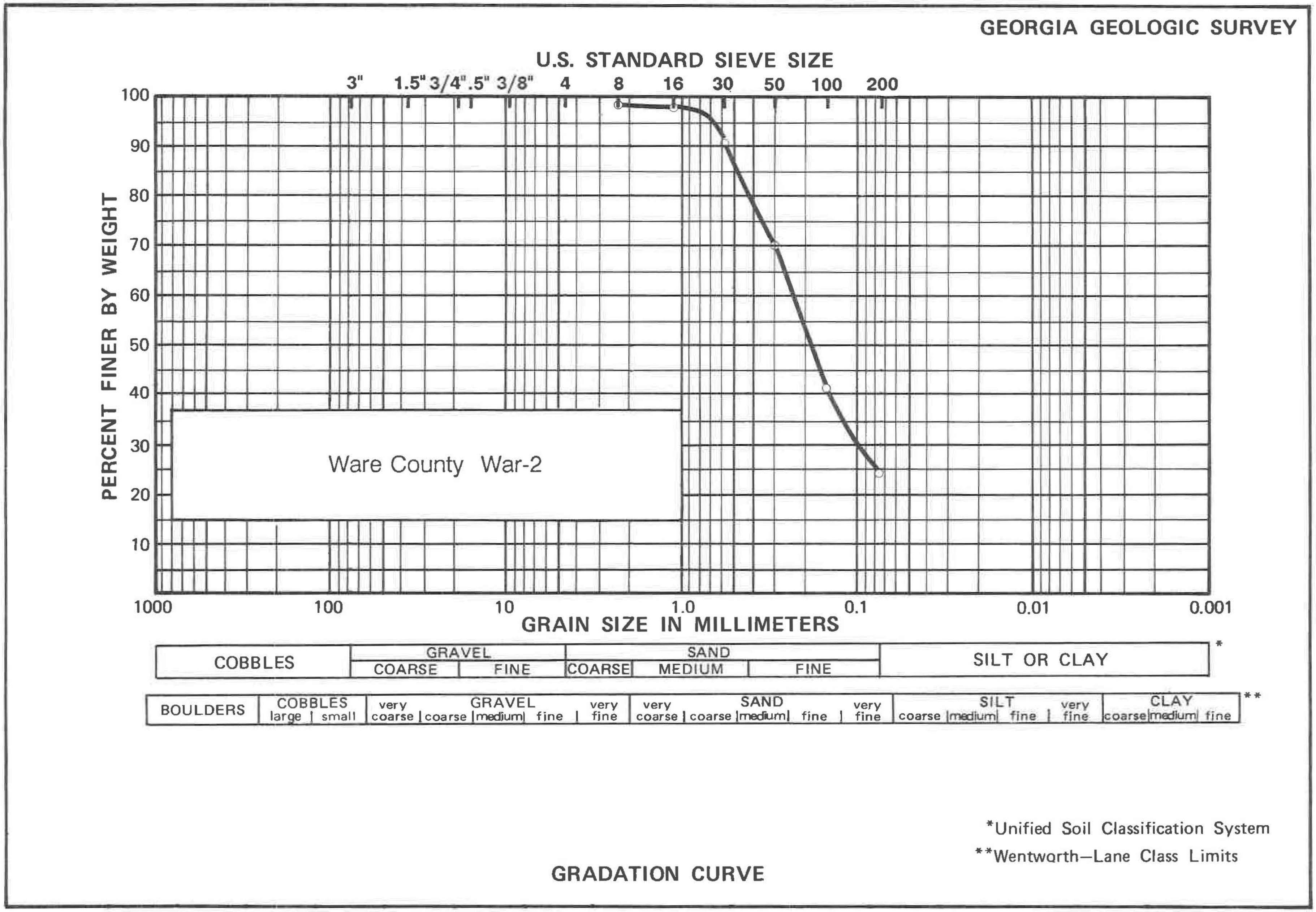


Figure 155. Size distribution curve of Sample War-2.

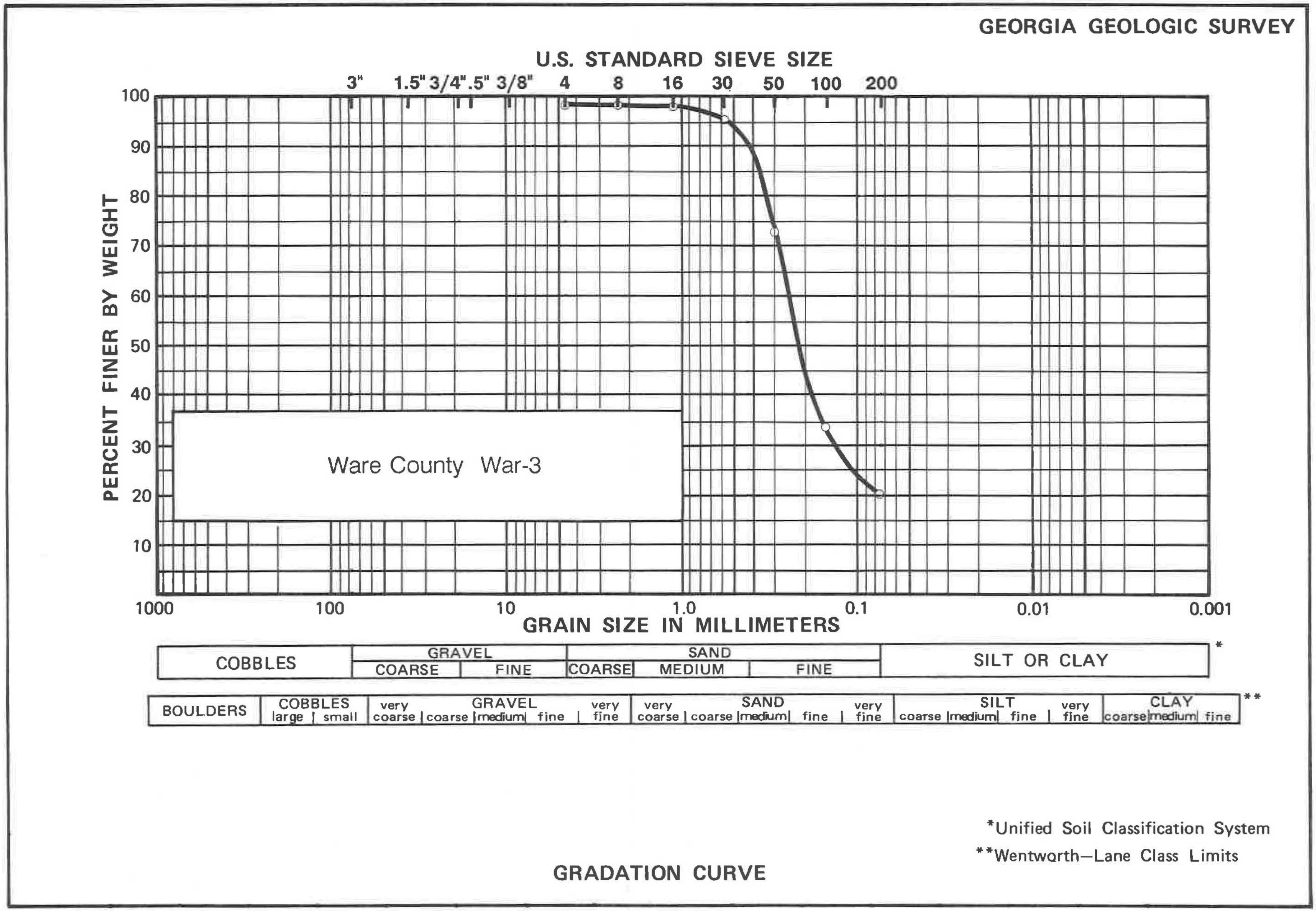


Figure 156. Size distribution curve of Sample War-3.

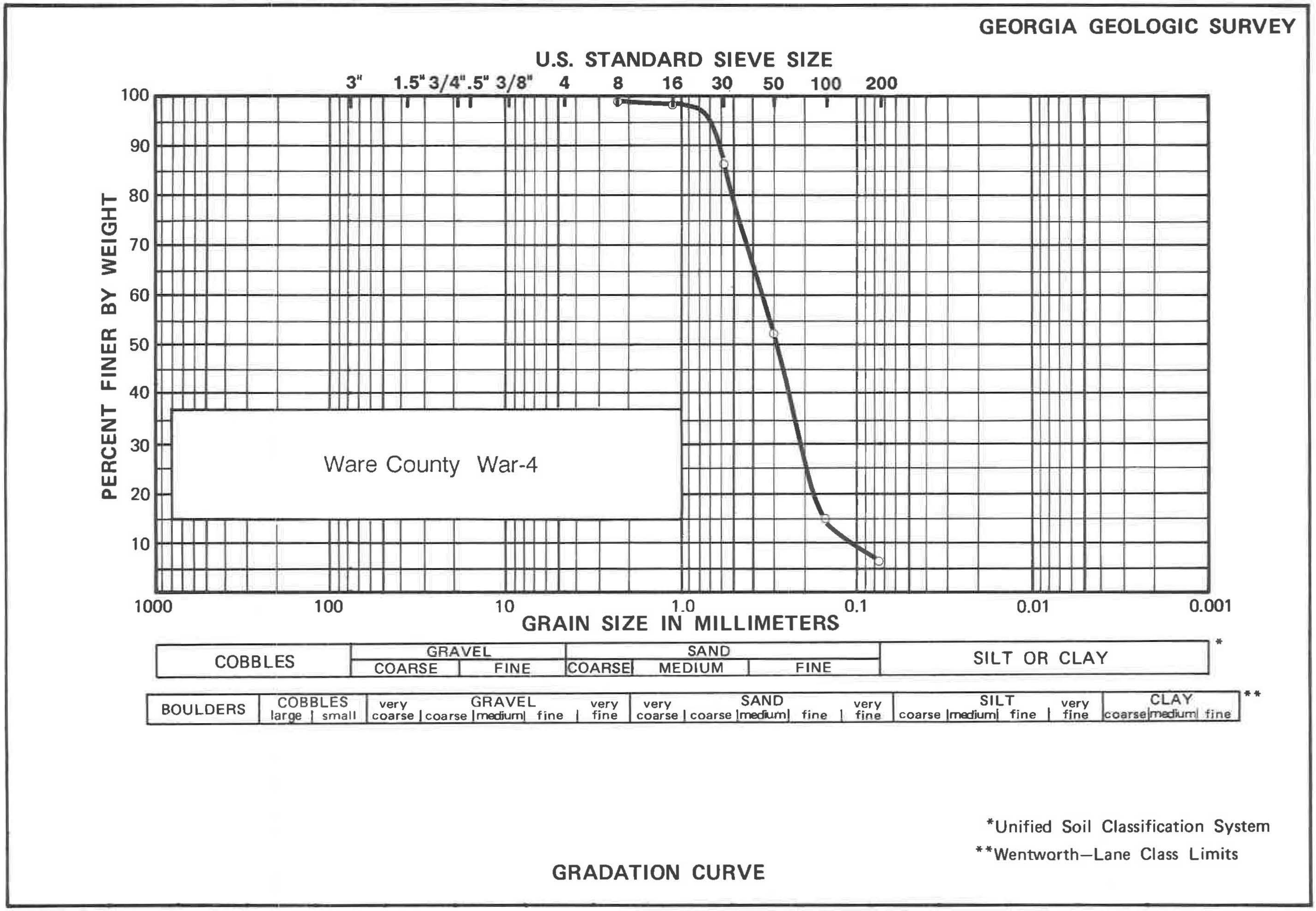


Figure 157. Size distribution curve of Sample War-4.

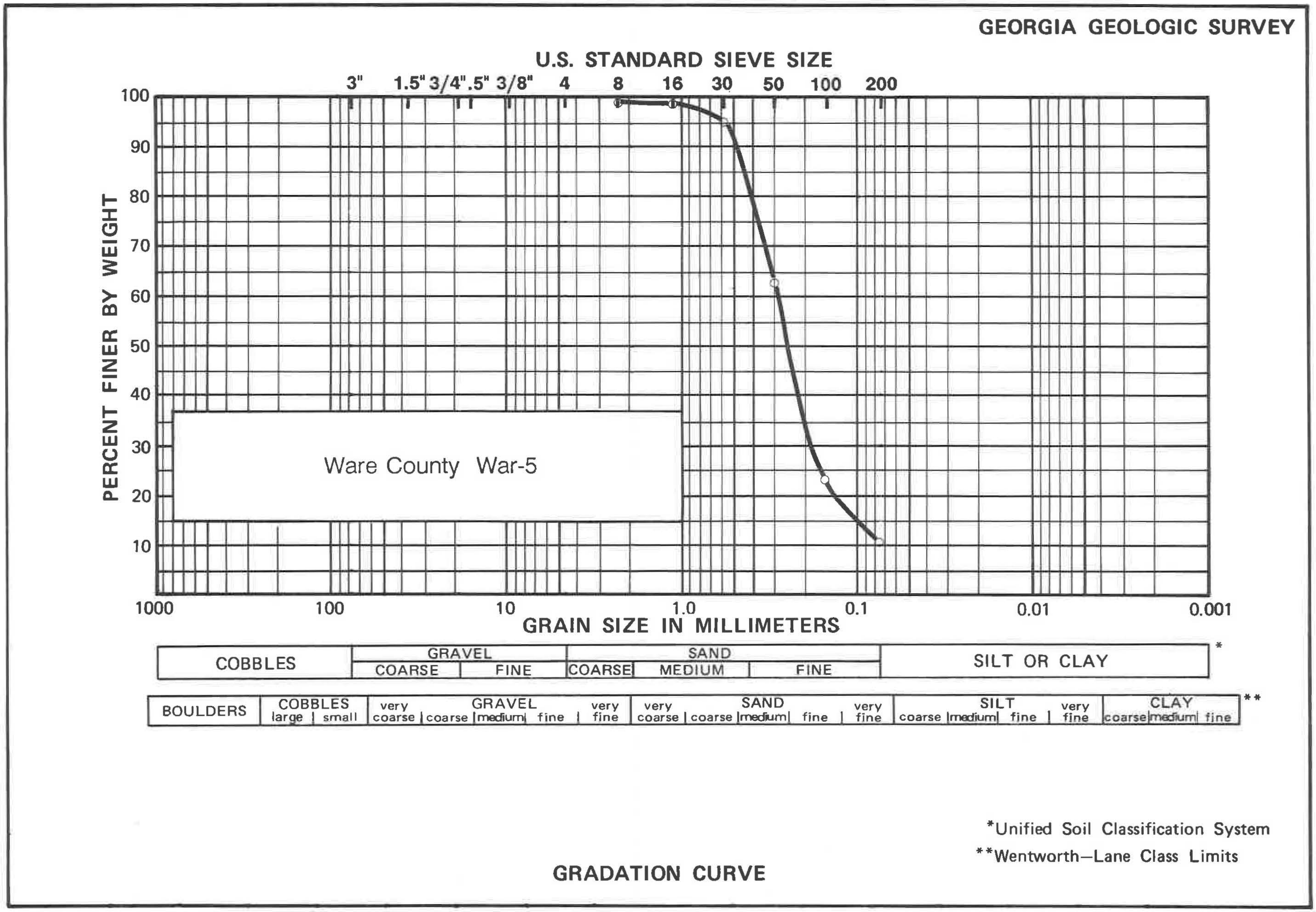


Figure 158. Size distribution curve of Sample War-5.

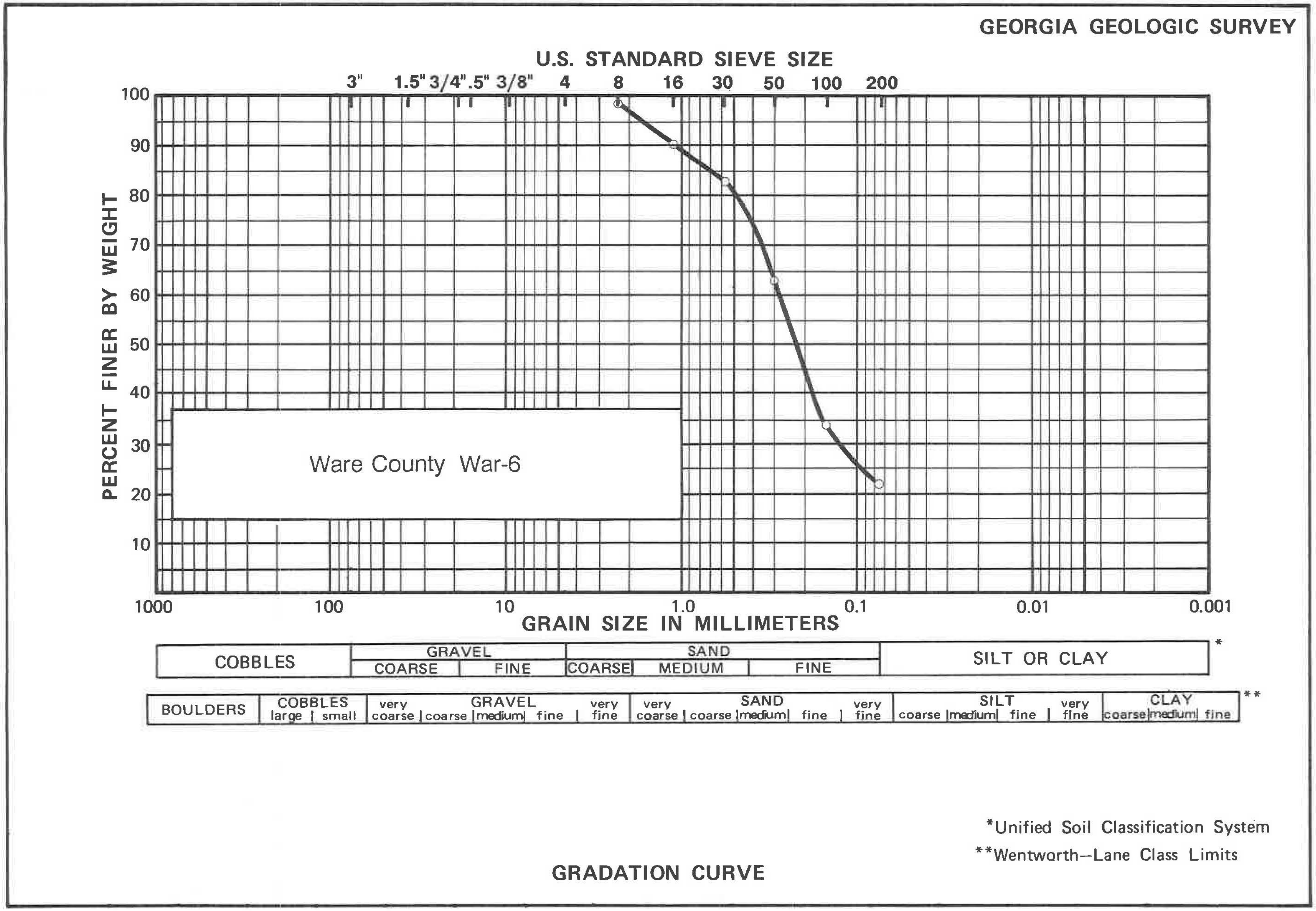


Figure 159. Size distribution curve of Sample War-6.

