

**SURVEY OF HIGHWAY CONSTRUCTION MATERIALS
IN THE TOWN OF GEORGIA, FRANKLIN COUNTY, VERMONT**

prepared by

Engineering Geology Section

Materials Division

Vermont Department of Highways

in cooperation with

United States Department of Commerce

Bureau of Public Roads

Montpelier, Vermont

January, 1965

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Acknowledgments

The work of this project was greatly implemented by the cooperation and assistance of many groups and individuals. The following were particularly helpful in carrying out the project's objectives:

1. Various departments and individuals of the Vermont State Department of Highways, notably the Planning and Mapping Division and the Highway Testing Laboratory.
2. Professor D. P. Stewart of Miami University, Oxford, Ohio.
3. Professor Charles G. Doll, Vermont State Geologist, University of Vermont, Burlington, Vermont.
4. The United States Department of Commerce, Bureau of Public Roads.

History

The Materials Survey Project was formed in 1957 by the Vermont State Department of Highways with the assistance of the United States Bureau of Public Roads. Its prime objective was to compile an inventory of highway construction materials in the State of Vermont. Prior to the efforts of the personnel of the Survey as described in this and other reports, searches for highway construction materials were conducted only as the immediate situation required. Thus, only limited areas were surveyed and no over-all picture of material resources was available. Highway contractors or resident engineers are usually required to locate the materials for their respective projects and have samples tested by the Highway Testing Laboratory. The additional cost of exploration for construction materials is passed on to the State in the form of higher construction costs. The Materials Survey Project was established to minimize or eliminate this factor, by enabling the State and its con-

tractors to proceed with information on material sources available beforehand. Prior knowledge of locations of suitable material is an important factor in planning future highways.

The sources of construction materials are located by this Project through ground reconnaissance, study of maps and aerial photographs, and geological and physiographic interpretation. Maps, data sheets, and work sheets for reporting the findings of the Project were designed, keeping in mind their intended use. These maps and data sheets were devised to furnish information of particular use to the contractor or construction man. For maximum benefit, the maps, data sheets, and this report should be studied simultaneously.

Inclosures

Included in this folder are two surface-geology maps; one defining the location of tests conducted on bedrock sources, the other defining the location of tests conducted on granular materials. These maps are derived from 15 minute or 7½ minute quadrangles of the United States Geological Survey enlarged or reduced to 1:31250 or 1" = 2604'. Delineated on the Bedrock Map are the various rock types of the area. This information was obtained from numerous sources; i.e. Vermont Geological Survey Bulletins, Vermont State Geologist Reports, United States Geological Survey Bedrock Maps, Centennial Geological Map of Vermont, as well as other references.

The granular materials map depicts areas covered by various types of glacial deposits (outwash, moraines, kames, kame terraces, etc.) by which potential sources of gravel and sand may be recognized. This information was obtained primarily from a survey being conducted by Professor D. P. Stewart of Miami University, Oxford, Ohio, who has been mapping the glacial

features of the State of Vermont during the summer months since 1956. Further information was obtained from the Soil Survey (Reconnaissance) of Vermont, conducted by the Bureau of Chemistry and Soils of the United States Department of Agriculture, and from Vermont Geological Survey Bulletins, United States Geological Survey Quadrangles, aerial photographs, and other sources. On both maps the areas tested are represented by Identification Numbers. Several tests are usually conducted in each area represented by an Identification Number, the number of such tests being more or less arbitrarily determined either by the character of the material or by the topography.

Also included in this folder are Data Sheets for both the Bedrock and Granular Materials Survey which contain detailed information for each test conducted by the Project as well as information obtained from other sources, including an active card file compiled by the Highway Testing Laboratory. The latter information was gathered over a period of years by many persons and consequently lacks the organized approach and detail required for effective use. The information on the cards varied widely in completeness. Transfer of information from the cards to the Data Sheets was made without elaboration or verification. When possible, the locations of the deposits listed in the card files have also been plotted on the maps; however, some cards in the file were not used because the information on the location of the deposit was incomplete or unidentifiable. Caution should be exercised wherever this information appears incomplete. This project does not assume responsibility for the information taken from the card files.

Work Sheets containing more detailed information of each test, including a detailed sketch of each Identification Number Area, are on file in the office headquarters of this Project, together with the respective Laboratory Reports.

Location

The Town of Georgia is located in Franklin County in the northwest portion of the state, approximately 15 miles south of the Canadian border. The town is bounded on the east by Fairfax, on the north by St. Albans, on the south by Milton and on the west by Lake Champlain. It is in the Champlain Valley physiographic division, an area of fairly smooth relief. There are numerous hills and ridges in the eastern portion of the town. The highest, Cushman Hill, rises to over 1100 feet in elevation. Drainage is into Lake Champlain in the northern and western portions of the town and into Arrowhead Mountain Lake in the southern and eastern portions. There are a few swampy areas along Lake Champlain and north of Arrowhead Mountain Lake.

Procedure for Rock Survey

The routine employed by the Project in the survey of possible sources of rock for highway construction is divided into two main stages: the office investigation and field investigation. The first is conducted primarily during the winter months and comprises the mapping of rock types as indicated in various reference sources. Many different sources of information were utilized, as indicated in the Bibliography. These references differ considerably in dependability due to new developments and studies contributing to the obsolescence of a number of reports. In addition, the results of

samples taken by individuals are analyzed and the location in which these samples were taken is mapped whenever possible. In other words, as complete a correlation as possible is made of all the information available concerning the geology of the area under consideration.

The second stage of the investigation is begun in the field by making a cursory preliminary survey of the entire area. The information obtained in this survey, together with the information assimilated in the first stage of the investigation, is employed to determine the areas in which the testing and sampling will be concentrated. When a promising source is revealed, as determined not only by rock type but also by volume, accessibility and the existence of a good working face, chip samples are taken with a hammer and submitted to the Highway Testing Laboratory for testing by the Deval Method (AASHO, T-3). It shall be kept in mind that samples taken by the chip method are often in the weathered zone of the outcrop, and consequently may show a less satisfactory test result than the fresh material deeper in the body of the rock structure. When deemed necessary, further samples are taken by drilling to a depth of approximately 3 feet and blasting across the strike or trend of the outcrop. When the material is uniform and satisfactory tests result from the chip samples, no further drilling, blasting, or sampling is done and the material source is included as being satisfactory.

Discussion of Rock and Rock Sources

It will be observed that the information on the surface-geology bedrock map in regard to rock type is simplified. For a more detailed description of the respective rock formations, a summary is included in this report. It is apparent from this summary that each formation may not be composed of one

distinct rock type, but may be a complex mixture of rock types blending into one another. For this reason, the data sheets may describe the rock tested as differing from the designation on the map. Occasionally, rocks belonging to the same formation and exhibiting similar outward characteristics (i.e. color, texture, etc.) may produce different abrasion results due to differing physical and chemical properties. Therefore, in no case should satisfactory test results of an area be construed as meaning that a particular area or formation will not later produce unsatisfactory material.

The rocks of Georgia are chiefly metamorphic, comprised of dolomites, quartzites, limestones, shales, slates and schists. They are divided into numerous formations and formation members which generally strike north-south. The main groups ~~that~~ are of concern in this report are the Dunham, The Rugg Brook, the Cheshire and the Beldens formations. All of the testing in the town of Georgia was conducted upon rocks belonging to these formations. Other areas of shale, slate, schist, etc. (such as the Skeel Corners slate member of the Sweetsburg formation in the center of the town) were not tested due to the unsuitability of this type rock for highway usage.