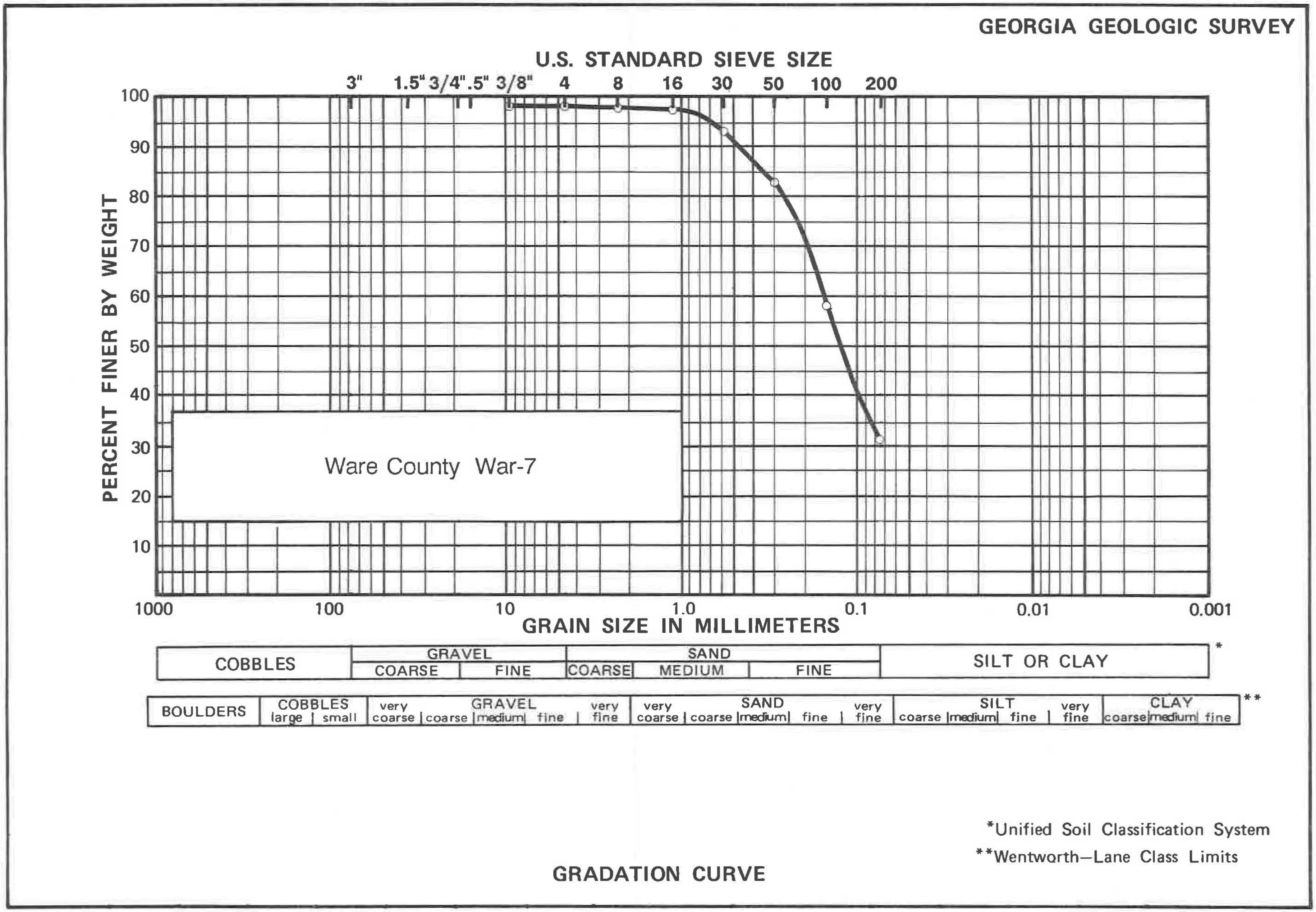


Figure 160. Size distribution curve of Sample War-7.

ing) yield as much as 1,000,000; 2,000,000; and 2,100,000 tons of sand, respectively.

Mining Activity

There are four active aggregate producers in Ware County (Fig.153, A-009, F-651, F-790, A-825). Pit # F-651 is operated by the Ware County Commission and produces only fill material. Pit # F-790 is a 4 acre pit operated by the city of Waycross and, also, produces fill material. Pit # A-009 is an 8 acre pit operated by Minchew Sand, and pit # A-825 a 10 acre pit operated by Waycross Sand. No other information is available for any of these operations.

Summary Evaluation

The deposits represented by samples War-1, War-4, and War-3 could provide 430,000; 660,000; and 70,000 tons of sand, respectively, if the material were upgraded to ASTM Standard C-33. There is evidence of sand mining throughout the county, especially in the sand hills along the rivers and creeks. No information was attainable from the sand producers in the county other than the fact that two producers are actively producing sand products. The construction material potential for Ware County is considered to be moderate.

Washington County

Geology and Physiography

The surficial sediments of Washington County are derived from the Barnwell Group, the Oconee Group, and Quaternary alluvium. Washington County lies within the Fall Line Hills and the Vidalia Upland Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 267) noted an occurrence of coarse-grained sand near Big Buffalo Creek (Fig.161, Ts-44).

Present Study

The soil series used in targeting sites for sampling in Washington County was Fuquay, and can be found as small sandy bodies scattered throughout the county. The geomorphic features noted were the sand hills along the Oconee River. Four sites were sampled and analyzed for construction aggregate in Washington County (Fig.161, Table 32).

Evaluation

Sample Was-1 was taken from sand hills along the Little Ohoopee River. Sample Was-2 was

Table 31. Ware County Sample Data

Sample designation	Depth[1]	Sample type	Minimum thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
War-1	12'	auger	12'	3	no[3]	2
War-2	9'	auger	9'	2	no	0
War-3	12'	trench	12'	1	no[3]	1
War-4	13'	auger	13'	2	no[3]	2
War-5	8'	auger	8'	1	no	1
War-6	8'	auger	8'	2	no	0
War-7	8'	auger	8'	2	no	

[1]For trench samples, this figure is the vertical length of the trench.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.

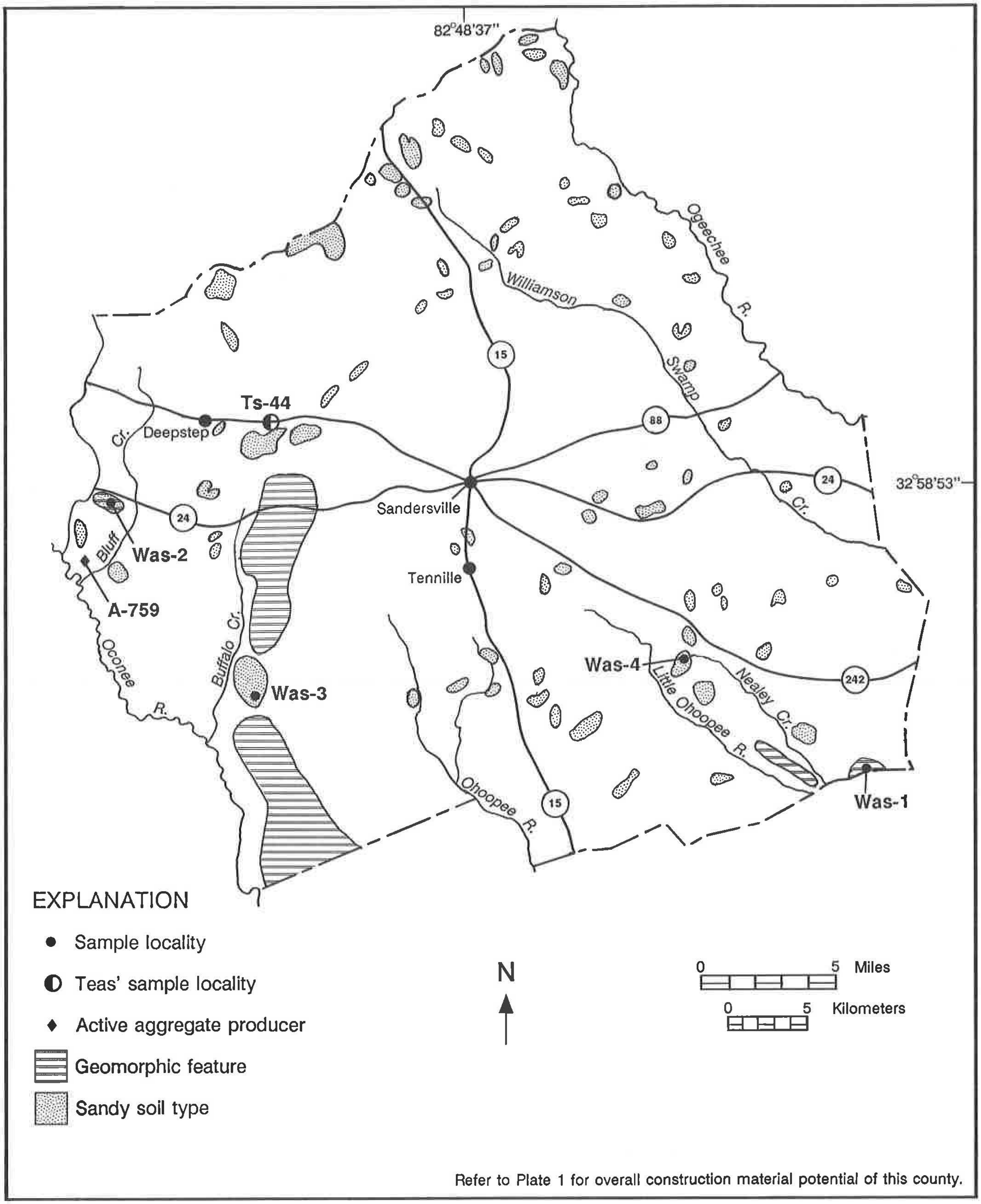


Figure 161. Washington County map.

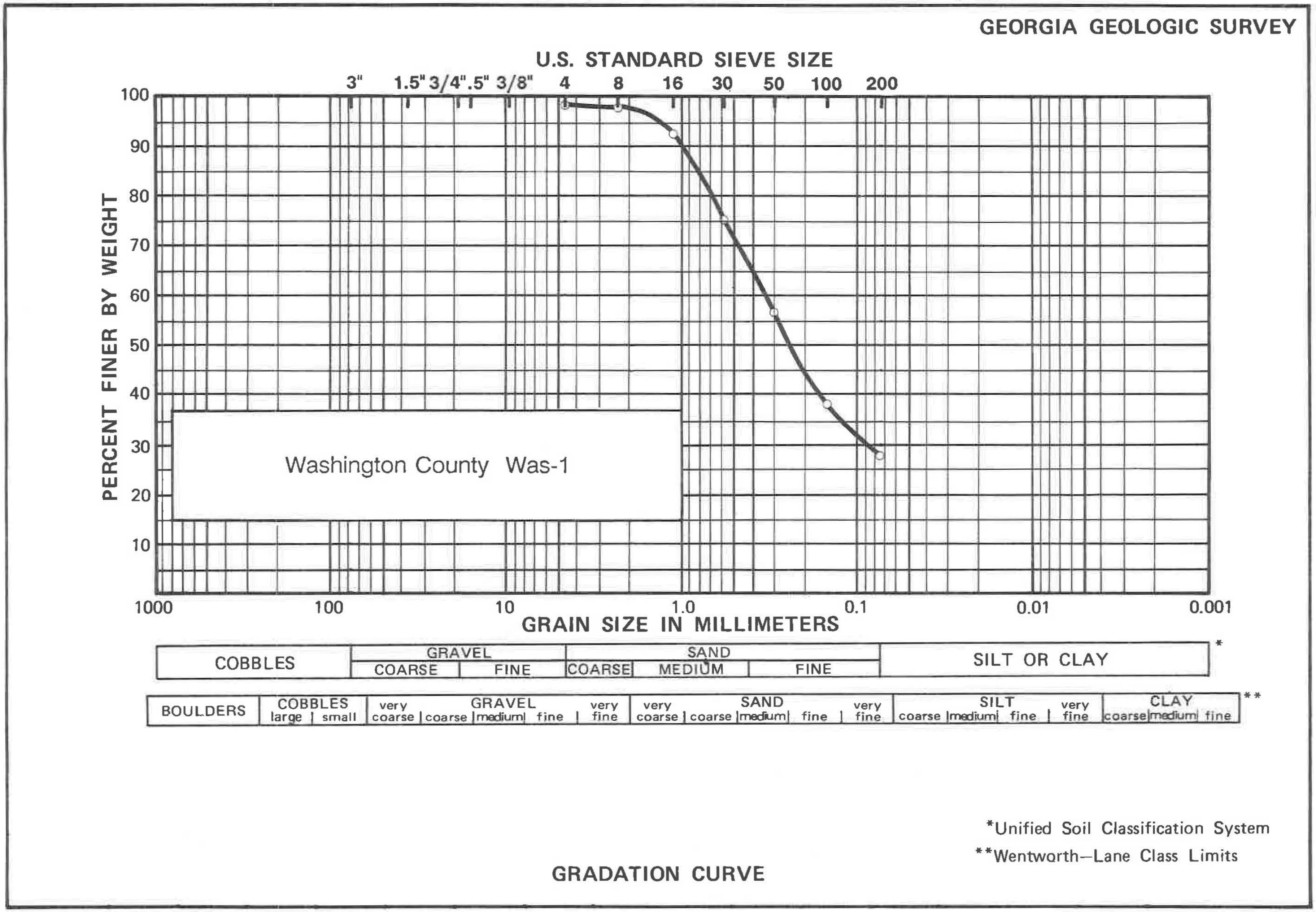


Figure 162. Size distribution curve of Sample Was-1.

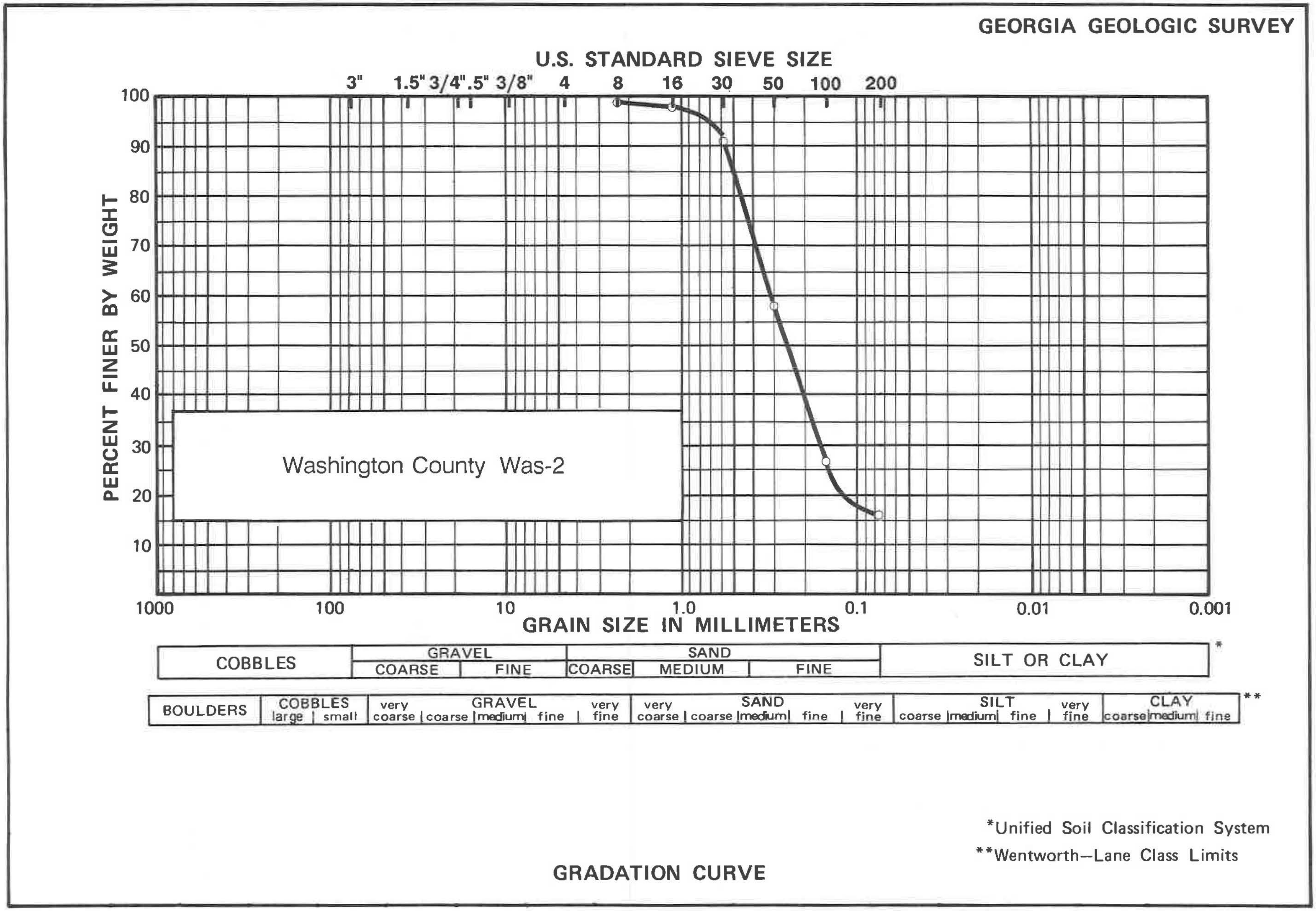


Figure 163. Size distribution curve of Sample Was-2.