The Dunham formation occurs in both the eastern and western ends of the town of Georgia as flanks of a syncline with a north-south axis. A number of tests were made in this formation (see Plate II). The rock is a massive pink to gray dolomite, weathering buff-colored, and produced wears ranging from 3.0% to 4.8%.

The Cheshire formation occurs in the eastern part of the town. Three tests were made in this rock - a massive gray quartzite, weathering buff (see Plate II). All tests met the abrasion requirements for Item 204, Sub-Base of Crushed Rock, with wears of 4.6%, 3.5% and 5.0%.

The Rugg Brook formation occurs in the eastern and western ends of the town (as two long stringers on the map-see Plate II). Two tests were made in the western flank. The rock is a massive gray dolomite to quartzite, weathering buff, and in both cases meeting the abrasion requirements for Item 204, Sub-Base of Crushed Rock.

The Beldens formation occurs in the northwest portion of the town. It is bounded on the east by the Champlain Thrust and on the west by the Highgate Springs Thrust. Two tests were taken in the formation; the rock is a dove-gray limestone, with many veins of calcite, quite brittle. Both tests met abrasion requirements for Item 204, Sub-Base of Crushed Rock.

There were two areas in the town of Georgia containing quarries which were sampled by the Engineering Geology Section. One of these (see Map Identification No. 2 - Plate II) contained rock used for terrazzo paving because of its beautiful pink-gray mottled color. The other is actually a group of small quarries, overgrown and inactive for many years. Both of these produced rock meeting abrasion requirements for Item 204, Sub-Base of Crushed Rock.

As is evident from Plate II, there are numerous areas in the town of Georgia containing rock meeting abrasion requirements for highway usage. Generally speaking, the four formations mentioned appear to offer the greatest potential for a quarrying site or operation. More detailed information is available at the office of the Engineering Geology Section, Materials Division, Vermont Department of Highways.

Procedure for Sand and Gravel Survey

The method employed by the Project in the survey of possible sources of sand and gravel for highway construction is divided into two main stages: office investigation and field investigation. The office investigation is conducted primarily during the winter months and comprises the mapping of possible potentially productive areas as indicated from various references. Of these references, the survey of glacial deposits mapped by Professor Stewart proves to be valuable, particularly when used in conjunction with other references, such as soil type maps, aerial photographs and United States Geological Survey quadrangles. The last two are used in recognizing and locating physiographic features indicating glacial deposits, and in studying drainage patterns. In addition, the location of known existing pits are mapped. The locations in which samples were taken by other individuals are noted and mapped whenever possible.

The second stage of the investigation is begun in the field by making a cursory preliminary survey of the entire area, noting areas which show physiographic features giving evidence of glacial or fluvial deposits. These locations are later examined by digging test pits with a backhoe to a depth of approximately 11 feet and again sampling the material. The samples are then submitted to the Highway Testing Laboratory where they are tested for stone wear by the Deval Method (AASHTO, T-4-35) and for gradation.

Discussion of Sand and Gravel Deposits

The granular deposits of the town of Georgia are chiefly of glacial, marine and lacustrine origin. They occur as delta marine sands in the southern end of Georgia and as beach gravels throughout the town. Also, there

are lake sand and pebbly sand deposits, as well as a small kame which occurs near the town line in northeastern Georgia. Many of these features, upon testing, proved to contain acceptable material (see Plate I).

Apparently the entire area is a maturely dissected region covered recently by continental glaciers. The melt waters of the glacier produced a large glacial lake. Following this, Atlantic marine waters invaded the area. Large deltas, wave-cut and wave-built terraces, beaches, marine and varved clays, kame terraces, and kettles have been formed during and shortly after the glaciation of the region.

There are numerous pits in the town of Georgia that were tested and found to contain acceptable material (see Plate I). It is possible that further testing may disclose other sources of acceptable material in the town.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF GEORGIA

Beldens Member of the Chipman Formation:- Interbedded buff to brown heavily scored dolomite and white to blue-gray marble and limestone; designated Beldens Formation east of Highgate Springs Thrust.

Cheshire Formation:- Very massive white to faintly pink or buff vitreous quartzite near top in west-central and southwestern Vermont; predominantly a less massive appearing mottled gray, somewhat phyllitic quartzite; dolomitic sandstone and conglomerate near the base of the formation in west-central Vermont apparently grades southward into the Dalton Formation.

Dunham Formation:- Buff weathered siliceous dolomite, pink and cream mottled or buff to gray on fresh surface; lower part is massive, and upper part is sandy and resembles the Winooski dolomite.

Fairfield Pond Member of the Underhill Formation:- Greenish quartzitic schist (quartz-sericite-albite-chlorite-biotite); sericite-quartz-chlorite phyllite, locally purple or red, common in lower part.

Hathaway Formation:- Gray to black argillite and bedded radiolarian chert, with included blocks and fragments of chert, limestone, dolomite, sandstone, and graywacke.

Iberville Formation:- Noncalcareous shale interbedded with occasional dolomite beds and in the lower part with calcareous shale.

Middlebury and Chazy Limestones, Undifferentiated Youngman and Carman Formations:- Dark blue-gray, somewhat nodular and granular limestone with buff dolomite and shaly interbeds a fraction of an inch thick and two to four inches apart. The Middlebury, which is east of the Champlain and Orwell Thrusts, and the Youngman, which is east of the Highgate Springs Thrust, are due partly to deformation, more slaty in appearance than the Chazy which is west of the major thrusts. The Carman is a quartzitic sandstone with shaly partings that underlies the Youngman. The Chazy contains three members (Valcour, Crown Point and Day Point).

Orwell Limestone and Isle LaMotte and Lowville Limestones:- Smooth-bedged sublithographic and lithographic, dove-gray weathered limestone commonly cut by veins of white calcite; beds filled with fossil shell fragments are characteristic. The Lowville is a thin, undifferentiated unit near the base of the Orwell that is characteristically ashen gray and contains abundant *Phytopsis tubulosum*. The Isle LaMotte is about the equivalent of the Orwell in areas west of the Champlain Thrust, on Isle LaMotte and near South Hero, Highgate, Swanton and St. Albans; it is locally underlain by the Lowville, which is too thin to show on the map.

Parker Slate: - Gray to black micaceous shale and slate, includes dolomite, sandstone and quartzite lenses; chiefly on west limb of St. Albans synclinoria.

Pinnacle Formation: - Schistose graywacke, gray to buff, commonly striped, quartz-albite-sericite-biotite rock predominates; quartz-cobble and boulder conglomerate is common, chiefly near base.

Rockledge Conglomerate Member of Sweetsburg Formation: - Phenoclasts chiefly biohermal limestone in a matrix of gray limestone containing frosted quartz sand grains.

Rugg Brook Formation: - Sandy gray dolomite, dolomite conglomerate and interbeds of gray-weathered sandstone, in St. Albans and Middlebury synclinoria.

Skeels Corners Slate and Mill River Conglomerate Members of Sweetsburg Formation: - Black slate, local dolomite, sandstone, dolomite conglomerate, limestone bioherms, limestone and calcareous shale. The Mill River is a basal limestone conglomerate.