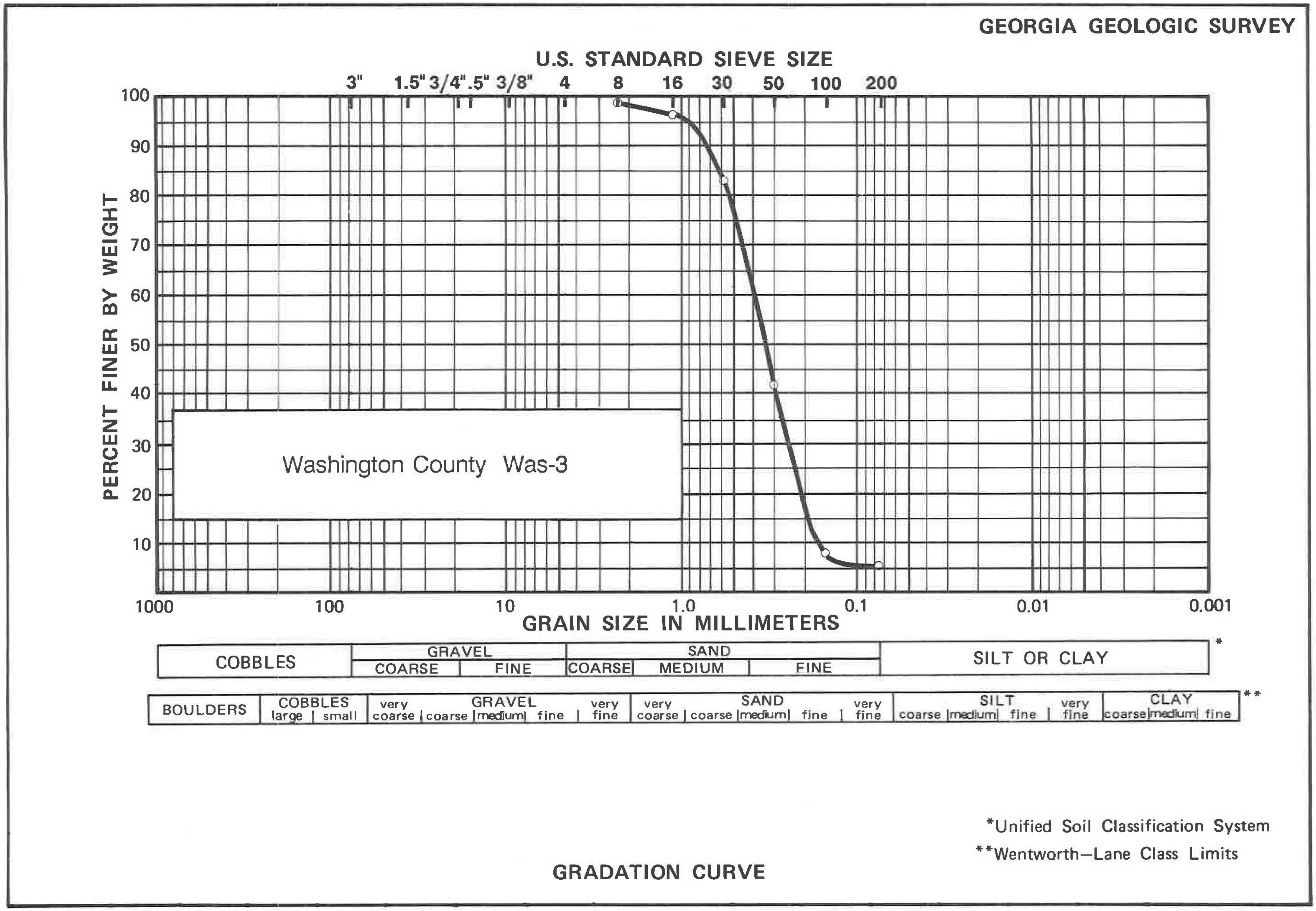


Figure 164. Size distribution curve of Sample Was-3.

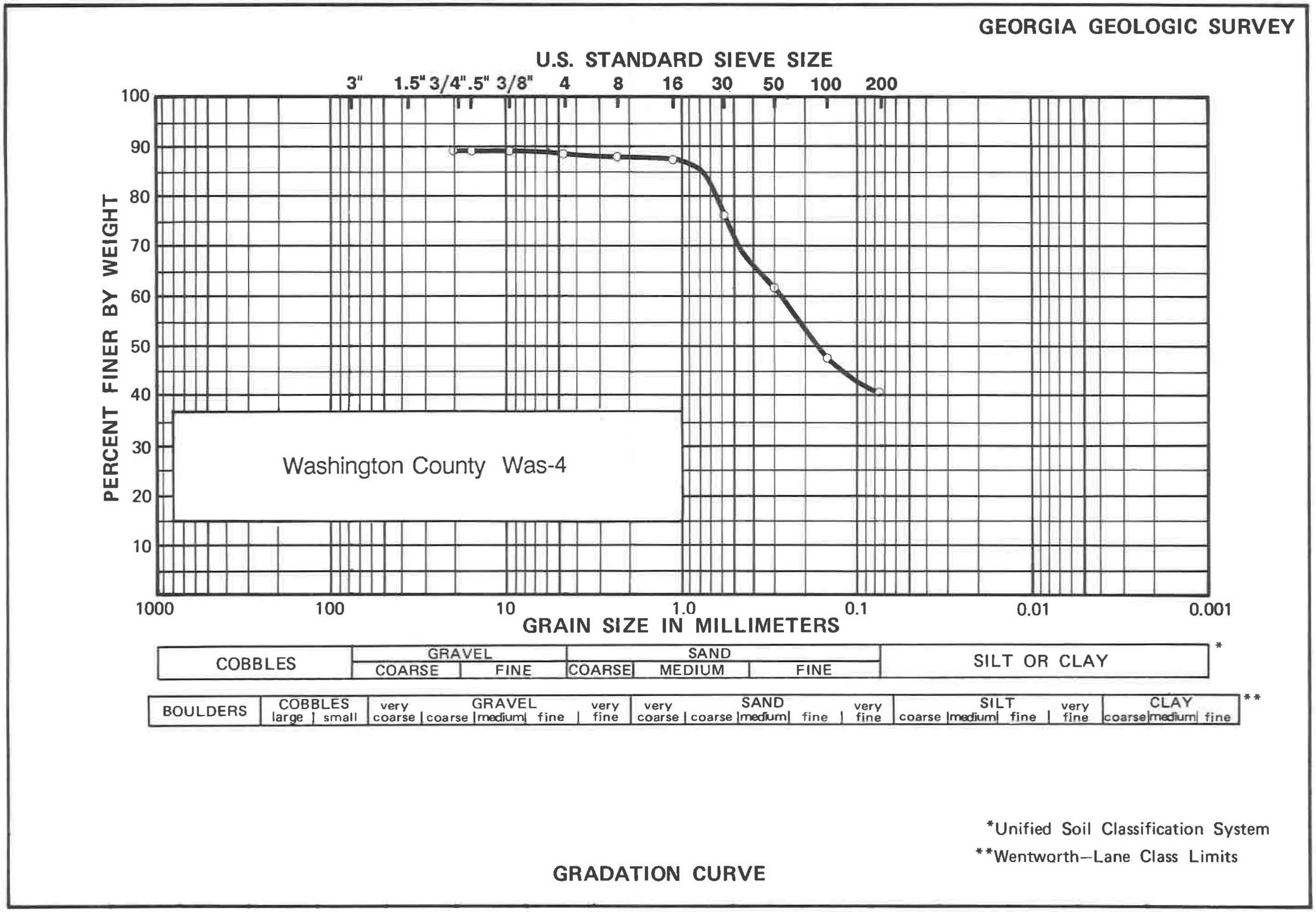


Figure 165. Size distribution curve of Sample Was-4.

taken from an area where the preferred soil type corresponds to the sand hills along the Oconee River. Sample Was-4 was taken from an area of the preferred soil type. None of these samples met ASTM Standard C-33. Samples Was-1 and Was-4 are too fine-grained, and samples Was-2 and Was-3 are too well-sorted for use as construction aggregate.

Mining Activity

There is one active aggregate producer in Washington County. Anglo-American mines one acre of a 16 acre pit to a depth of 20 feet with a backhoe. The gravel undergoes no processing but is immediately transported by trucks to their kaolin pits for use as road gravel. Less than 10,000 tons is produced annually.

Summary Evaluation

There were no areas found in Washington County that could provide material for aggregate production, with the possible exception of the deposit being mined for road gravel by Anglo-American. The construction material potential for Washington County is considered to be moderate to low.

Wheeler County

Geology and Physiography

The surficial sediments of Wheeler County are derived from the Altamaha Formation. Wheeler County lies within the Vidalia Upland District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 268-269) reported that a large deposit of clayey sandy gravel at the Darcy property (Fig.166, Ts-45) had been used for aggregate prior to his study. At the Little Ocmulgee River (Fig.166, Ts-46), there are large deposits of medium-grained sand (Teas, 1921, p. 269). Teas (1921, p. 273) also noted a sandy gravel deposit 3.5 miles south of Glenwood (Fig.166, Ts-47) and large quantities of sand in the Oconee River (1921, p. 273).

Present Study

The soil series used in determining sandy areas in Wheeler County were Kershaw and Paola. The targeted soil bodies correspond to the geomorphic features, which are sand hills along the north and east sides of Alligator Creek. Six sites were sampled and analyzed for construction aggregate in Wheeler County (Fig.166, Table 33).

Evaluation

Sample Whe-2 is from an area where a targeted geomorphic feature corresponds with a deposit of the preferred soil type; however, the material is too well-sorted for use as construction aggregate.

Samples Whe-1 and Whe-6 are from deposits of the preferred soil type and in the vicinity of some small abandoned pits. Whe-1 represents a 10-foot deep auger sample, of a site of approxi-

Table 32. Washington County Sample Data

Sample designation	Depth[1]	Sample type	Minimum thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Was-1	7'	auger	7'	1	no	1
Was-2	8'	auger	8'	2	no	1
Was-3	25'	trench	25'	2	no	2
Was-4	4.5'	auger	4.5'	1	no	1

[1]For trench samples, this figure is the vertical length of the trench.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

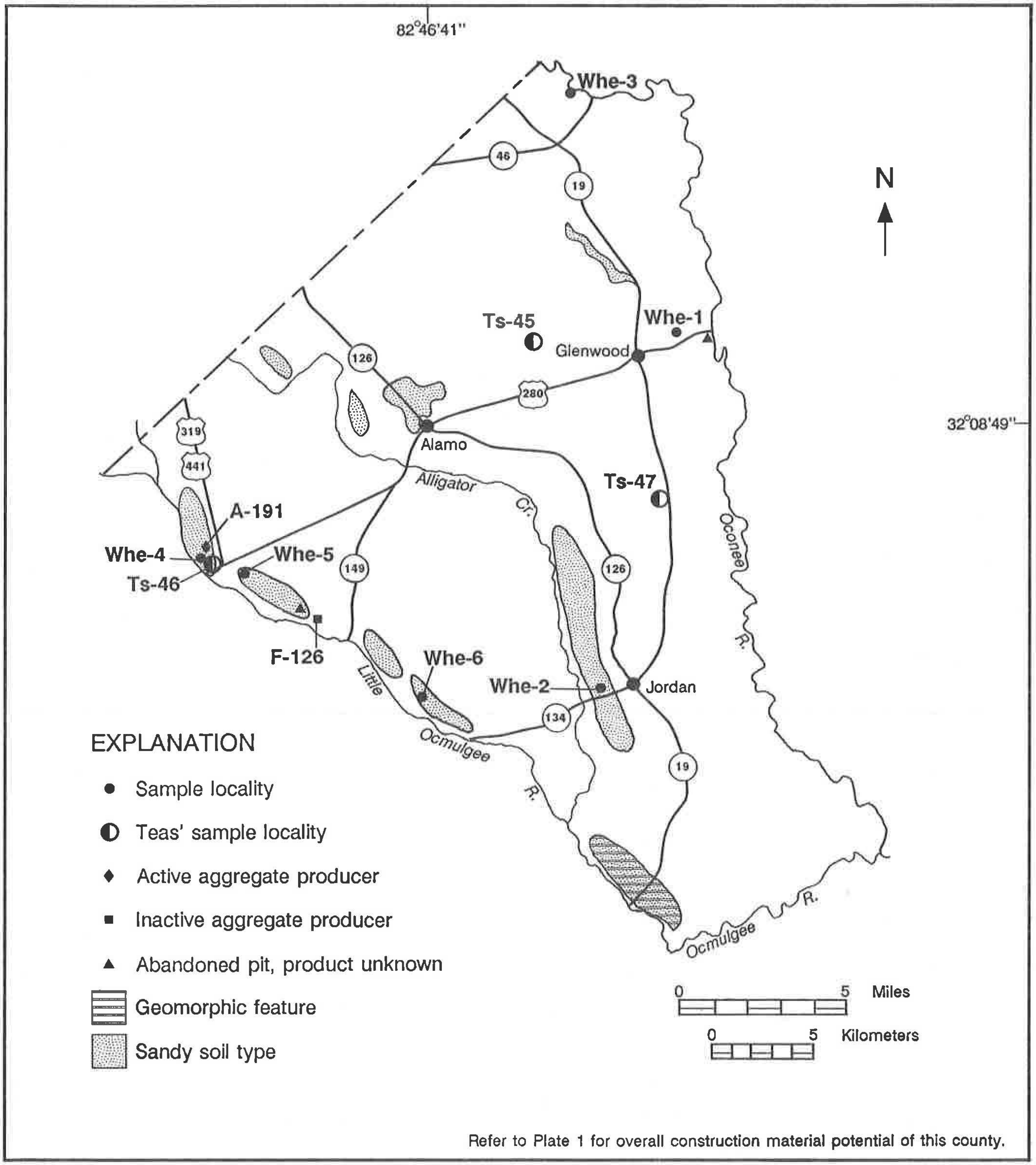


Figure 166. Wheeler County map.

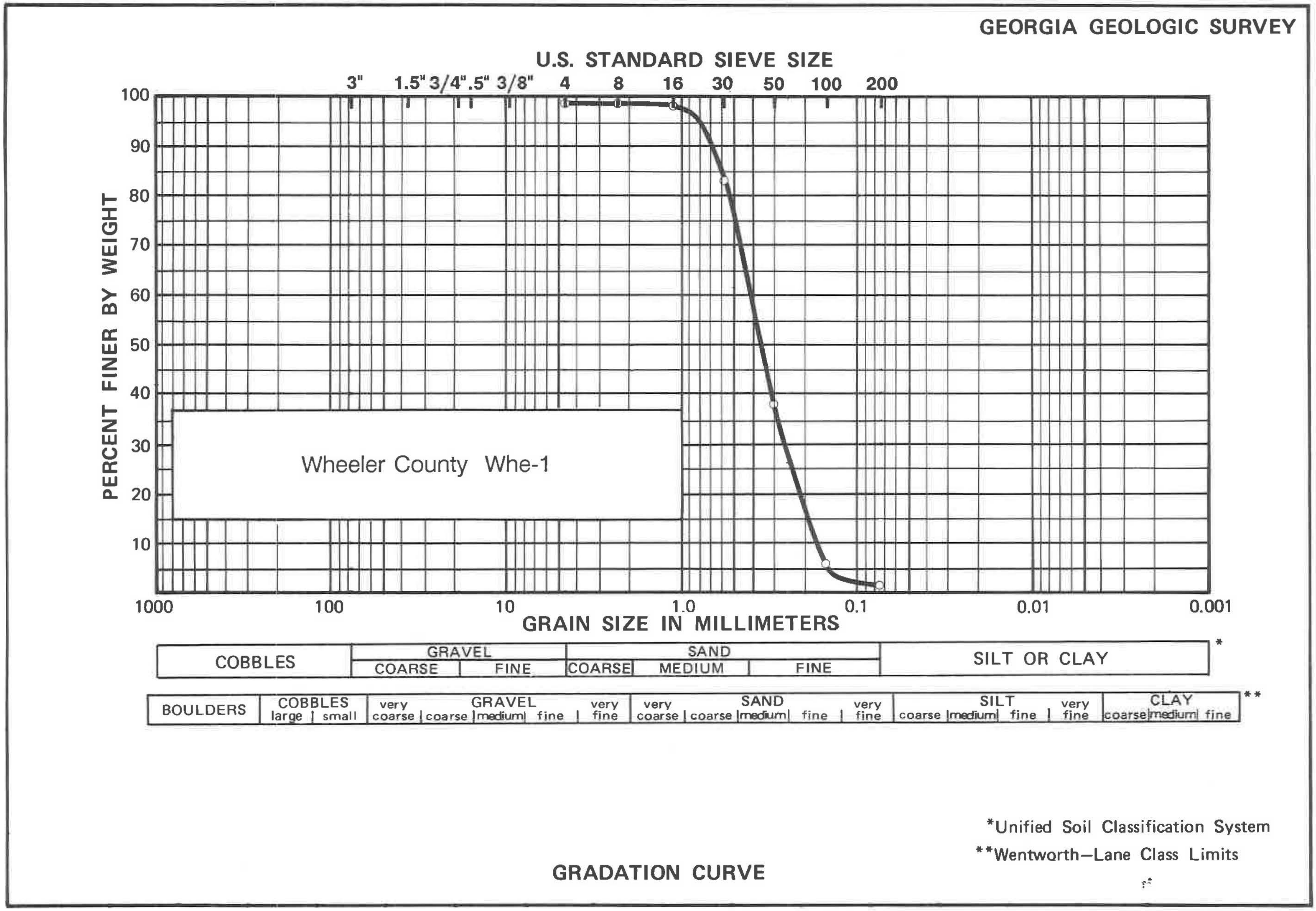


Figure 167. Size distribution curve of Sample Whe-1.