St. Albans Slate Member of Sweetsburg Formation: - Black, gray-black, or tan micaceous slate.

GLOSSARY OF SELECTED GEOLOGIC TERMS

- Alluvial - Pertaining to material carried or laid down by running water.
- Delta - A predominantly alluvial deposit built out by a stream into the sea or other body of water. Usually having the typical form of the Greek letter 'delta'.
- Dolomite - As used in this report it applies to rocks approximating the mineral dolomite in composition or consisting predominantly of the mineral dolomite. Mineralogically, dolomite is a mineral of definite chemical composition, $\text{CaMg}(\text{CO}_3)_2$: carbon dioxide 47.7, lime 30.4, and magnesia 21.9 percent.
- Fluvial - Pertaining to streams or stream action.
- Kame - A conical hill of stratified drift, deposited at a glacial terminus by glacial streams flowing in or on the ice.
- Kame Terrace - An accumulation of stratified drift laid down chiefly by streams between a glacier and an adjacent valley wall.
- Kettle, Kettle Hole - A depression found in glacial drift believed to have originated when a block of ice, left isolated by general melting away of a glacier, is partly buried by sediments and later melts entirely away. Kettle holes are usually undrained and the larger ones may contain lakes and ponds.
- Lacustrine - Pertaining to lakes.
- Limestone - A bedded sedimentary deposit consisting chiefly of calcium carbonate (CaCO_3) which yields lime when burned. In a broader sense the term has been used for combinations or mixtures with magnesium carbonate in which the proportion of calcium carbonate is less than half. Limestone is the most important and widely distributed of the carbonate rocks, and is the consolidated equivalent of limy mud, calcareous sand, or shell fragments. The color, due mainly to impurities, ranges from whitish through tones of yellowish to brown, or from various shades of gray, dove-color, dark gray to black. The texture may be aphanitic, fine-grained, or distinctly crystalline. The strength varies with the texture.
- Marine Deposits - Sedimentary deposits laid down in the sea.
- Metamorphic Rocks - Rocks that owe their distinctive characters to the transformation of pre-existing rocks, either through intense heat or pressure or both.

- Moraine - An accumulation of drift with an initial topographic expression of its own built within a glaciated region chiefly by the direct action of glacier ice.
- Outwash - Stratified drift that is stream built beyond the glacier; laid down by meltwater streams issuing from the face of the glacier ice.
- Quartzite - A firm, compact rock composed of grains of quartz so firmly united that fracture takes place across the grains instead of around them. A metamorphosed sandstone.
- Schist - A crystalline rock with a secondary foliation or lamination based on parallelism of platy or needle-like grains. The name refers to the tendency to split along the foliation.
- Shale - A general term for lithified muds, clays, and silts that are fissile and break along planes parallel to the original bedding. A typical shale is so fine grained as to appear homogeneous to the unaided eye, is easily scratched, and has a smooth feel. By metamorphism, shales may become slates, but in slate the cleavage usually lies at an oblique angle to the original bedding and is a secondary development. Shales vary in color, shades of red, brown, gray and green being common; they are thought to be the most abundant of the three common kinds of sedimentary rocks. They are generally of little use as construction material or foundation use, but are an important source of clay for brick, tile, etc., and are used in the manufacture of cement.
- Slate - An homogeneous, metamorphic rock, so fine-grained that no mineral grains can be seen. Slate splits with a foliation so perfect that it yields slabs having plane smooth surfaces.
- Strike - The direction of a line formed by the intersection of a stratum with a horizontal plane.
- Surface-Geology Map - A map showing areas of outcrop of geologic formations, both consolidated rocks and the unconsolidated sediments. Its scale is large enough that pits and quarries can be accurately shown and indexed.
- Synclinal - Formed by strata dipping toward a common line or plane.
- Terrace - A plain, natural or artificial, from which the surface descends on one side and ascends on the other. Terraces are commonly long and narrow, and they border seas, lakes, or interior valleys. A terrace may be built by deposition of sediment from water, it may be cut by the breaking of waves on a shore or the sweeping of currents, or it may be formed by the dislocation of rocks in crustal movements. The descent from river terraces toward the river may be very abrupt, especially in arid regions, the ascent on the other side may be only that of an extensive alluvial slope.

Varves

- The regular layers or alternations of material, in sedimentary deposits, that are due to annual seasonal influences, and occur abundantly in glacial lake sediments.

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TABLE I

GEORGIA GRANULAR DATA SHEET No. 1

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
1	1	1964	0-5.5	Strip-ped	Yes	—	—	55.2	3.0	3.0	1	25.2%	Gran. Borrow (Grav)	Owner: Lucius Hibbard A shallow, extensive pit, occasionally active. Pit poorly stripped. Nine foot face. Test #1 in floor, 200' south of town road. Material is gravel, with water at 5.5'. Rejected for Item 201, Sub-base of Gravel. Has wear of 25.2%. Acceptable for Item 105.
	2	1964	2-9	0-2	Yes	100	100	100	80.0	23.5	1	—	—	Test #2 taken in east face of pit, 20' east of Test #1. Material is fine sand. Rejected for Items 202 & 105. Has excess passing No. 100 & No. 270 mesh sieves.
	3	1964	1-5	Strip-ped	Yes	—	—	43.3	18.0	7.0	1	27.3%	Gran. Borrow (Grav)	Test #3 taken in floor 215' south of Test #1. Material is coarse gravel with some stones over 6". Many flat stones, dirty matrix. Water at 5'. Rejected for Item 201. Has excess passing No. 100 & No. 270 mesh sieves; also, abrasion is too high. Acceptable for Item 105.
2	1	1964	1-9.5	0-1	No	100	100	83.0	19.0 15.8*	5.0 4.2*	1	—	Sand	Owner: Lucius Hibbard A series of sharp knolls in open meadow. Test #1 taken on crest of knoll, southwest

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 2

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-9	0-1	No	—	—	98.8	63.0 62.2*	35.3 34.8*	2	—	—	of pit area of Ident No. 2. Material is pebbly sand from 1'-6.5', going into "fine gravel" to 9.5' with sand bottom. Acceptable for Items 202 & 105. Test #2 taken 85' south of Test #1. Material is silty sand. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves.
	3	1964	1-9	0-1	No	100	99.4	99.0	71.0 70.3*	26.5 26.2*	1	—	—	Test #3 taken beyond corn-field, south of Test #2, 30' north of fence. Silt, sand, with some angular stones. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves.
3	1	1964	1-5	0-1	No	100	100	72.8	34.0	7.0	1	—	Gran. Borrow	Owner: Sylvio Tarte An open meadow east of town road; fairly level. Test #1 taken in southwest corner of meadow, 150' north of fence and 165' east of other fence. Material is till - silt with soft stones (angular). Hit ledge at 5'. Acceptable for Item 105.