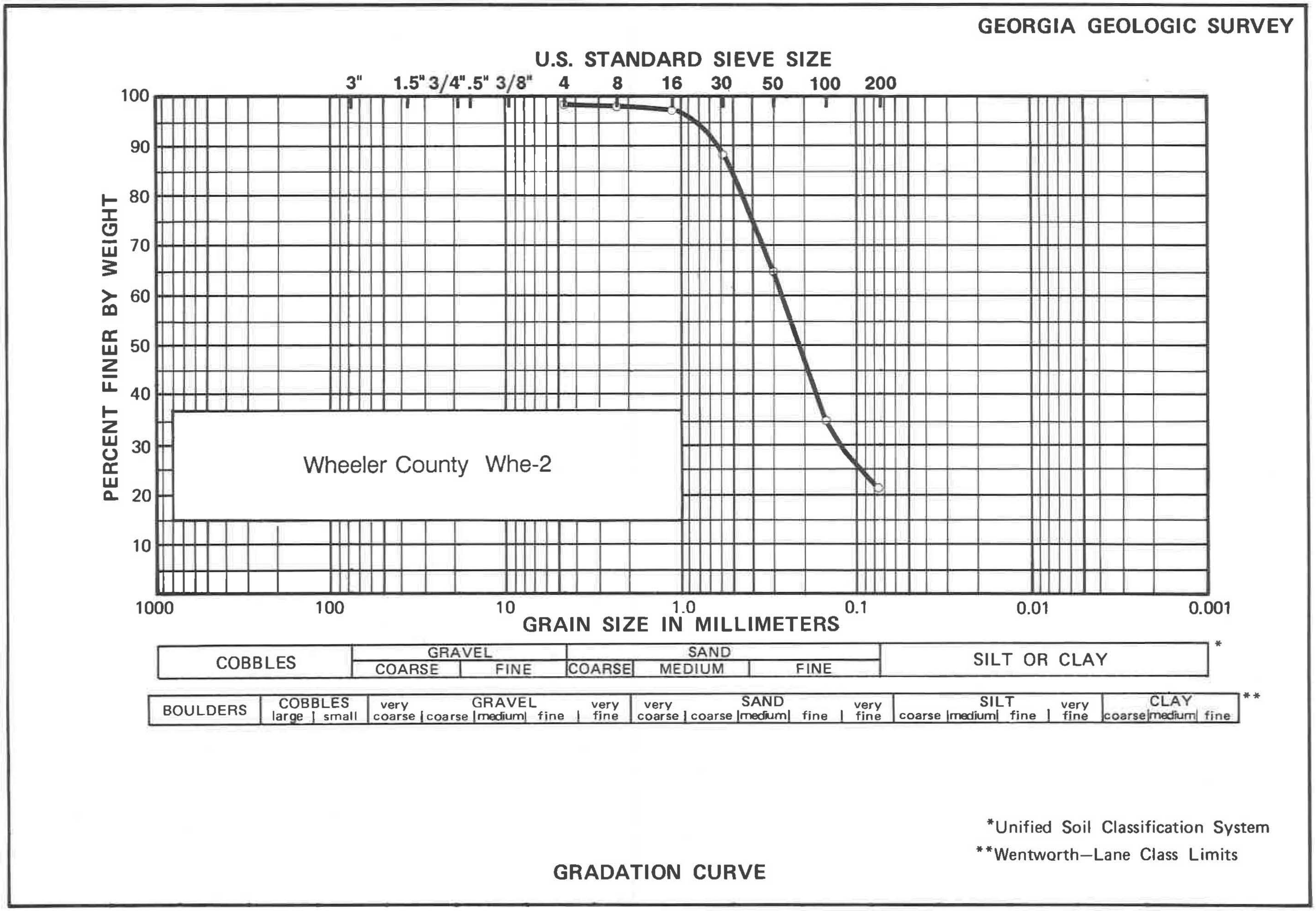


Figure 168. Size distribution curve of Sample Whe-2.

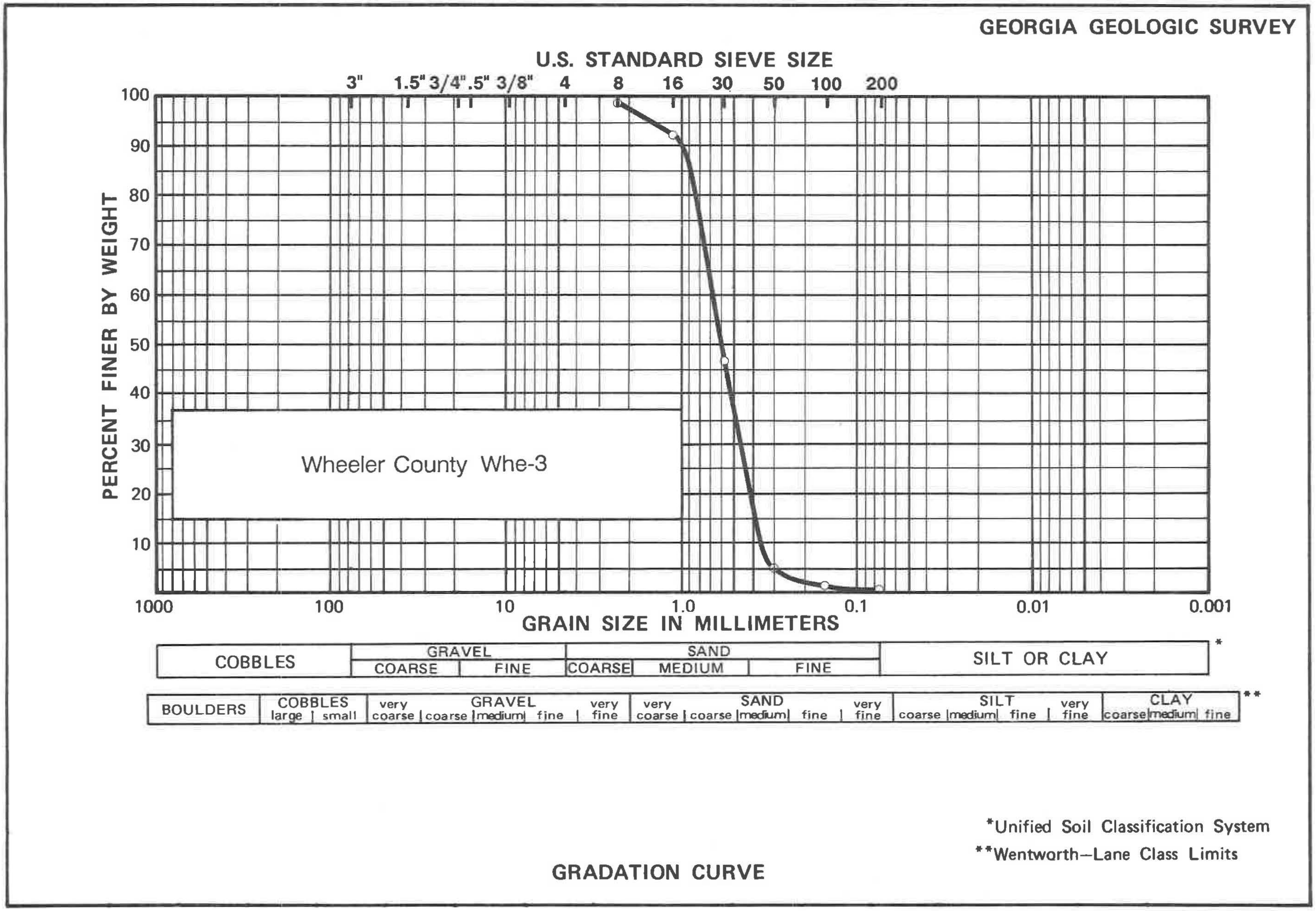


Figure 169. Size distribution curve of Sample Whe-3.

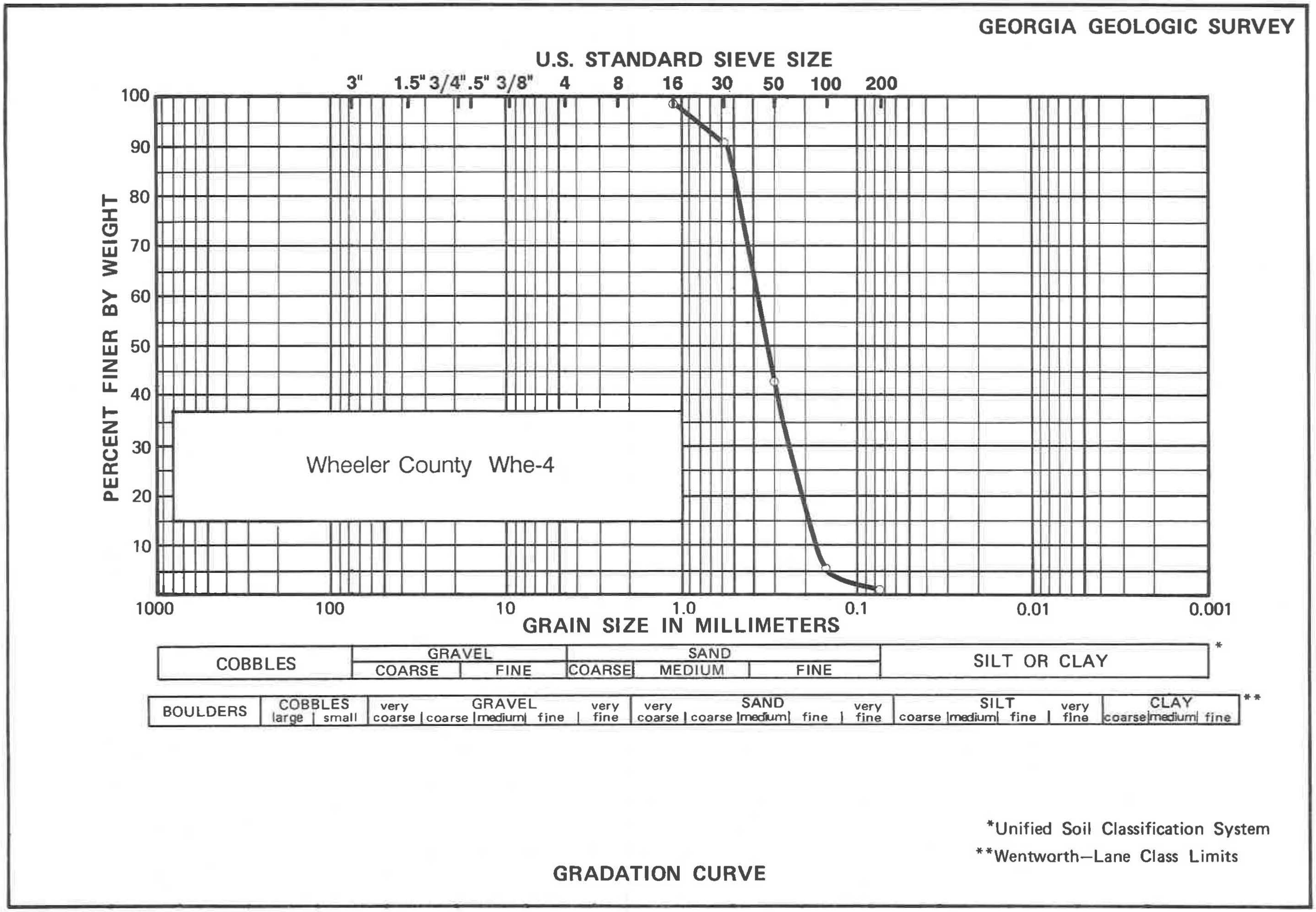


Figure 170. Size distribution curve of Sample Whe-4.

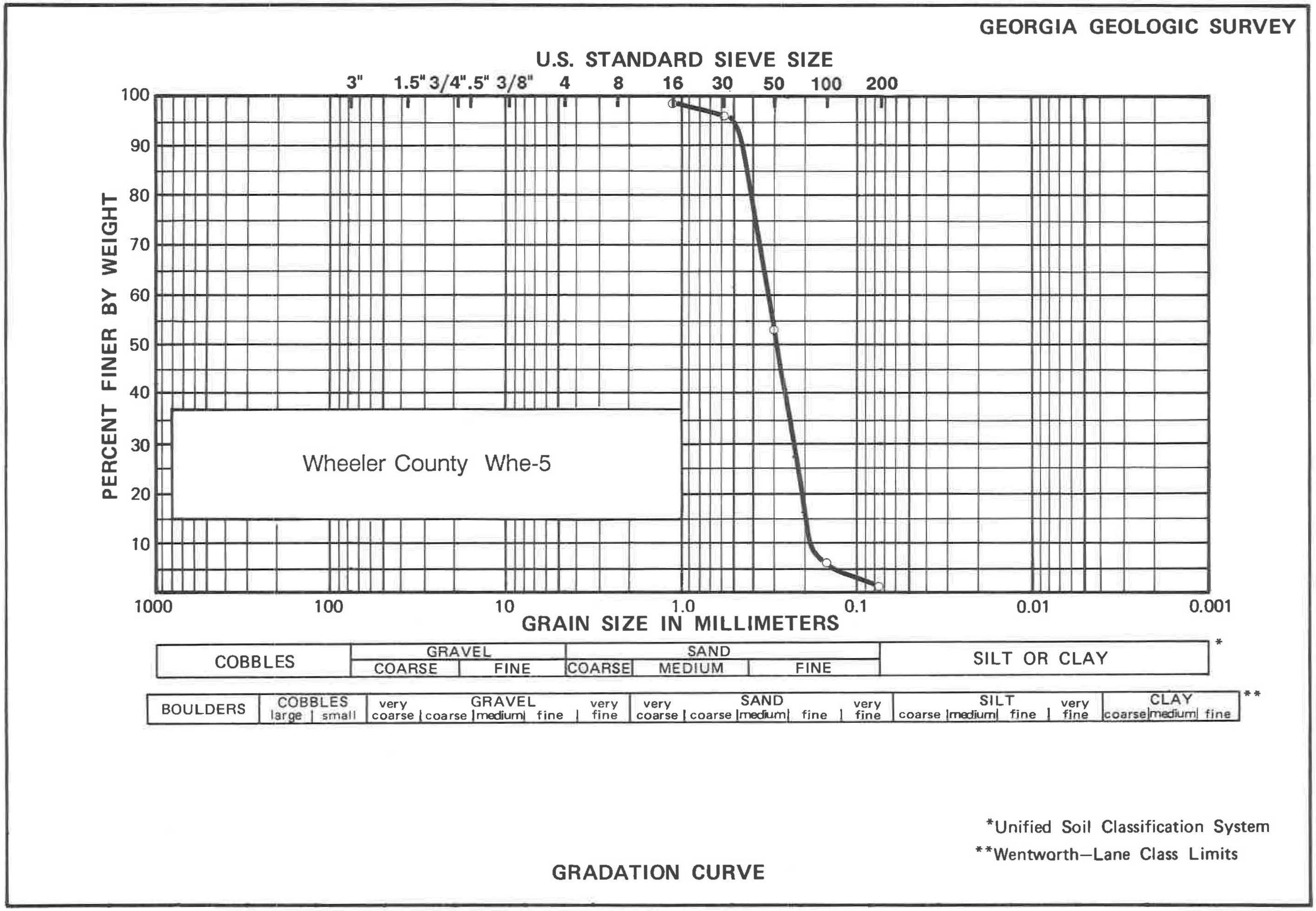


Figure 171. Size distribution curve of Sample Whe-5.