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 3

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	3-9	0-1	No	--	--	62.2	5.0	2.0	1	35.6%	Gran. Borrow (Grav)	Test #2 taken on slope reaching down into meadow. 0-1' overburden, 1'-3' silt, 3'-9' sandy gravel, sandy gravel bottom. Rejected for Item 201; has wear of 35.6%, contains only 37.8% stone-minimum allowed is 40.0%. Acceptable for Item 105.
4	1	1964	1-3	0-1	No	--	--	86.9	21.0	9.0	2	----	Gran. Borrow	Owner: Roy Hickok A rolling meadow with generally wet surface. Test #1 taken on side hill, 720' southeast of ditch, 65' north of fence. Material is wet pebbly silt with some stones over 6". Acceptable for Item 105.
5	1	1964	1-7	0-1	No	--	--	33.9	11.0	2.5	2	----	Sand	Owner: Roy Gates A small knoll at high elevation. Test #1 taken southwest of power line and east of proposed Route I-89. Material is pebbly sand with ledge at 7'. Acceptable for Items 202 and 105.
6	1	1964	1-7	0-1	No	--	--	73.3	34.0 24.9*	11.0 8.1*	1	----	----	Owner: Roy Gates A large knoll with ledge outcrop on north end. Test #1 taken in hayfield, 175' west of meadow. Material is sandy silt with angular

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 4

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														stones. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves.
7	1	1964	1-7	0-1	No	100	100	99.6	57.0 56.8*	13.0 12.9*	3	—	—	Owner: Roy Gates A large level area in valley floor. Test #1 taken about 180' east of ditch. Material is fine wet sand, dark blue-gray in color. (No pebbles). Rejected for Items 202 & 105. Has excess of material passing No. 100 & No. 270 mesh sieves.
8	1	1964	2-9	0-2	Yes	100	100	100	35.0 35.0*	7.0 7.0*	1½	—	Gran. Borrow (Sand)	Owner: Paul Martin A long narrow ridge in open pasture. Contains a small pit in north end (shallow), which is accessible. Test #1 taken in south end of ridge 200' north of fence. Sandy material. Rejected for Item 202; has excess passing No. 100 & No. 270 mesh sieves. Acceptable for Item 105.
	2	1964	1-5	0-1	Yes	100	100	61.5	6.0	2.5	1	—	Gran. Borrow	Test #2 taken in floor of pit. Material is sandy, silty gravel with till at 5'. Acceptable for Item 105.

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 5

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
9	1	1964	1-6	0-1	No	100	90.7	78.3	15.0	7.5	1	—	Gran. Borrow	Owner: Paul Martin A large pasture behind barn. Test #1 taken in cattle path 314' east of center of State Aid Route 4. Many large angular stones on surface. Material is a pebbly, silty sand; wet. Acceptable for Item 105.
10	1	1964	0.5-10	0-0.5	No	100	100	90.6	7.0 6.3*	2.0 1.8*	3	—	Sand	Owner: Paul Martin A narrow clearing of granular material close to proposed Route I-89. Test #1 taken 320' right of Sta. 3185+00 centerline. Material is pebbly sand. Acceptable for Items No. 202 & 105.
	2A**	1964	1-4	0-1	No	—	—	59.3	12.0	5.0	4 1/2	25.4%	—	Testhole #2 taken on level shelf of valley wall, 425' east of Test #1. Coarse gravel with many stones over 6" to a depth of 4'. ** Test #2A rejected for Item 201: has wear of 25.4%, has excess passing No. 270 mesh sieve, color is too high. Rejected for Item 105;
	2B	1964	4-9	—	No	100	97.9	89.5	14.0 12.5*	1.5 1.3*	1	—	Sand	color is too high. Test #2B represents lower portion of testhole. Sand, containing pebbles. Acceptable for Items 202 & 105.
*Percent of Total Sample														

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR SHEET No. 6

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	3A	1964	1-4	0-1	No	—	—	32.5	10.0	3.8	2	19.6%	Gravel	Testhole #3 taken 150' east of testhole #2. 0-1' over-burden, 1'-4' gravel, 4'-9' sand, ledge bottom. Test #3A represents gravel portion. Acceptable for Items 201 & 105.
	3B	1964	4-9	—	No	100	96.9	87.3	19.0 16.6*	2.5 2.2*	1	—	Sand	Test #3B represents the sand portion of testhole, with ledge bottom. Acceptable for Items 202 and 105.
11	1	1964	1-3	0-1	Yes	—	—	20.4	16.0	7.5	5	22.6%	—	Owner: Will Adams A large level open pasture containing several shallow pits. Test #1 taken between two pits alongside Town Road 24 (40' south of northernmost pit, 80' north of southernmost pit). Material is dirty gravel with flat stones. Hit ledge at 3'. Rejected for Items 201 & 105: has excess passing No. 100 & No. 270 mesh sieves, has color of 5.
	2	1964	—	0-0.5	Yes	Not sampled					—	—	—	Test #2 taken in floor of pit. Hit ledge at 0.5.
	3	1964	1-5.5	0-1	Yes	—	—	27.4	18.0	8.5	3 1/2	29.2%	Gran. Borrow (Grav)	Test #3 taken in north face of southernmost pit. Pit dimensions are 85' east-west, 45' north-south. Material is "dirty" gravel with ledge at 5.5'. Rejected for Item 201: has excess material

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 7

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	4	1964	1-4	0-1	Yes	---	---	34.5	12.0	4.0	3	27.4%	Gran. Borrow (Grav)	passing No. 100 & No. 270 mesh sieves, has wear of 29.2%. Acceptable for Item 105. Test #4 taken in floor of northernmost pit, 40' north of Test #1. Material is dirty coarse gravel, with ledge at 4'. Many large rocks in test hole. Rejected for Item 201. Has wear of 27.4%. Acceptable for Item 105.
12	1	1964	1-9	0-1	No	100	100	100	93.0 93.0*	11.0 11.0*	5	----	----	Owner: H. E. Buckland An open meadow with low hills. Test #1 taken 38' east of woods & 185' south of woods, in northwest corner of meadow. Material is fine sand, beginning to get wet in bottom. Rejected for Items 202 & 105. Has excess passing No. 100 & No. 270 mesh sieves. Has color of 5.
	2	1964	1-8	0-1	No	100	100	100	97.0 97.0*	11.0 11.0*	2 1/2	----	----	Test #2 taken 220' east of Test #1, 80' west of woods. Material is fine sand bottom. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves.
13	1	1964	1-9	0-1	No	100	100	100	68.0 68.0*	8.0 8.0*	2	----	Gran. Borrow (Sand)	Owner: Ralph Bovat A sandy area with rough terrain. Ledge is adjacent to many sand blows. Test #1 taken 315' north of fence.

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 8

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-7	0-1	No	100	100	100	73.0 73.0*	8.0 8.0*	2	----	Gran. Borrow (Sand)	Fine to medium sand with ledge at 9'. Rejected for Item 202. Has excess passing No. 100 & No. 270 mesh sieves. Acceptable for Item 105. Test #2 taken 350' north of Test #1. Material is medium fine sand, with ledge at 7'. Rejected for Item 202. Has excess material passing No. 100 & No. 270 mesh sieves. Acceptable for Item 105.
14	1	1964	1-45	0-1	No.	100	100	100	35.0 35.0*	1.3 1.3*	3	----	Gran. Borrow (Sand)	Owner: Wallace Perham A big meadow with rolling knolls. Test #1 taken above the face of old abandoned pit, behind house. A long narrow ridge of sand extends north to south. 0-1' overburden, 1'-4 1/2' sand, 4 1/2'-7' till. Ledge bottom. Rejected for Item 202. Excessive material passing No. 100 mesh. (Maximum 18%). Acceptable for Item 105.
15	1	1964	1-8	0-1	No	100	100	97.1	24.0 23.3*	2.5 2.4*	2	----	Gran. Borrow (Sand)	Owner: Joseph Rowe An open meadow adjacent to lake. Test #1 taken 165' east of lake, 65' south of trees. Material is medium coarse sand. Rejected for Item 202. Has excess passing No. 100 mesh sieve. Acceptable for Item 105.

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 9

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-8	0-1	No	100	100	93.0	24.0 22.3*	3.5 3.3*	1 1/2	----	Gran. Borrow (Sand)	Test #2 taken 155' southeast of Test #1, 130' north of trees. Material is medium coarse sand with pebbles. Rejected for Item 202. Has excess passing #100 mesh sieve. Acceptable for Item 105.
16	1	1964	0-8	Stripped	Yes	100	100	100	58.0 58.0*	12.5 12.5*	1	----	----	Owner: Pierre deLoeschnigg A series of small pits, with many piles of material in pit proper. Poorly managed. Test #1 taken in pit nearest lake. Material is uniform sand. Rejected for Items 202 & 105. Has excess passing No. 100 & No. 270 mesh sieves.
	2	1964	5-9	----	Yes	100	100	99.5	54.0 53.7*	3.0 3.0*	3 1/2	----	Gran. Borrow (Sand)	Test #2 taken 60' west of Test #1 in face at west end. May have been pushed in for stripping. 0-1' overburden, 1'-5' silt with roots, 5'-9' sand, with sand bottom. Rejected for Item 202. Has excess passing No. 100 mesh sieve. Acceptable for Item 105.
	3	1964	0.5-6	0-0.5	Yes	---	---	52.4	2.0	0.8	2 1/2	19.6%	Gravel	Test #3 taken in west face of pit, north of Test #2. Material is sandy gravel. Acceptable for Items 201 and 105.

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 10

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	4	1964	0-10	Stripped	Yes	100	100	100	48.0 48.0*	4.5 4.5*	1	----	Gran. Borrow (Sand)	Test #4 taken in floor of pit at west end. Material is fine sand. Rejected for Item 202; has excess passing No. 100 mesh sieve. Acceptable for Item 105.
	5	1964	2-9.5	----	Yes	100	100	95.1	31.0 29.5*	2.5 2.4*	1	----	Gran. Borrow (Sand)	Test #5 taken 140' east of Test #3 in east end of pit. 0-2' is sand that has been filled in (not sampled). Material from 2'-9.5' is sand, wet in bottom. Rejected for Item 202; has excess passing No. 100 mesh sieve. Acceptable for Item 105.
	6	1964	1-9	0-1	Yes	100	100	99.5	58.0 57.7*	10.0 10.0*	2	----	Gran. Borrow (Sand)	Test #6 taken on ridge between pits. Ridge is 75' wide here (north-south). Material is sand (brown colored on surface grading into gray). Bands of fine sand near bottom. Rejected for Item 202; has excess of material passing No. 100 mesh sieve. Acceptable for Item 105.
17	1	1964	1-10.5	0-1	No	100	100	100	81.0 81.0*	26.0 26.0*	1	----	----	Owner: Pierre deLoeschnigg A very large level sand area. Large sand blows to the east. Test #1 taken 210' north of lake. Material is sandy. Rejected for Items #202 and 105. Has excess material passing No. 100 & No. 270 mesh sieves.

*Percent of Total Sample

GEORGIA GRANULAR DATA SHEET No. 11

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 12

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
19	1	1964	1.5-9	0-1.5	No	100	100	100	92.0 92.0*	29.0 29.0*	1	----	----	Owner: Edward Blake A large flat meadow. Test #1 taken in southwest corner of field. Material is medium sand with bands of silt towards bottom. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves.
20	1	1964	1-9	0-1	No	100	100	99.6	44.0 43.8*	19.0 18.9*	2	----	----	Owner: Roland Lamotte An open pasture of elongated knolls. Test #1 taken 65' south of fence. Material is sand with silt bottom. Rejected for Items 202 & 105. Has excess passing No. 100 and No. 270 mesh sieves. Test #2 taken 350' southwest of Test #1. Material is silty sand. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves. Test #3 taken 400' southwest of Test #2. Material is fine sand. Rejected for Items No. 202 & 105. Has excess material passing No. 100 & 270 mesh sieves. Test #4 taken in northwest corner of field, near proposed Interstate line. Material is silt. Rejected for Items 202 & 105. Has excess passing No. 100 & 270 mesh sieves.
	2	1964	1-8.5	0-1	No	100	100	100	90.0 90.0*	30.0 30.0*	1	----	----	
	3	1964	1-8	0-1	No	100	100	100	90.0 90.0*	24.0 24.0*	1 1/2	----	----	
	4	1964	1-9	0-1	No	100	100	100	90.0 90.0*	38.0 38.0*	1	----	----	

*Percent of Total Sample

GEORGIA GRANULAR DATA SHEET No. 13

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
21	1	1964	0.5-10	0-0.5	No	100	100	98.9	12.0 11.8*	2.0 2.0*	3 1/2	----	Sand	Owner: Clement Sharrow A very large level area, overgrown with occasional scrub birch. Test #1 taken 170' west of Sta. 2970+00 southbound lane of proposed I-89. Material is sand with small pebbles. Acceptable for Items 202 and 105. Test #2 taken 200' west of Test #1. Material is sand, with no pebbles. Acceptable for Items 202 and 105. Test #3 taken 200' west of Test #2. Material is medium sand, becoming finer with depth. Rejected for Item 202; has excess passing the No. 100 mesh sieve. Acceptable for Item 105. Test #4 taken north of Test #1, 200' west of Sta. 2973+00 southbound lane of proposed I-89. Material is sand. Rejected for Item 202; has excess passing the No. 100 mesh sieve. Acceptable for Item 105. Test #5 taken 200' left of Test #4. Material is sand. Acceptable for Items 202 and 105.
	2	1964	0.5-9	0-0.5	No	100	100	100	18.0 18.0*	1.3 1.3*	3	----	Sand	
	3	1964	0.5-8	0-0.5	No	100	100	99.5	44.0 43.8*	4.0 4.0*	1	----	Gran. Borrow (Sand)	
	4	1964	0.5-9	0-0.5	No	100	100	99.6	23.0 22.9*	2.0 2.0*	1 1/2	----	Gran. Borrow (Sand)	
	5	1964	0.5-8	0-0.5	No	100	100	97.9	11.0 10.8*	3.0 2.9*	2 1/2	----	Sand	

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 14

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	6	1964	0.5-8	0-0.5	No	100	100	100	90.0 90.0*	17.0 17.0*	1	----	----	Test #6 taken 150' west of Test #5. Material is sand, becoming finer towards the bottom. Rejected for Items 202 & 105. Has excess material passing No. 100 & 270 mesh sieves.
	7	1964	0.5-8	0-0.5	No	100	100	94.6	3.0 2.8*	0.8 0.7*	2 1/2	----	Sand	Test #7 taken 200' east of Sta. 2973+00 southbound lane of proposed I-89. Material is medium coarse sand. Acceptable for Items 202 & 105.
	8	1964	0.5-9	0-0.5	No	100	100	100	11.0 11.0*	5.0 5.0*	1	----	Sand	Test #8 taken 120' north of Milton town line, 200' east of I-89. Material is sand. Acceptable for Items 202 and 105.
22	1	1964	1-8	0-1	No	100	100	100	65.0 65.0*	13.0 13.0*	1	----	----	Owner: Mayford Rounds A flat area partly overgrown. Test #1 taken 35' south of tree line by shed, 125' west of treeline parallel to town road. Material is fine sand to silt. Rejected for Items 202 & 105. Excess material passing No. 100 & 270 mesh sieves.
23	1	1964	1-9	0-1	No	100	100	100	83.0 83.0*	26.0 26.0*	3	----	----	Owner: King Estate A large pasture largely overgrown with brush and small trees. Rolling slopes. Test #1 taken 105' south of King house, 45' west of shed.