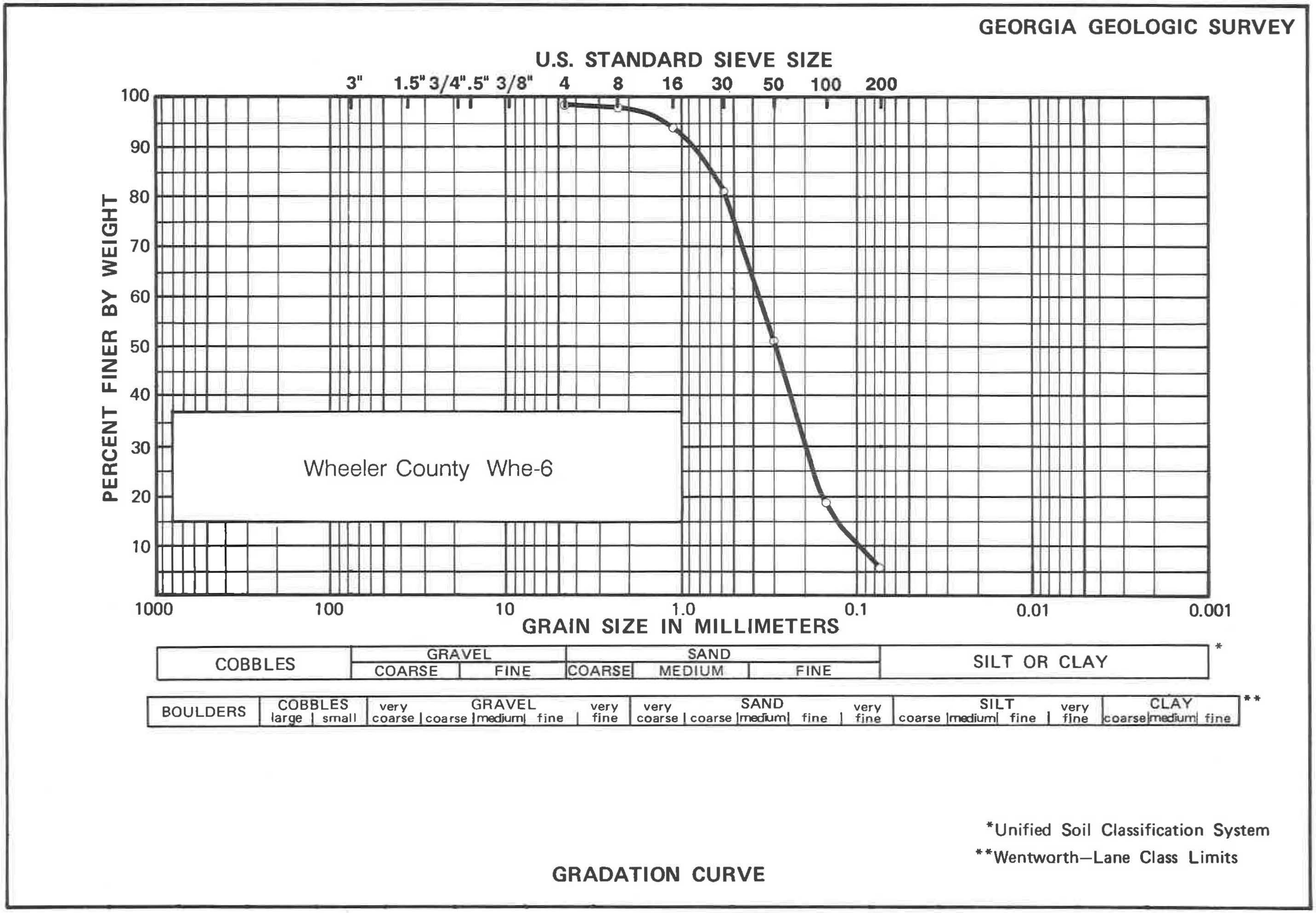


Figure 172. Size distribution curve of Sample Whe-6.

mately 30 acres, that could produce 500,000 tons of material. Whe-6 represents a 20-foot deep auger sample, of a site of approximately 15 acres, that could produce 500,000 tons of material. Samples Whe-4 and Whe-5 are from an area mentioned by Teas (1921, p. 269; Fig.166, Ts-46), that corresponds to preferred soil types. Whe-4 is a 10-foot auger sample, from a 10-acre deposit, that could produce 200,000 tons of material. Whe-5 is a 20-foot auger sample, of a 20-acre deposit from the vicinity of a sand pit (Fig.166, A-191), that could produce 400,000 tons of material. Sample Whe-3 is from a small sand bar along the Oconee River and could produce 4,000 tons of material. These samples marginally failed ASTM Standard C-33 because they are too well-sorted; however, because they contain little fine-grained material, they could be upgraded.

Mining Activity

There is one active producer in Wheeler County. Holland Asphalt Company operates 10 acres of a 20 acre tract (Fig.166, A-191). The operation is an open pit; they mine with a front-end loader and produce less than 10,000 tons annually for the exclusive use of Holland Asphalt. J.L. Clegg (deceased) formerly operated a sand pit (Fig.166, I-126) for which no information is available.

Summary Evaluation

Several of the sites sampled contain coarse-grained material and could be upgraded to provide aggregate. There is some aggregate mining taking place at the present time. The construction material potential of Wheeler County is considered to be moderate.

Wilcox County

Geology and Physiography

The surficial sediments of Wilcox County are derived from the Altamaha Formation, deposits of Oligocene age, and Quaternary alluvium. Wilcox County lies within the Vidalia Upland, Tifton Upland, and Fall Line Hills Districts of the Coastal Plain Province.

Previous Study

Teas (1921, p. 273) reported that only sparsely distributed deposits of sand occur in Wilcox County, with the exception of the sand bars of the Ocmulgee River.

Present Study

The soil association targeted in Wilcox County was #39 (see p. 7), and is present primarily along

Table 33. Wheeler County Sample Data

Sample designation	Depth[1]	Sample type	Minimum[2] thickness of the deposit	Priority of[3] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[3]
Whe-1	10'	trench	10'	2	no[4]	2
Whe-2	12'	auger	12'	2	no	0
Whe-3	2'	auger[5]	2'	1	no[4]	2
Whe-4	10'	trench	10'	3	no[4]	2
Whe-5	20'	trench	20'	3	no[4]	2
Whe-6	20'	auger	16'	2	no[4]	2

[1]For trench samples, this figure is the vertical length of the trench.
[2]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[3]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[4]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.
[5]River sample, taken with a hand auger.

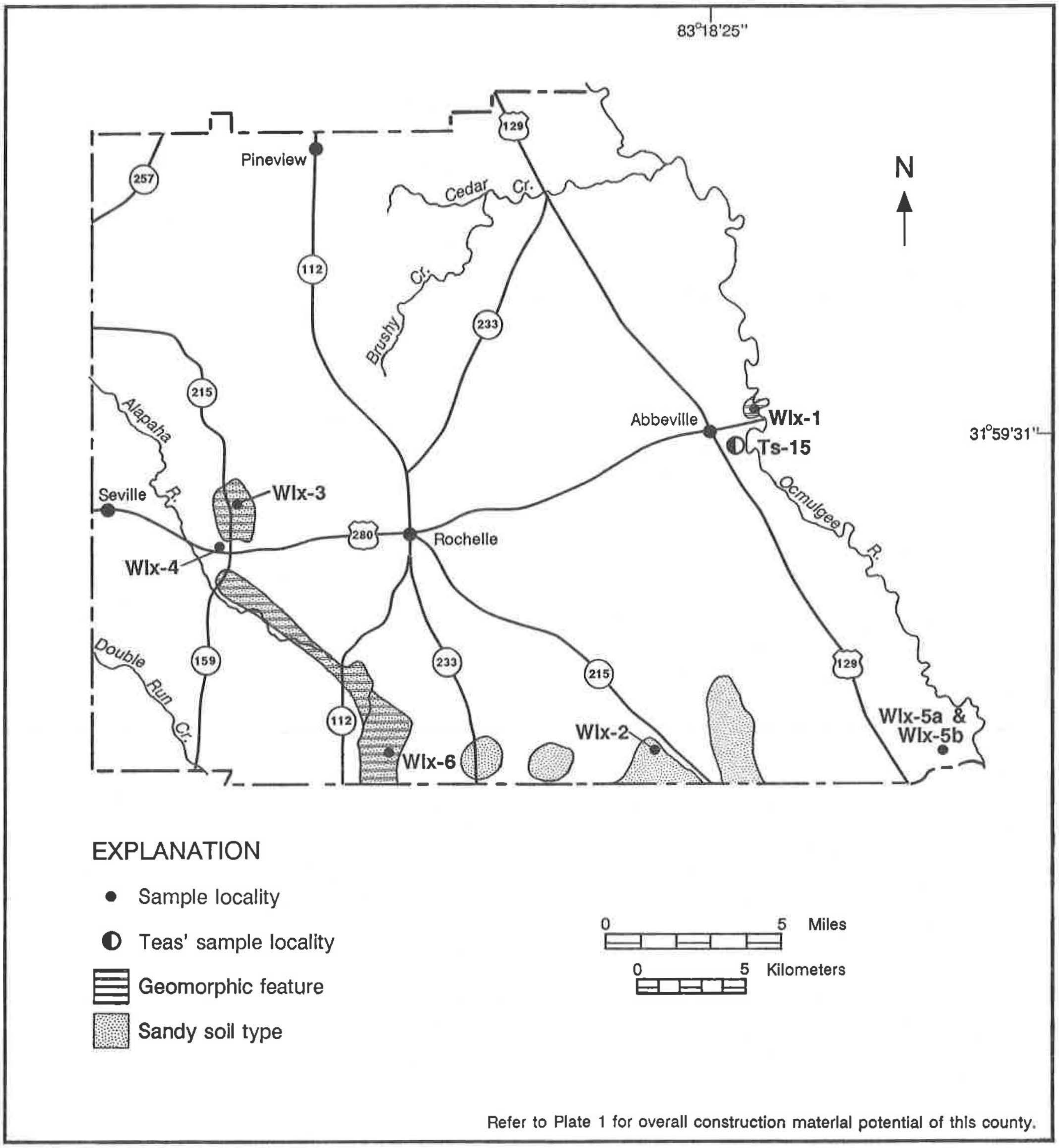


Figure 173. Wilcox County map.

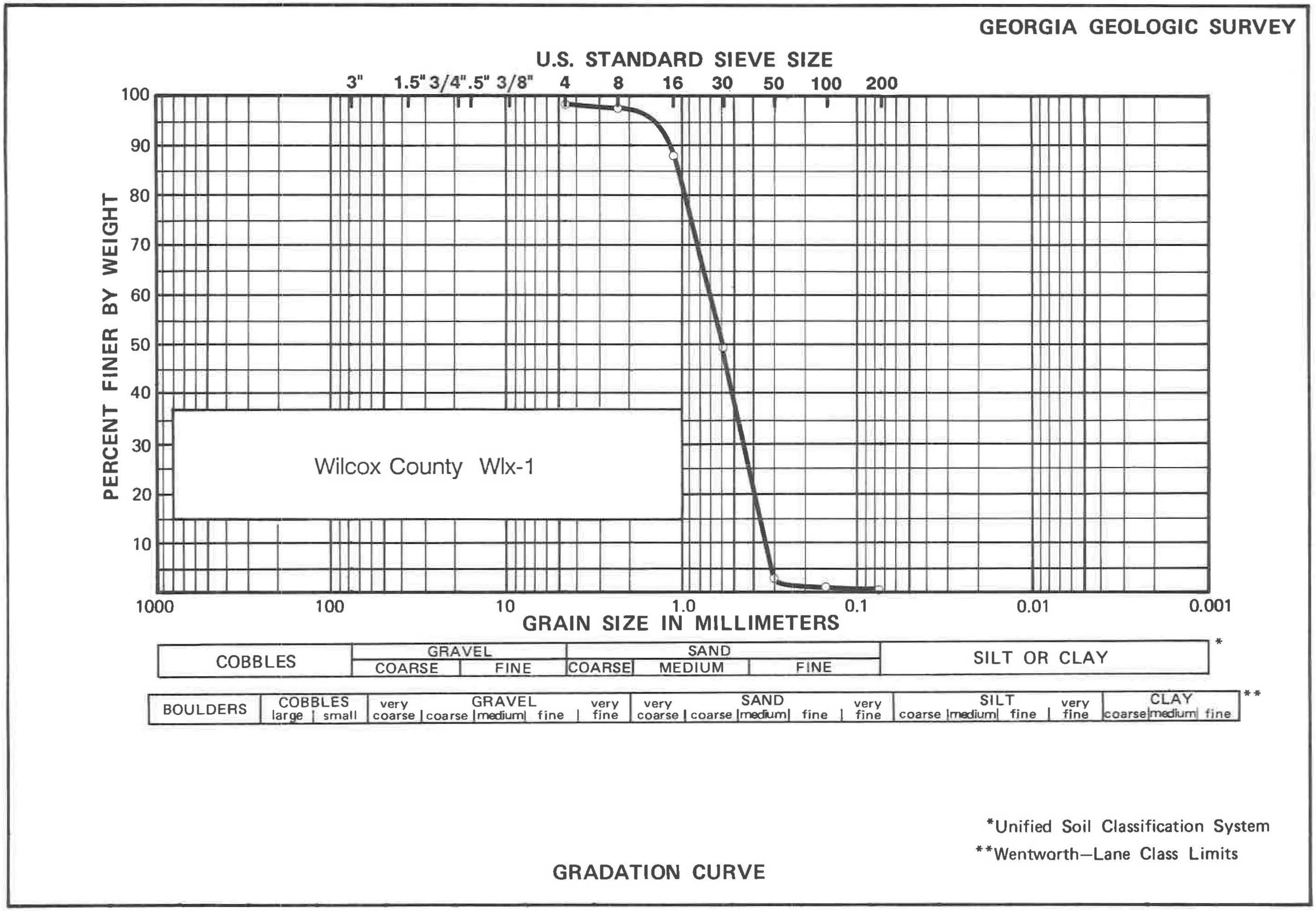


Figure 174. Size distribution curve of Sample Wlx-1.

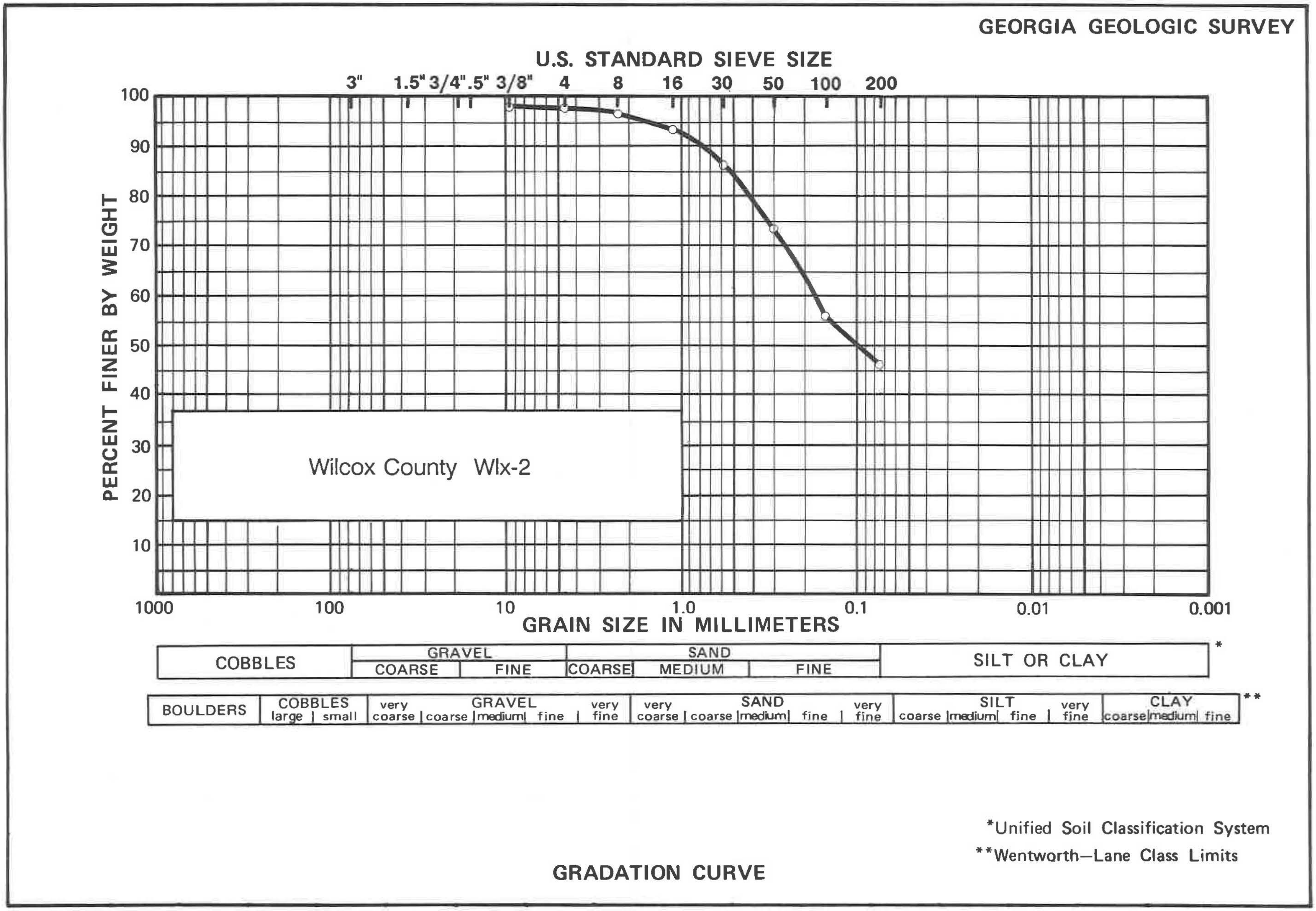


Figure 175. Size distribution curve of Sample Wlx-2.

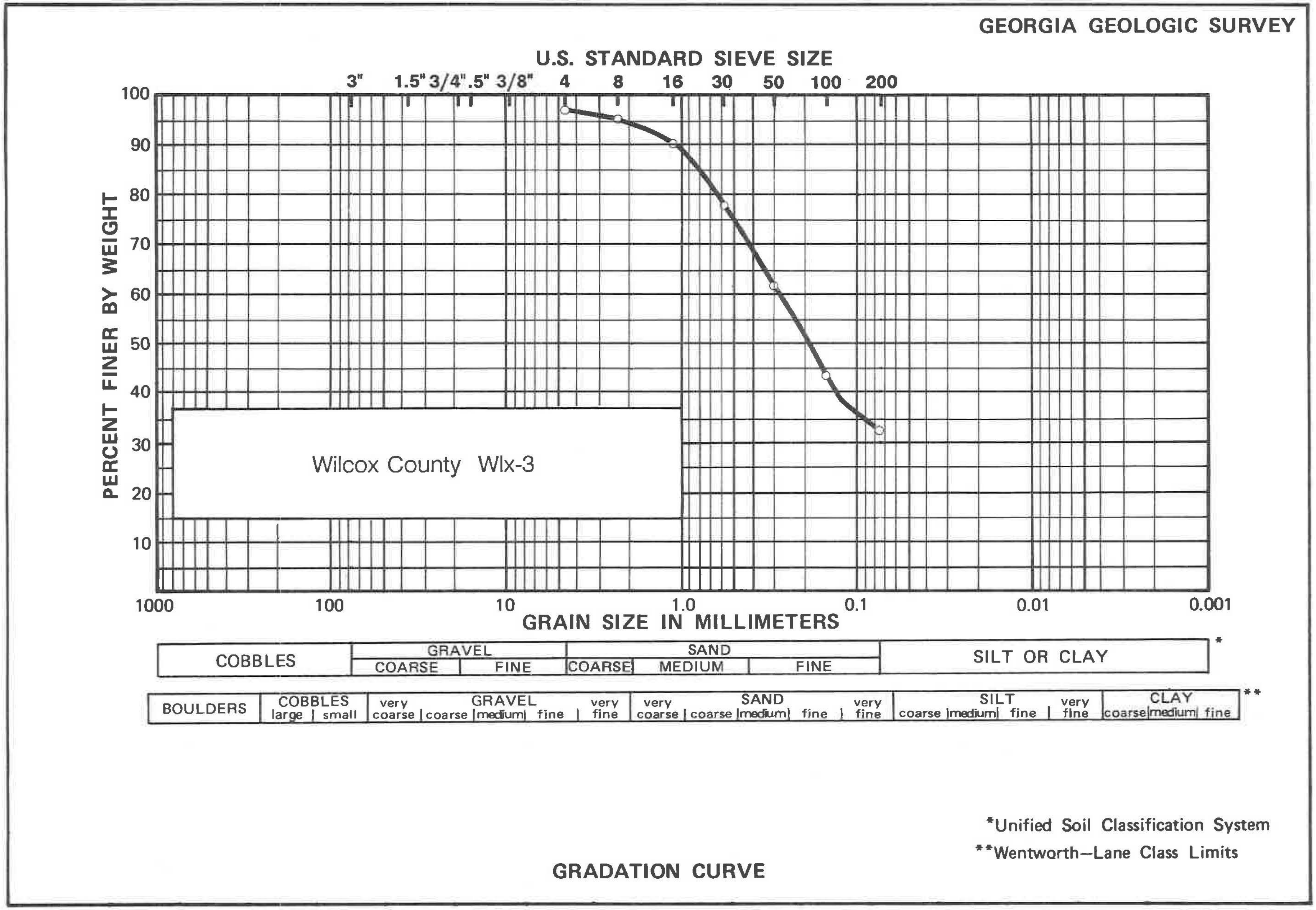


Figure 176. Size distribution curve of Sample Wlx-3.

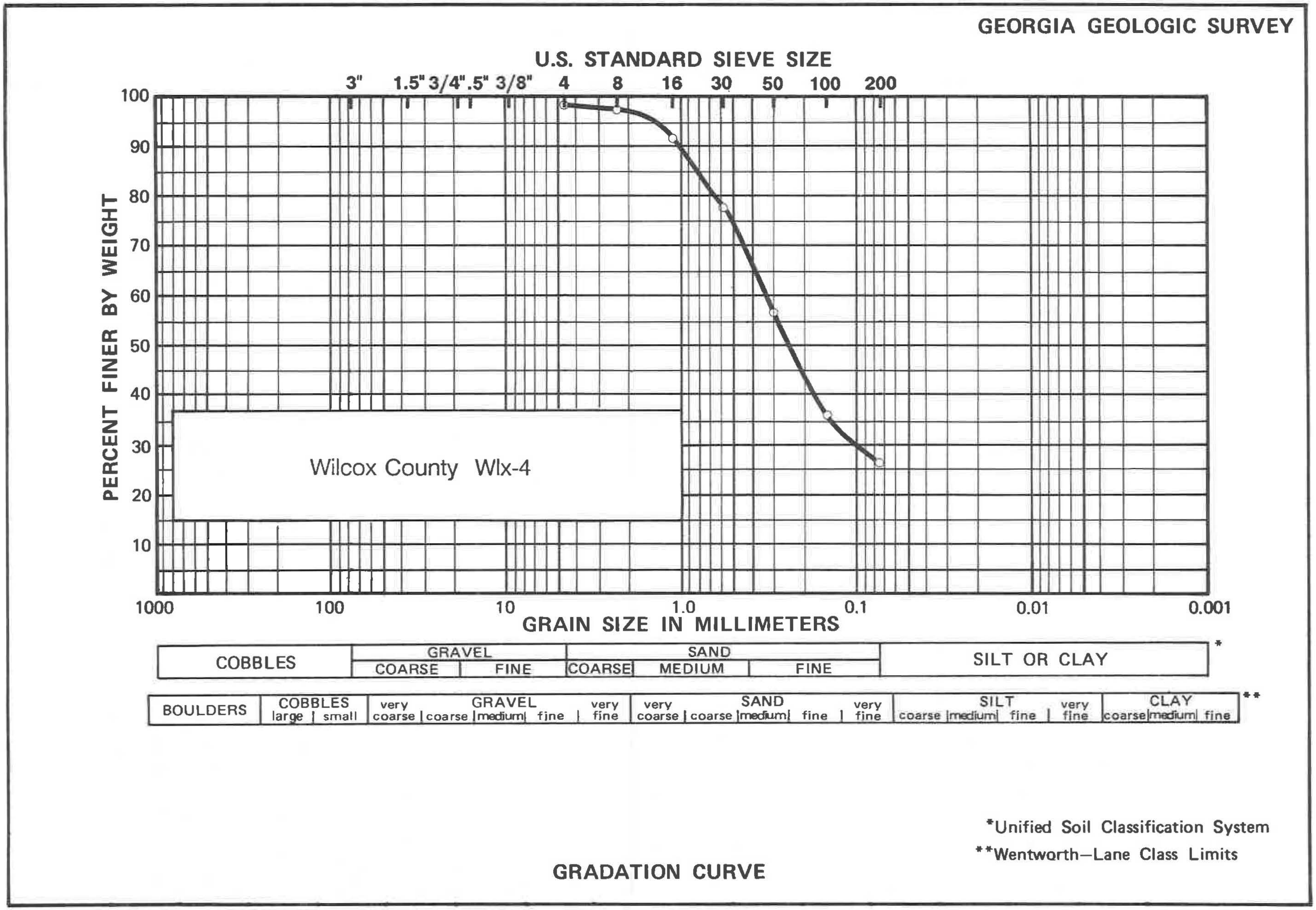


Figure 177. Size distribution curve of Sample Wlx-4.

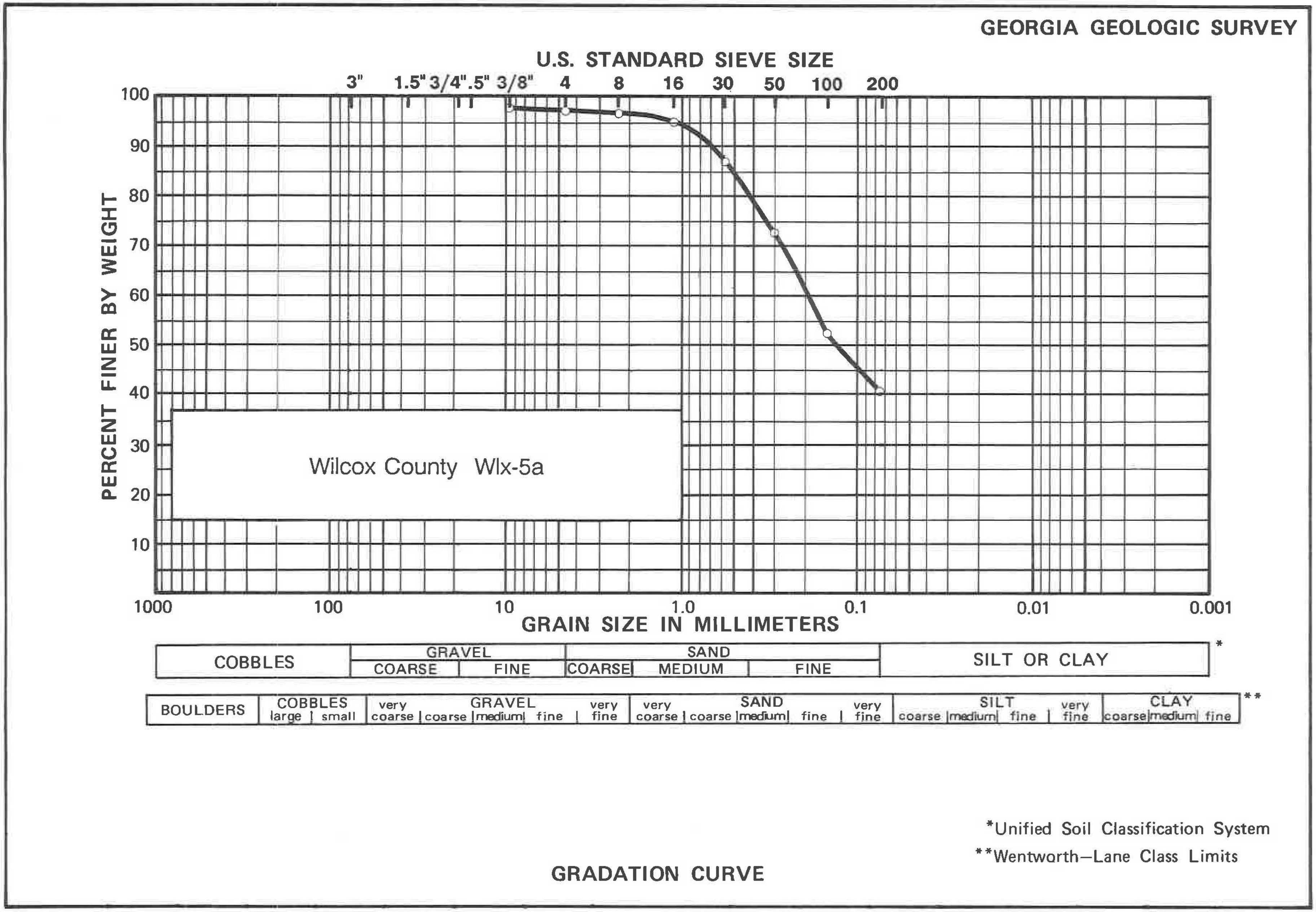


Figure 178. Size distribution curve of Sample Wlx-5a.

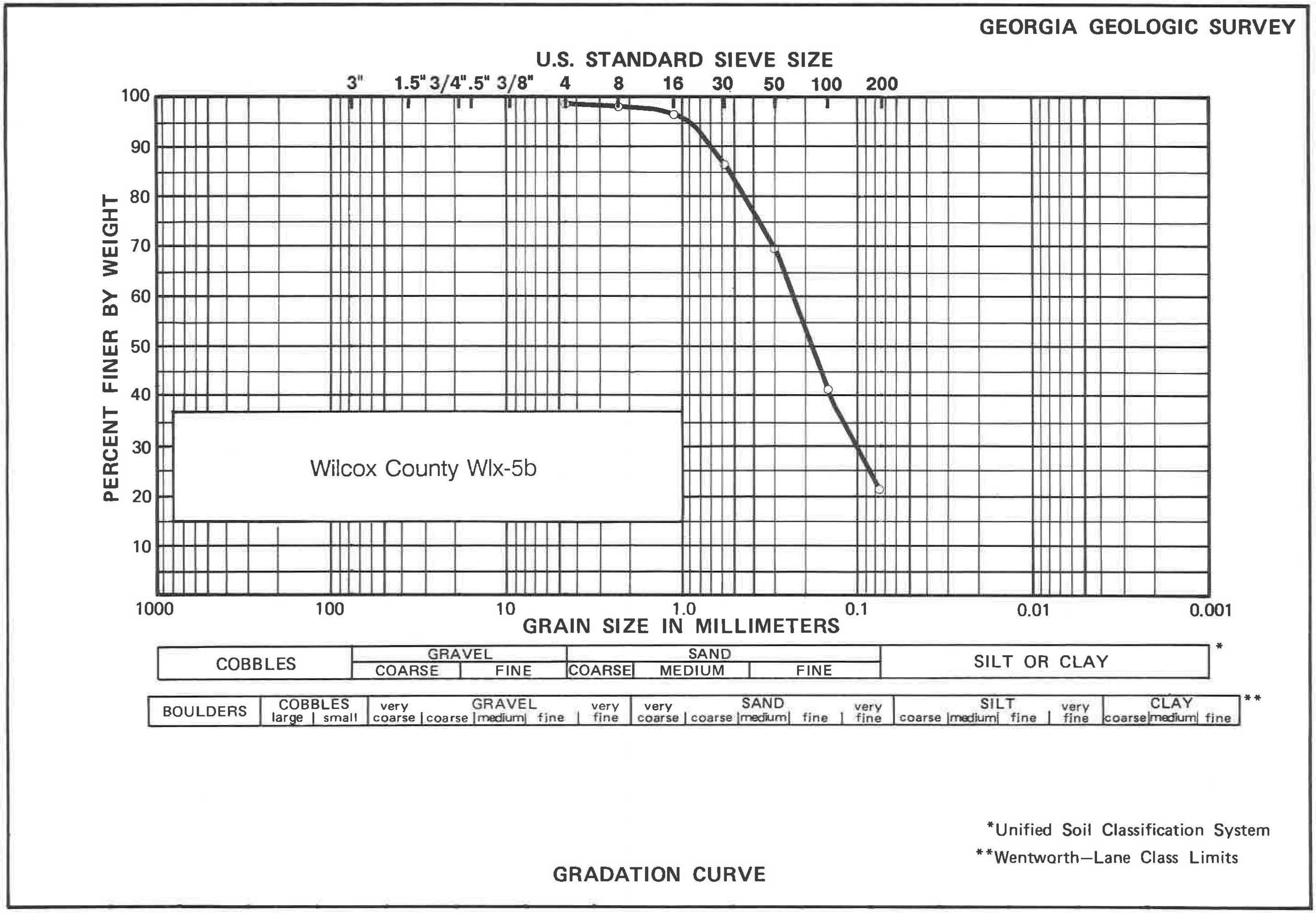


Figure 179. Size distribution curve of Sample Wlx-5b.

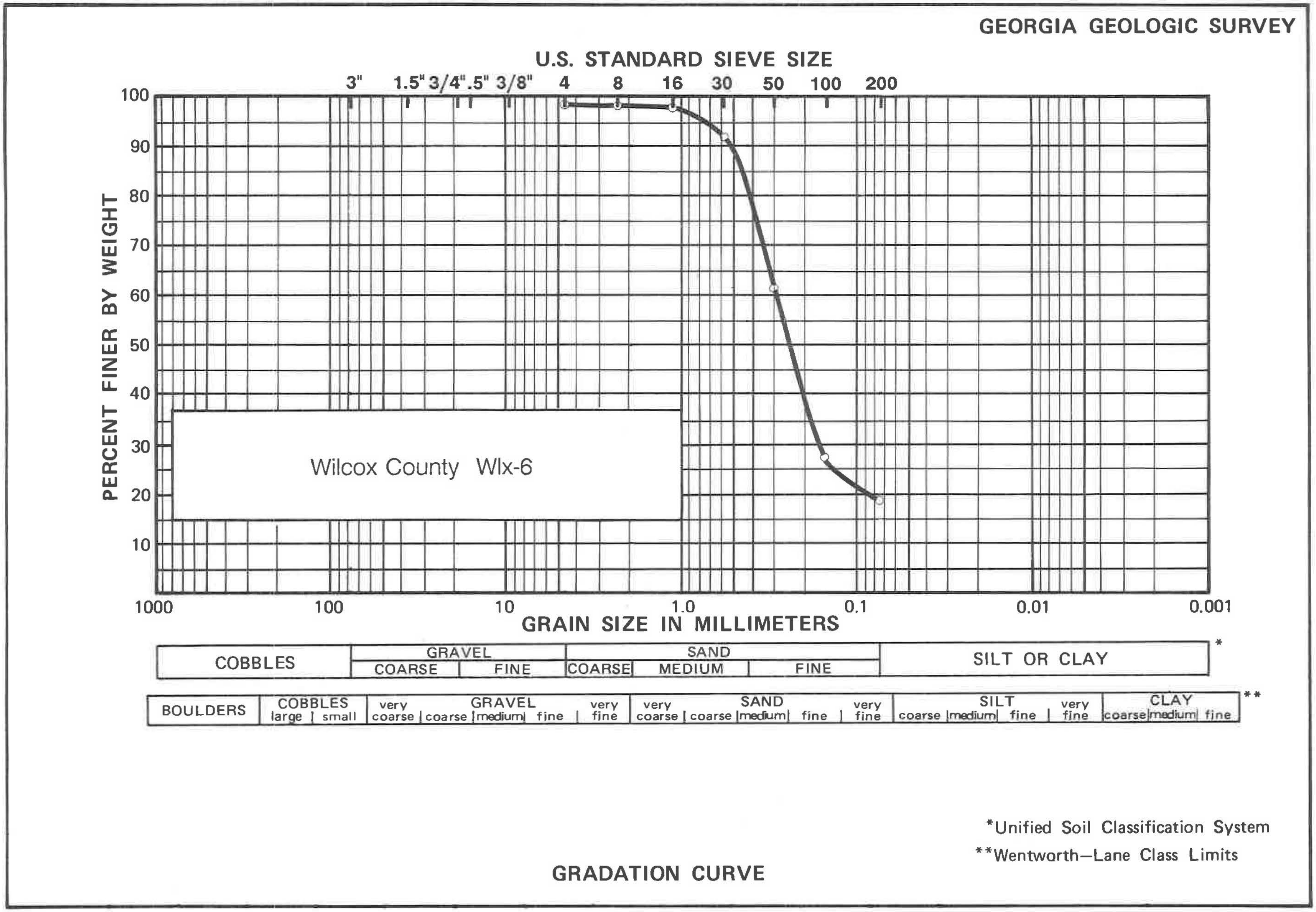


Figure 180. Size distribution curve of Sample Wlx-6.

the Alapaha River. Geomorphic features targeted were the sand bars of the Ocmulgee River, and sand hills along the Alapaha River. Seven samples representing six sites were analyzed for aggregate potential in Wilcox County (Fig.173, Table 34).

Evaluation

Sample Wlx-1 was taken from a sand bar along the Ocmulgee River. Sample Wlx-2 was taken from a preferred soil type. Samples Wlx-3, Wlx-4, Wlx-5a and Wlx-5b were taken from an area of sand hills. Sample Wlx-6 was taken from an area of sand hills, which coincide with the preferred soil type. None of these samples met ASTM Standard C-33; however, the material represented by sample Wlx-1 contains very little fine-grained material and could be upgraded for use as construction aggregate. The remaining samples are too fine-grained for use as construction aggregate.

Mining Activity

There are no active or recently inactive mining operations in Wilcox County.

Summary Evaluation

None of the material sampled from the targeted areas met ASTM Standard C-33, and there is no evidence of mining having gone on in the past in Wilcox County. Therefore, the construction material potential for Wilcox County is considered to be low.