*Percent of Total Sample

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 15

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														Medium sand, with fine sand in bottom. Rejected for Items 202 & 105. Has excess passing No. 100 & No. 270 mesh sieves.
24	1	1964	1-9	0-1	No	100	100	100	67.0 67.0*	6.0 6.0*	1	----	Gran. Borrow (Sand)	Owner: John Duffy A very small open area in wooded field. Small trees and brush growing over whole area. Test #1 taken 70' north of town road. Fine sand. Rejected for Item 202; has excess material passing No. 100 & No. 270 mesh sieves. Acceptable for Item 105.
25	1	1964	1-10	0-1	No	100	100	100	83.0 83.0*	15.0 15.0*	1	----	----	Owner: Alden Ballard A small level open area bounded by gently rolling knolls. Test #1 taken in southeast corner of field. Material is fine sand, with silt bottom. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves.
26	1	1964	1-3	0-1	No	100	100	99.6	72.0 71.7*	22.0 21.9*	1 1/2	----	----	Owner: Winifred Decker A fairly large open area with rolling hills. A long narrow ridge extends north-south. Test #1 taken in center of field, 235' west of fence. 0-1' overburden, 1'-3' fine sand, 3'-8' silt,

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 16

GEORGIA GRANULAR DATA SHEET NO. 16

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-5	0-1	No	100	100	100	98.0 98.0*	15.0 15.0*	1	----	----	silt bottom. Rejected for Items 202 & 105. Has excess material passing No. 100 & No. 270 mesh sieves. Test #2 taken 60' south of Test #1. 0-1' overburden, 1'-5' fine sand, 5'-9' silt, silt bottom. Sampled 1'-5' depth. Rejected for Items 202 & 105. Has excess material passing No. 100 and No. 270 mesh sieves.
27	1	1964	1-9	0-1	No	100	100	95.9	85.0 81.5*	15.0 14.4*	1	----	----	Owner: Hale Nye An open pasture of ridges and knolls. Test #1 taken 215' west of road, 60' south of edge of knoll. Material is fine sand, with bands of silt. Rejected for Items 202 & 105. Has excesses passing No. 100 and No. 270 mesh sieves.
	2	1964	1-7	0-1	No	100	100	100	53.0	25.0	1	----	----	Test #2 taken south of Test #1 on ridge, 260' west of road, 190' north of stumps. Rejected for Item 105. Has excess material passing No. 270 mesh sieve.
28	1	1964	1-8	0-1	No	100	100	100	49.0 49.0*	5.0 5.0*	1	----	Gran. Borrow (Sand)	Owner: Hale Nye A large level area planted to white pine, north of Area #27. Test #1 taken 10'

*Percent of Total Sample

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 17

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-9	0-1	No	100	100	100	35.0 35.0*	1.0 1.0*	1	----	Gran. Borrow (Sand)	south of fence parallel to town road, 320' south of fence. Material is uniform, medium sand. Rejected for Item 202; has excess passing No. 100 mesh sieve. Acceptable for Item 105. Test #2 taken 280' west of Test #1, 25' south of property fence. Material is sandy. Rejected for Item 202; has excess passing No. 100 mesh sieve. Acceptable for Item 105.
29	1	1964	1-10	0-1	No	100	100	100	83.0 83.0*	13.0 13.0*	1	----	----	Owner: Jean Paul Bechard A large level open meadow. Test #1 taken 120' west of fence. Material is uniform fine sand. Rejected for Items 202 & 105; has excess material passing No. 100 & No. 270 mesh sieves. Test #2 taken in northwest corner of field, 75' from woods, 35' south of town road. Material is medium coarse sand, acceptable for Items 202 and 105. Test #3 taken north of Test #2 and across town road in large field with small pine trees. Material is fine, silty sand. Rejected for Items 202 and 105.
	2	1964	1-8	0-1	No	100	100	99.6	7.0 7.0*	0.8 0.8*	1	----	Sand	
	3	1964	1-9	0-1	No	100	100	99.6	68.0 67.7*	16.0 15.9*	1	----	----	

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 18

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	4	1964	1-9	0-1	No	100	100	100	37.0 37.0*	3.0 3.0*	1	----	Gran. Borrow (Sand)	Test #4 taken 200' east of Test #1, 25' west of town road. Material is sandy. Rejected for Item 202; has excess material passing No. 100 mesh sieve. Acceptable for Item 105.
30	1	1964	1-31	0-1	Yes	100	100	100	63.0 63.0*	10.0 10.0*	1	----	Gran. Borrow (Sand)	Owner: Town of Georgia A small pit (dimensions are 50' north-south, and 100' to road). Poorly stripped, with topsoil falling into pit. Interbedded sand and silt. Test #1 taken in east face of pit, by hand shovel. At 19' material becomes quite coarse (fine gravel), but most of face is sandy silt. Rejected for Item 202, has excess passing No. 100 and No. 270 mesh sieves. Acceptable for Item 105.
	2	1964	0-7	Stripped	Yes	100	100	100	91.0 91.0*	14.0 14.0*	1	----	----	Test #2 taken in floor of pit. Material is silty sand, wet in bottom. Rejected for Items 202 & 105; has excess material passing No. 100 and #270 mesh sieves.
	3	1964	1-8	0-1	Yes	100	100	98.8	25.0 24.7*	1.5 1.5*	1	----	Gran. Borrow (Sand)	Test #3 taken 60' south of pit, 60' east of road. Material is silty sand, rejected for Item 202, has excess passing #100 mesh sieve. Acceptable for Item=

*Percent of Total Sample

105.

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 19

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
31	1	1964	1-10	0-1	Yes	100	100	99.5	3.0 8.0*	1.0 1.0*	3	----	Sand	Owner: Donald Wood A large level open pasture, with a small pit at south-west corner. Test #1 taken in face of pit. Material is medium sand, becoming coarser in bottom. Acceptable for Items 202 and 105. Test #2 taken in floor of pit (west end). Fine sand with bands of fine silt. Rejected for Item 202; has excess passing No. 100 mesh sieve. Acceptable for Item 105. Test #3 taken 100' north of pit, 390' south of town road. Material is fine sand, becoming sandy silt toward bottom. Rejected for Item 202; has excess material passing #100 & #270 mesh sieves. Acceptable for Item 105. Test #4 taken 300' west of Test #3, 240' east of fence. Sandy material, with silty bottom. Rejected for Item 202; has excess passing the No. 100 mesh sieve. Acceptable for Item 105.
	2	1964	0-8	Stripped	Yes	100	100	100	25.0 25.0*	1.0 1.0*	1 1/2	----	Gran. Borrow (Sand)	
	3	1964	1-8.5	0-1	No	100	100	100	50.0 50.0*	10.0 10.0*	2	----	Gran. Borrow (Sand)	
	4	1964	1-8	0-1	Yes	100	100	100	37.0 37.0*	4.0 4.0*	2 1/2	----	Gran. Borrow (Sand)	
32	1	1964	0-10.5	Stripped	Yes	--	--	66.8	3.0	1.0	1	21.0%	Gran. Borrow	Owner: Doran Mills A large pit against rock face.