Wilkinson County

Geology and Physiography

The surficial sediments of Wilkinson County are derived from the Barnwell Group, the Oconee Group, Quaternary alluvium, and the Altamaha Formation. Wilkinson County lies within the Fall Line Hills District of the Coastal Plain Province.

Previous Study

Teas (1921, p. 274) reported medium- to coarse-grained sand suitable for concrete in the bed of Big Sandy Creek (Fig.181, Ts-48).

Present Study

The soil association used in targeting sites for sampling in Wilkinson County was Fuquay, and is present as small bodies throughout the county. The geomorphic feature noted is a possible terrace deposit of the Oconee River. Five areas were sampled and analyzed for construction material potential in Wilkinson County (Fig.181, Table 35).

Table 34. Wilcox County Sample Data

Sample designation	Depth	Sample type	Minimum[1] thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Wlx-1	3'	auger[4]	3'	1	no[3]	2
Wlx-2	8'	auger	8'	1	no	0
Wlx-3	8'	auger	8'	1	no	0
Wlx-4	9.5'	auger	9.5'	1	no	1
Wlx-5a	8'	auger	9'	1	no	0
Wlx-5b	1.5'	auger	9'	1	no	0
Wlx-6	16'	auger	16'	3	no	0

[1]Thicknesses of the deposits greater than the depths of the auger holes or greater than the height of the trench samples are estimated from field observations. Thicknesses that are less than the depths of the auger holes show that material determined to be unsuitable was encountered while sampling.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).
[3]Marginally failed ASTM Standard C-33 may be upgraded to meet specifications.
[4]River sample, taken with a hand auger.

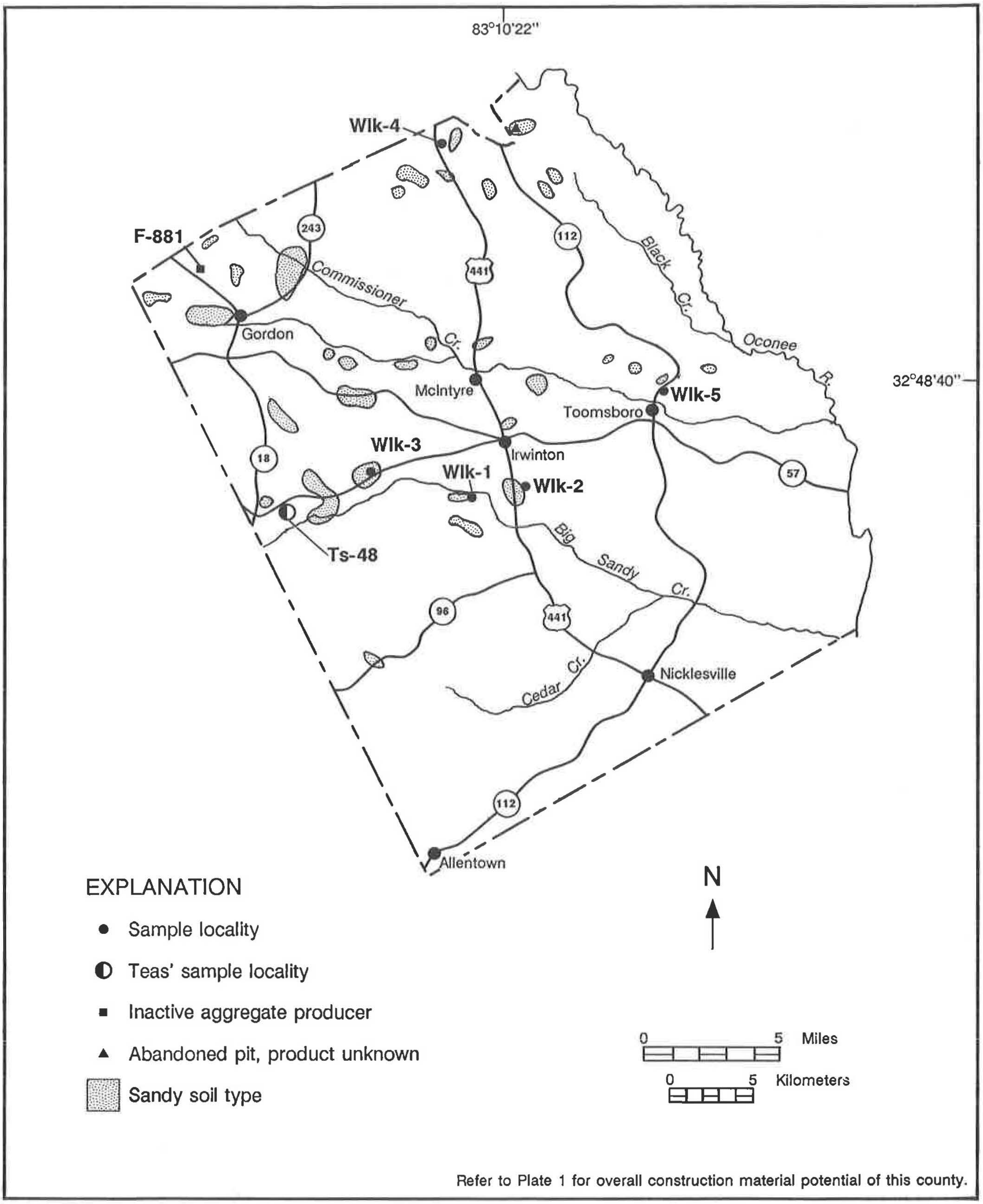


Figure 181. Wilkinson County map.

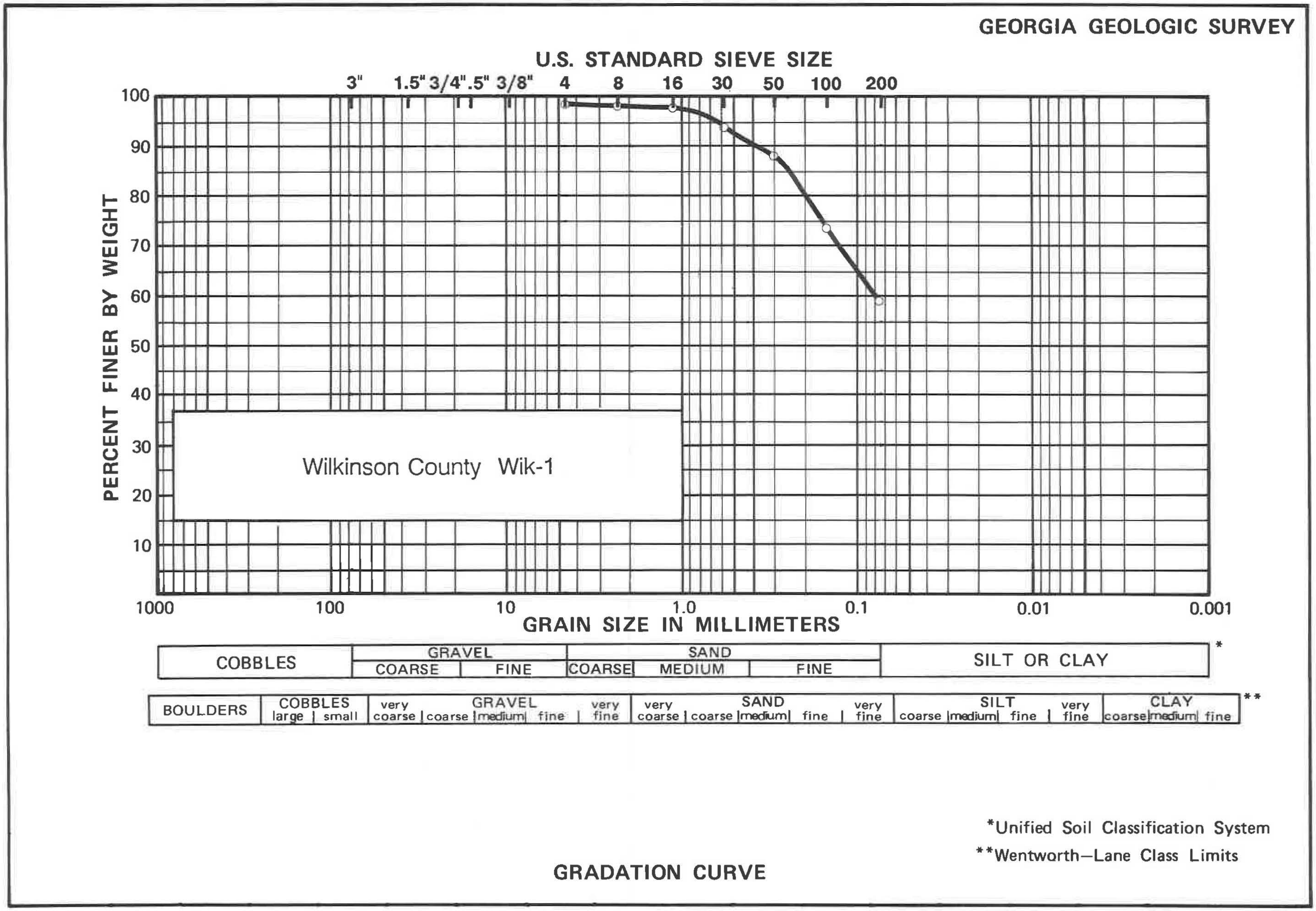


Figure 182. Size distribution curve of Sample Wik-1.

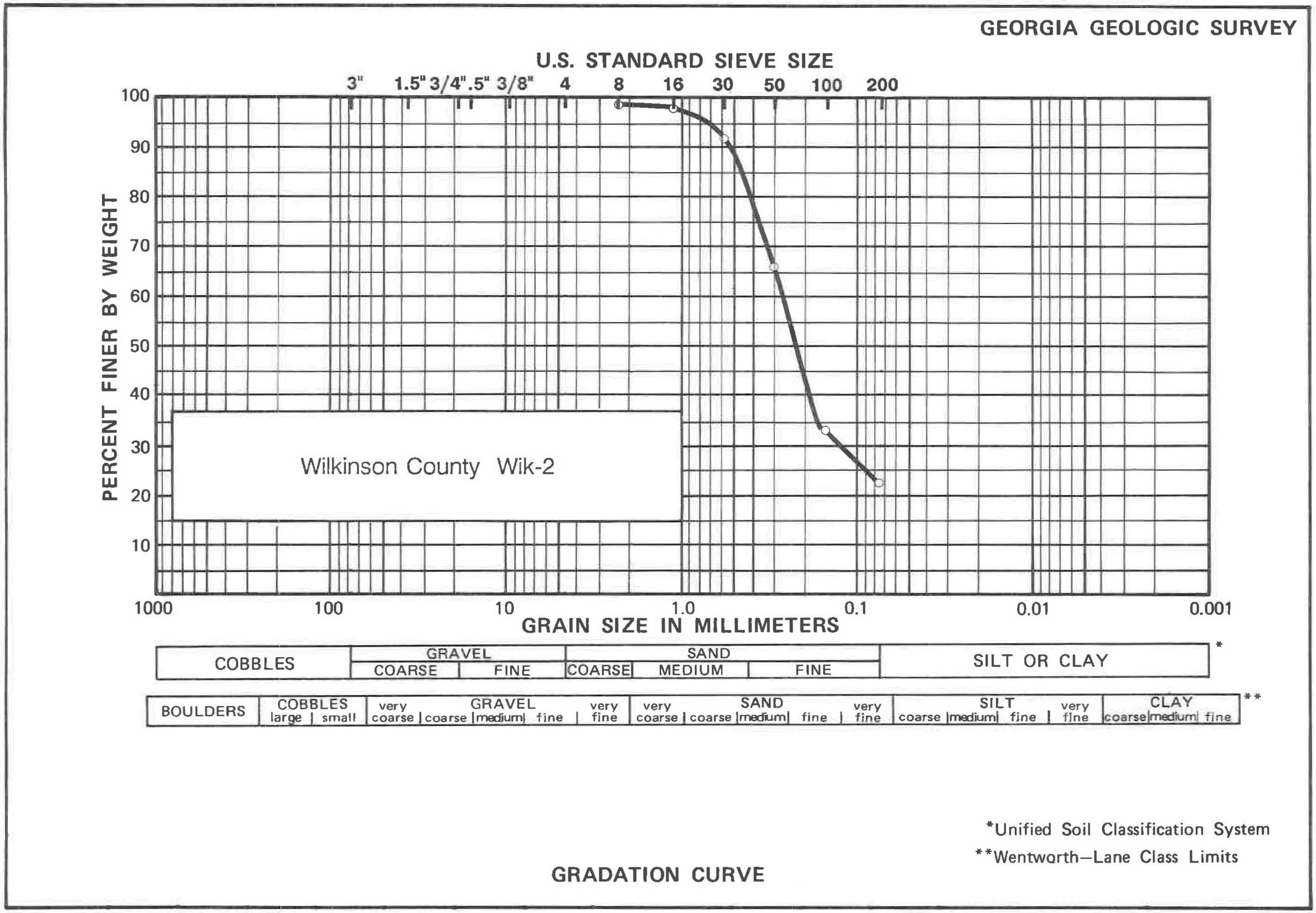


Figure 183. Size distribution curve of Sample Wik-2.

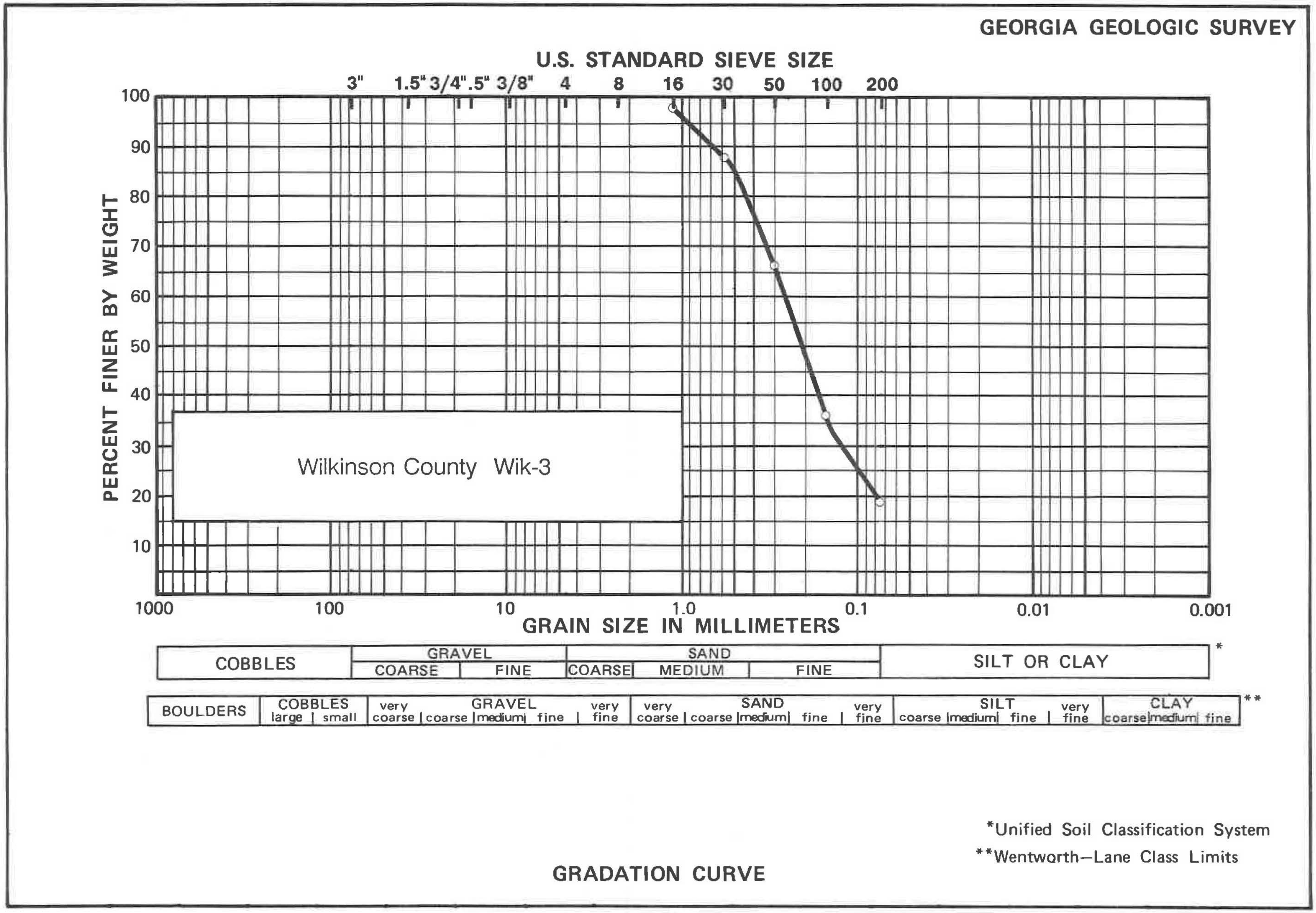


Figure 184. Size distribution curve of Sample Wik-3.