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET NO. 20

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-7	0-1	Yes	--	--	59.4	5.0	2.0	1	21.4%	Gravel (Grav)	Active; poorly stripped. South face is 16' high, has strata dipping south. Sandy gravel, with a thin band of coarse gravel near the top. Test #1 taken in back of south face represents this material. Rejected for Item 201. Has only 33.2% stone. Acceptable for Item 105.
	3	1964	1-7	0-1	Yes	--	--	69.2	20.0	1.5	1	21.4%	Gran. Borrow (Grav)	Test #2 taken 130' south of Test #1, 55' north of town line. Material is same as Test #1, but with more stones. Acceptable for Items 201 and 105. Test #3 taken 200' west of Test #2, where possible extension exists. Material is gravelly, with fine sand in bottom. Rejected on gradation for Item 201. Acceptable for Item 105.
	4	1964	0-4	Stripped	Yes	--	--	61.3	5.0	1.0	1	21.4%	Gran. Borrow (Grav)	Test #4 taken in floor of pit, 25' north of Test #1. Fine gravel, with water at 4'. Rejected for Item 201 on gradation. Acceptable for Item 105.
	5	1964	1-16	0-1	Yes	--	--	44.7	9.0	2.0	1	19.6%	Gravel	Test #5 taken in south face of pit, just east of stripped area. Material is gravel. Acceptable for Items 201 and 105.

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 21

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
33	1	1964	1-40	0-1	Yes	--	--	27.3	9.0	3.0	1	16.8%	Gravel	Owner: Doran Mills A small pit, nearly depleted; used recently. Little extension-possibly 15' to east. Test #1 taken in east face of pit. Material is gravel, plastered against ledge. Acceptable for Items 201 & 105.
34	1	1964	1-25	0-1	Yes	--	--	28.8	4.0	1.0	3 1/2	20.8%	Gravel	Owner: E. A. Guerin A small pit, not stripped. Inactive (owner not interested in selling). Much brush and trash on face. Pit is 50' wide, with good extension to the north. Test #1 taken in east face (25' high). Material is gravel, with CaCO ₃ cementation. Acceptable for Items 201 and 105.
35	1	1964	1-6	0-1	Yes	91.4	88.5	79.8	9.0 7.2*	1.5 1.2*	1	----	Gran. Borrow (Sand)	Owner: Donald Sweeney A level meadow at high elevation just above pit. Pit contains many very large boulders- nothing to sample. Many boulders not hard enough to crush. Ledge nearby. Test #1 taken 107' east of fence along top of pit, in open meadow. Material is a pebbly sand, with boulders in the bottom. Rejected for Item 202; has 8.6% retained on the 1 1/2" screen. Acceptable for Item 105

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 22

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
36	1	1964	1-8	0-1	Yes	--	--	59.9	13.0	3.0	1	13.6%	Gravel	Owner: Philip Hayden A broad terrace containing two small shallow pits. Pits are inactive, overgrown with poplars. Test #1 taken between two pits, 130' south of northern pit, 75' east of woods. Material is "beach gravel" - small stones in a silty matrix (coarser toward bottom). A few stones over 6". Acceptable for Items 201 and 105
37	1	1964	1-3	0-1	No	100	100	100	44.0	36.6	5	----	----	Owner: Hubert Rheame A small meadow in low-lying area. Test #1 taken in corner of field, just south of abandoned road. Material is light gray hard-packed silty clay, with angular stones. Rejected for Item 105. Has more than 10% passing No. 270 mesh sieve and has a color of 5. Sample run by Soils Laboratory. Sieve Analysis = % Passing (Total Sample): 3/4" 100.0% 3/8" 96.0% No. 4 39.3% No. 10 73.0% No. 40 55.6% No. 100 39.3% No. 200 34.0% No. 270 32.7% Soil Type is A-24.

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 23

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
38	1	1964	1-6	0-1	Yes	--	--	55.8	11.0	3.0	1	----	Gran. Borrow (Grav)	Owner: Edmund Wilcox An average size pit in southern end of large level meadow. Pit overgrown with trees. Test #1 taken just east of pit, 15' south of fence, 155' north of ledge. Hit ledge at 6'. Material is "beach gravel" - flat small stones, well imbricated, in a dirty matrix. Meets grading requirements for Item 201, but insufficient stone for wear test. Acceptable for Item 105.
39	1	1964	1-4	0-1	No	Not Sampled					---	----	----	Owner: Mrs. Mildred McKinney A large flat meadow sloping gently to lake. Test #1 taken 135' west of town road, 34' north of fence. Material is dirty pebbly soil with large angular stones. Not sampled.
40	1	1964	1-3	0-1	Yes	100	100	100	98.4	76.4	1	----	----	Owner: Francis Cline A shallow extensive pit (poorly stripped); very wet in bottom. Test #1 taken in floor of pit. Material is a blue-gray sandy silt with water at 3'. Rejected for Item 105. Sample run by Soils Laboratory.

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 24

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														Sieve Analysis = % Passing (Total Sample): No. 4 100.0% No. 10 100.0% No. 40 99.4% No. 100 98.4% No. 200 78.4% No. 270 76.4% Soil Type is A-4.
	2	1964	1-8	0-1	Yes	--	--	52.7	4.0	2.0	1	26.4%	Gran. Borrow (Grav)	Test #2 taken in face of pit Sandy gravel. Rejected for Item 201; has wear of 26.4%. Acceptable for Item 105.
	3	1964	1-7	0-1	No	--	--	63.0	9.0	2.0	1	----	Gran. Borrow (Grav)	Test #3 taken 165' east of pit, 75' south of town road. Material is sandy gravel, wet in bottom. Contains pelecypods. Rejected for Item 201; contains only 37.0% stone. Insufficient proper size stone for wear test. Acceptable for Item 105.
	4	1964	1-5	0-1	No	93.6	87.1	74.2	6.0 4.5*	1.5 1.1*	1	----	Gran. Borrow (Sand) (Grav)	Test #4 taken 250' southeast of Test #3, 115' north of tree line. Material is peb- bly sand, similar to Test #3. Tested and fails for Items #201 and 202. Accept- able for Item 105. Fails Item 201 on stone content; fails Item 202 on % passing 1 1/2" screen (93.6).