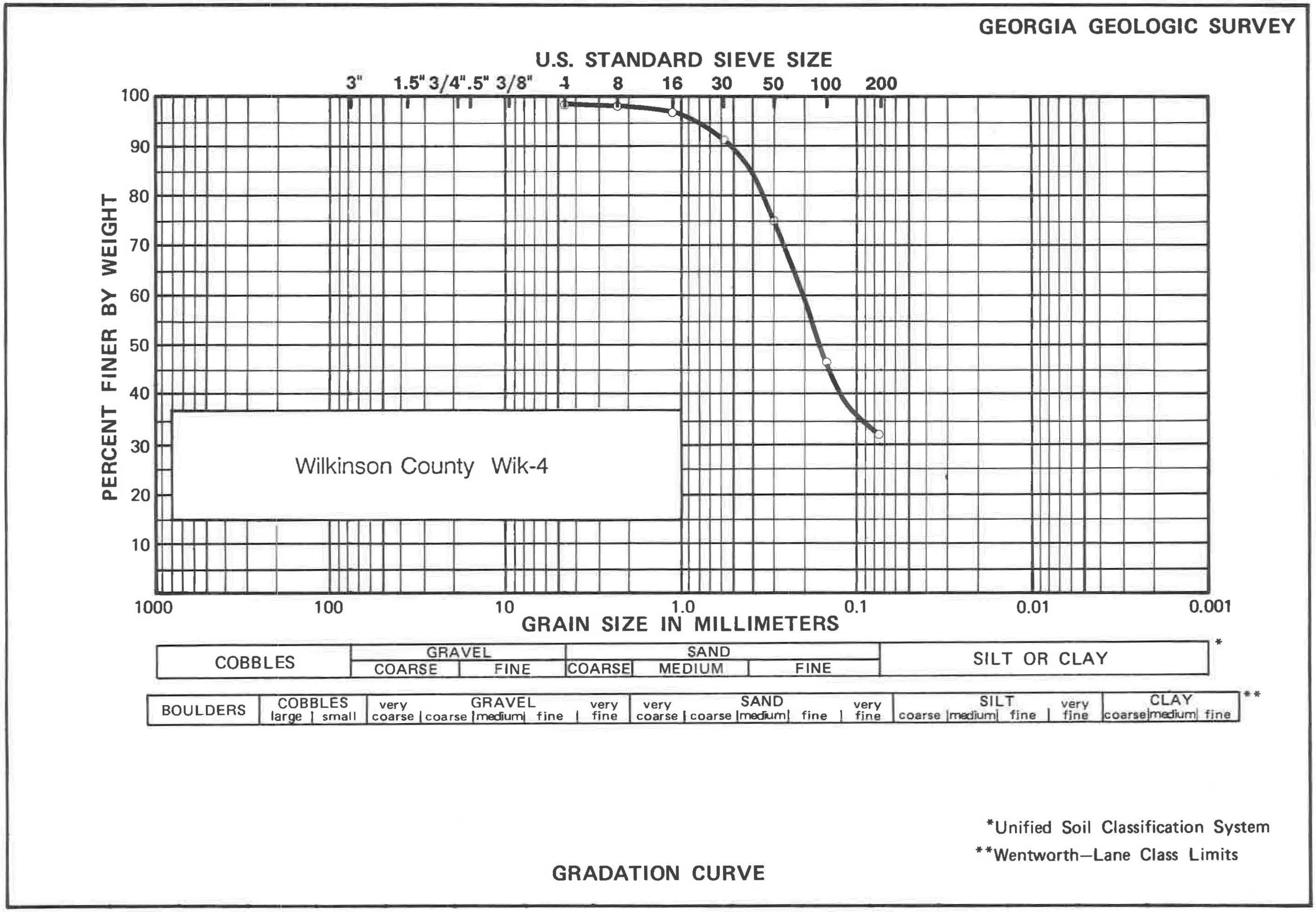


Figure 185. Size distribution curve of Sample Wik-4.

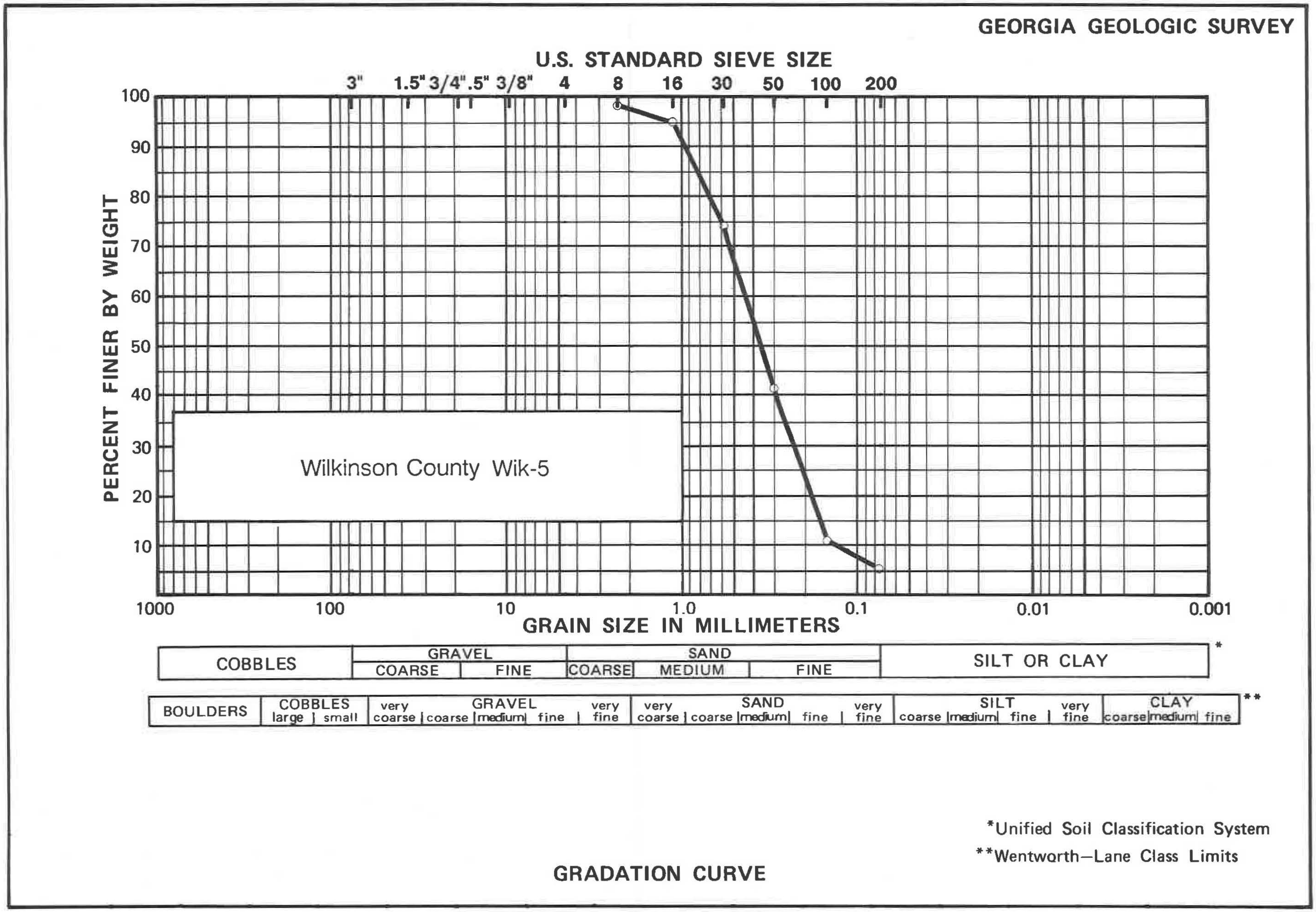


Figure 186. Size distribution curve of Sample Wik-5.

Table 35. Wilkinson County Sample Data

Sample designation	Depth[1]	Sample type	Minimum thickness of the deposit	Priority of[2] body sampled	Natural Material passing ASTM-C-33	Friddell Rating[2]
Wik-1	5'	auger	5'	1	no	0
Wik-2	11'	auger	11'	1	no	0
Wik-3	11'	auger	11'	1	no	0
Wik-4	5'	auger	5'	1	no	2
Wik-5	24'	trench	24'	2	no	2

[1]For trench samples, this figure is the vertical length of the trench.
[2]Increasing numerical values represent higher priority (potential for aggregate deposits) or rating (potential for uses of sands other than construction aggregate).

Evaluation

Samples Wik-1, Wik-2, Wik-3, and Wik-4 were taken from areas of the targeted soil type. None of these samples met ASTM Standard C-33 because they are all too fine-grained. Sample Wik-5 was taken from a 20 acre tract that lies within the preferred soil type and coincides with a possible terrace deposit of the Oconee River. This material also failed ASTM Standard C-33 because it is too well-sorted.

Mining Activity

The city of Gordon operates a two acre pit (Fig.181, F-881) from which it produces an average of 10,000 to 50,000 tons of fill material annually. No other information was available for publication.

Summary Evaluation

The site represented by Wik-5 could provide construction aggregate if upgraded. If the twenty acre tract were mined to a depth of 24 feet, the site could yield up to 1,000,000 tons, before upgrading. The construction material potential for Wilkinson County is considered to be low to moderate.

SUMMARY EVALUATION

Baldwin, Echols, Hancock, and Pulaski Counties were found to have moderate to high potential for construction aggregate in the study area.

In Baldwin County, sample Bal-3 (Fig.9) represents a possible terrace deposit of the Oconee River. The coarse-grained material covers a 5 acre site to a depth of approximately 9 feet. If washing were necessary, the Oconee River is within 2 miles of this site; Milledgeville is only a few miles away; and a secondary road that could provide transportation is within a few hundred feet of the site. This particular site could provide 98,000 tons of construction aggregate. However, the site is near the Piedmont where crushed stone is readily available for use as construction aggregate. Therefore, the Baldwin County site is probably not attractive as an aggregate source.

Pulaski County has two sites that were found to be possible sources for aggregate. The site of sample Pul-2 (Fig.117) is a 50-acre deposit that extends to a depth of 15 feet. It is within 1 mile of both the Ocmulgee River and a major road; thus, providing water and transportation. Sample Pul-5 (Fig.117) is representative of the several sand bars found along the banks of the Ocmulgee River. The one sand bar sampled is approximately 20 acres in extent, and the coarse sand is at least 2 feet thick.

In Hancock County, three of the sampled areas of coarse-grained material marginally failed to meet ASTM Standard C-33 and could possibly be upgraded. These sites could be sources for construction aggregate. The site of sample Han-1 (Fig.62) covers 5 acres, and the deposit extends to a depth of approximately 8 feet. This site could provide as much as 70,000 tons of material. It occurs at the bank of a small creek that could provide water for washing, and the site is on a secondary road that could provide transportation. Sample Han-2 (Fig.62) was from a 5 acre deposit that extends for a depth of approximately 4 feet and could provide as much as 35,000 tons of material. To the west, there is a creek within a mile of this site and to the north, a secondary road. An abandoned sand pit is the site of sample Han-3. This deposit is approximately 10 acres in areal extent, and the material extends to a depth of approximately 8 feet. This site could provide as much as 140,000 tons of aggregate. A creek is within a few hundred feet of this site, but the nearest major road is 5 miles away.

The disadvantages of all these deposits are that they all would require some upgrading, and they are all near the Piedmont where crushed stone is readily available at a reasonable price.

Sample Ech-2b (Fig.56) from Echols County could provide quality construction aggregate, but the removal of 16 feet of overburden probably would prohibit any commercial exploitation of this site. Sample Ech-3 (Fig.56) represents a 12 foot deep, 5 acre deposit of coarse-grained sand that could be upgraded for construction aggregate use. The site is a few thousand feet from a secondary road, which would provide transportation, and within 1000 feet of a creek which could provide water for washing.

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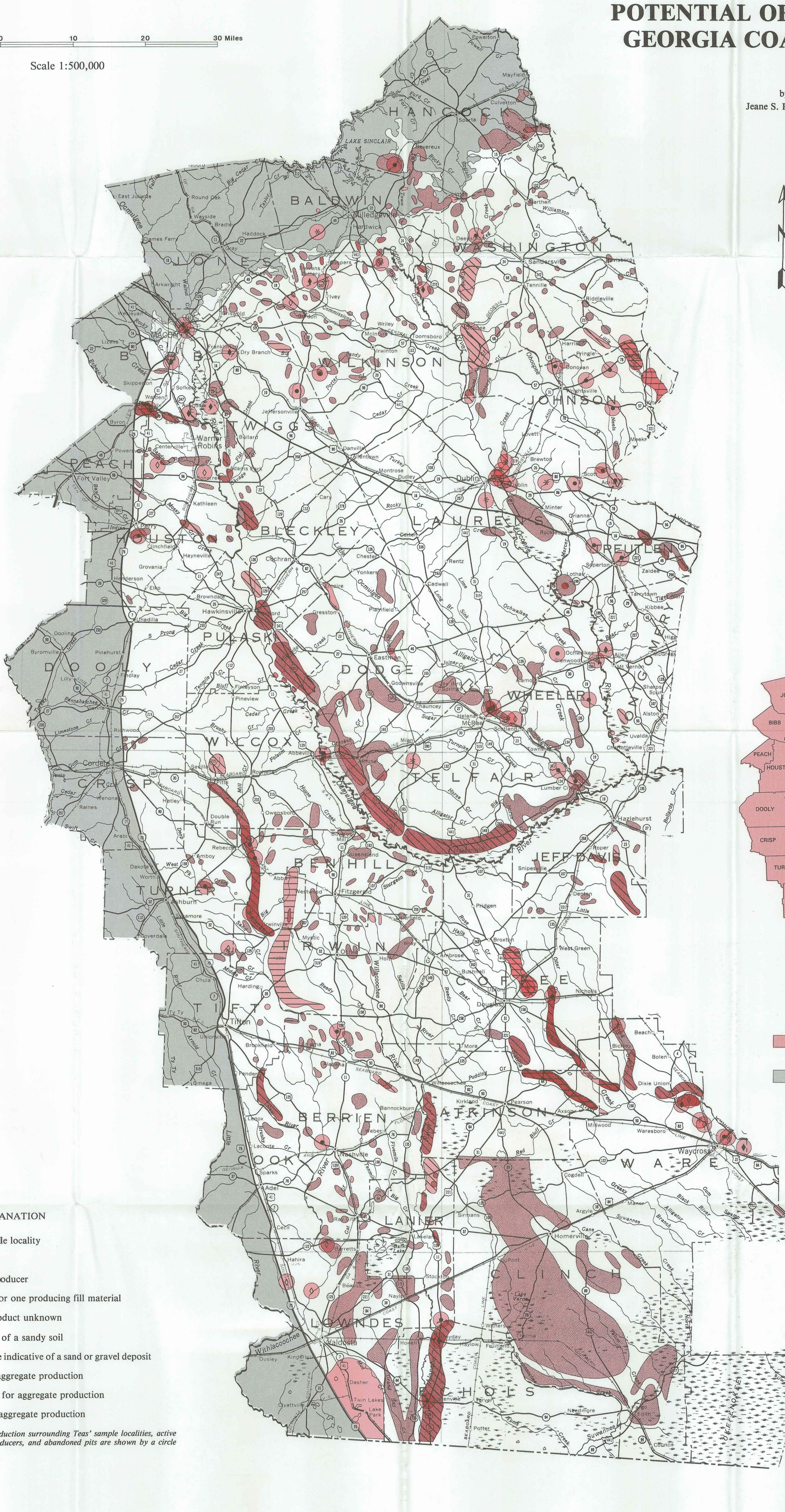
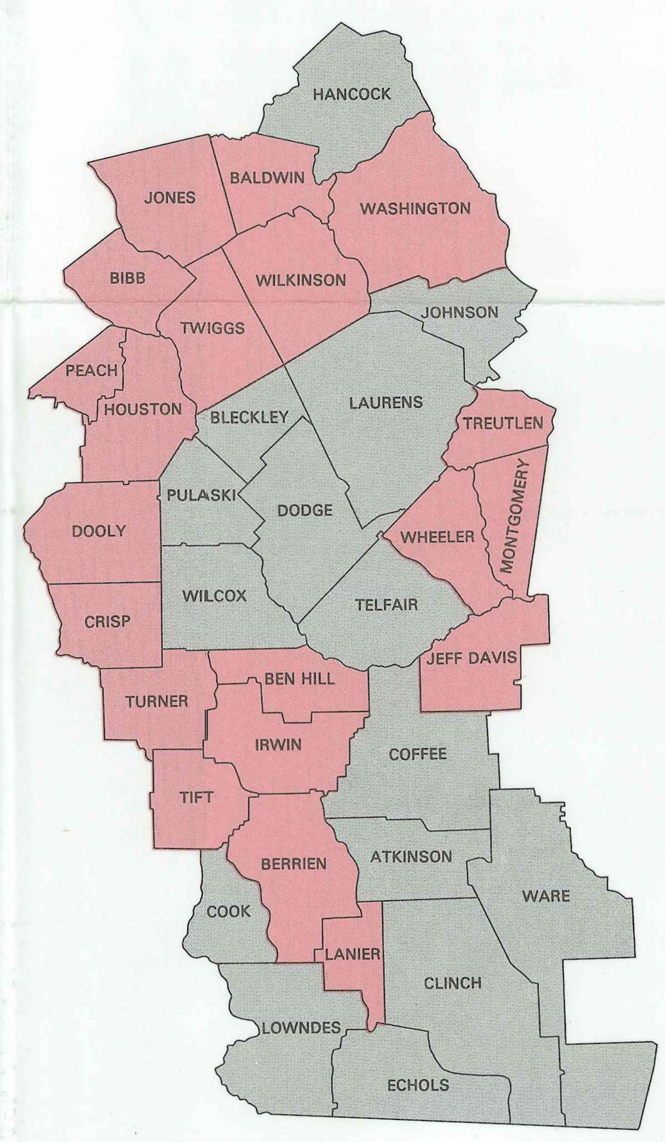
CONSTRUCTION MATERIAL POTENTIAL OF THE MIDDLE GEORGIA COASTAL PLAIN

by
Jeane S. Brackman

10 0 10 20 30 Miles

Scale 1:500,000





COUNTIES FOR WHICH DETAILED 1:20,000 SCALE SOIL SURVEYS FROM USDA WERE USED AS A DATA SOURCE

COUNTIES FOR WHICH GENERALIZED SOIL SURVEYS ON FILE AT THE GEORGIA GEOLOGIC SURVEY WERE USED AS A DATA SOURCE

EXPLANATION

- Teas' specific sample locality
- Teas' sample areas
- Active aggregate producer
- Inactive producer, or one producing fill material
- Abandoned pit, product unknown
- Soil type indicative of a sandy soil
- Geomorphic feature indicative of a sand or gravel deposit
- Low potential for aggregate production
- Moderate potential for aggregate production
- High potential for aggregate production

Potential areas for aggregate production surrounding Teas' sample localities, active aggregate producers, inactive producers, and abandoned pits are shown by a circle (radius = 1 mile).

Base from U.S. Geological Survey State base map

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Maroon	Coastal Plain mapping and stratigraphy
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Lt. Blue	Coastal Zone studies
Dk. Green	Geochemical and geophysical studies
Dk. Blue	Hydrology
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