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 25

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	5	1964	3-8	0-3	No	--	--	35.5	6.0	2.3	1	24.6%	Gravel	Test #5 taken 300' northeast of Test #4, 70' south of road, 115' north of trees. Material appears sandy, but passes for Item 201, also passes for Item 105.
	6	1964	2-8	0-2	No	--	--	45.0	5.0	0.5	1	----	Gran. Borrow (Grav)	Test #6 taken 300' east of Test #5, 65' south of town road, 195' west of cemetery. Material is fine gravel, with insufficient stone for abrasion test. Acceptable for Item 201 on gradation; acceptable for Item 105.
	7	1964	1-4	0-1	No	N o t S a m p l e d					---	----	----	Test #7 taken in floor of old pit behind cemetery. A very extensive shallow and heavily overgrown pit. Material is a mixture of till and blue silt, with ledge at 4'. Not sampled.
	8	1964	1-5	0-1	No	100	100	97.2	11.0 10.7*	1.3 1.2*	1	----	Sand	Test #8 taken 60' northwest of deep ravine, south of Test #4. Material is sandy. Acceptable for Items 202 and 105.
	9	1964	1-6	0-1	No	100	100	100	48.0 48.0*	5.0 5.0*	1	----	Gran. Borrow (Sand)	Test #9 taken in open meadow beyond trees, south of meadow containing pits. Material is sand with water from 1'-6', and blue clay containing many pelecypods from 6'-8'. Rejected for Item 202; has excess passing No. 100 mesh sieve. Acceptable for Item 105.

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 26

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1½"	5/8"	#4	#100	#270				
	10	1964	1-6.5	0-1	No	100	100	80.8	7.0 5.7*	3.0 2.4*	3½	----	Sand	Test #10 taken on low ridge indicating a beach formation. Log of #10: 0-1' overburden, 1'-2' gravel, 2'-6.5' wet sand, 6.5'-8' blue clay, blue clay bottom. Acceptable for Items 202 and 105.
	11	1964	1-4	0-1	No	N o t S a m p l e d					---	----	----	Test #11 taken 200' west of Test #10, 32' east of trees. Material is silty clay, with ledge at 4'. Not sampled.
41	1	1964	1-4	0-1	No	100	100	93.0	24.0	3.0	1	----	Gran. Borrow	Owner: Mrs. Louise Marvin A large open meadow, quite level. Test #1 taken in northeast corner, 260' south of fence. Material is dirty and sandy with angular stones. Hit ledge at 4'. Acceptable for Item 105.
	2	1964	1-7	0-1	No	100	100	73.5	3.0 2.2*	1.3 0.9*	1	----	Sand	Test #2 taken in west end of meadow, just east of cornfield. Pebbly sand from 1'-7'; gray clay-like silt with angular stones from 7'-8'. Acceptable for Items 202 and 105.
42	1	1964	1-4	0-1	No	36.9	76.9	66.3	4.0 2.7*	2.0 1.3*	3½	----	Gran. Borrow (Sand)	Owner: Mrs. Louise Marvin An open meadow, ledge exposed throughout. Test #1 taken 35' west of woods, 230' north of fence by cornfield. Pebbly sand with large stones and boulders.
*Percent of Total Sample														

*Percent of Total Sample

TABLE I (cont'd.)

GEORGIA GRANULAR DATA SHEET No. 27

Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														Rejected for Item 202; Has excess retained on the 1 1/2" and No. 4 screens. Acceptable for Item 105.
43	1	1964	1-5	0-1	Yes	100	100	100	55.0 55.0*	23.0 23.0*	1	----	----	Owner: Mrs. Edith Janes An open meadow with pit at south end. Pit is inactive (used as a dump). Test #1 taken just north of pit. Material is lake silt, thinly bedded. Rejected for Items 202 and 105. Has excess passing No. 100 and No. 270 mesh sieves.
44	1	1964	1-5	0-1	Yes	--	--	65.1	10.0	2.0	2	----	Gran. Borrow	Owner: Fred Pattee A level open meadow. An old pit east of barns, now grown over. Test #1 taken near barns. Dirty, pebbly sand, with boulders. Acceptable for Item 105.

*Percent of Total Sample

*Percent of Total Sample

TABLE I
Supplement

GEORGIA PROPERTY OWNERS - GRANULAR

Map Ident. No.

Adams, Will ✓	11
Ballard, Alden	25
Bechard, Jean Paul	29
Blake, Edward	19
Bovat, Ralph	13
Buckland, H. E.	12
Cline, Francis	40
Decker, Winifred	26
deLoeschnigg, Pierre	16, 17
Doran Mills	32, 33
Duffy, John	24
Gates, Roy	5, 6, 7
Georgia, Town of	30
Guerin, E. A.	34
Hayden, Philip	36
Hibbard, Lucius	1, 2
Hickok, Roy ✓	4
Janes, Mrs. Edith	43
King Estate	23
Lamotte, Roland	20
Martin, Paul	8, 9, 10
Marvin, Mrs. Louise	41, 42
McGraw, John	18
McKinney, Mrs. Mildred	39
Nye, Hale	27, 28
Pattee, Fred	44
Perham, Wallace	14
Rheaume, Hubert	37
Rounds, Mayford	22
Rowe, Joseph	15
Sharrow, Clement	21
Sweeney, Donald	35
Tarte, Silvio	3
Wilcox, Edmund ✓	38
Wood, Donald	31

TABLE II

GEORGIA ROCK DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Exist- ing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
1	1	1964	Limestone	No	Chip	5.2%	Owner: Pelletier. A large outcrop east of house and barn. Outcrop has good relief. Rock is a dove-gray limestone, with many veins of calcite, belonging to the Beldens formation. Occasionally weathers buff-colored with a heavily scored surface. A random sample of the outcrop was taken. Rock chipped quite easily, appeared "brittle". Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
2	1	1964	Dolomite	Yes	Chip	3.3%	Owner: Swanton Lime Company. A long narrow quarry 1.5 miles west of U.S. Route #7. Quarry is fairly shallow, with 15'-20' faces. Rock is a pink and gray mottled dolomite, of the Dunham formation. Quarry has been active recently, the material used for terrazzo paving. A random sample was taken from the quarry. Rock meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
3	1	1964	Limestone	Yes	Chip	4.9%	Owner: Raymond Teague. Numerous very small quarries which have been inactive for many years. Heavily overgrown with trees. Rock type is limestone with veins of calcite, same as rock type of Map Ident. #1. A random sample of area was taken. Rock meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
4	1	1964	Dolomite	No	Chip	3.6%	Owner: Jasper Rushford. A knoll in pasture, partially overgrown with brush and large trees; accessible from town road. Test #1 taken randomly from center of knoll. Rock belongs to the Rugg Brook formation and is a gray dolomite, weathering buff. Meets requirements for Item 204, Sub-base of Crushed Rock.
5	1	1964	Dolomite	No	Chip	3.0%	Owner: Dr. H. C. Rhodes. A very large outcrop north of town road, overgrown with cedar. Good relief. Test #1 taken randomly from outcrop. Rock belongs to the Dunham formation and is a gray and pink dolomite, weathering buff. Rock meets abrasion requirements for Item 204, Sub-base of Crushed Rock.

TABLE II (cont.)

GEORGIA ROCK DATA SHEET No. 2

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHTO T-3	Remarks
6	1	1964	Quartzite	No	Chip	7.1%	Owner: Dr. H. C. Rhodes. A large outcrop east of town road, accessible from road. Pasture is somewhat overgrown with large trees. Test #1 taken randomly from center of outcrop. Rock belongs to the Rugg Brook formation, is a fairly massive gray quartzite, weathering buff. Breaks in layers of one inch or more. Meets abrasion requirements for Item 204 Sub-base of Crushed Rock.
7	1	1964	Quartzite	No	Chip	3.5%	Owner: Gilles Rainville. A high face with approximately 50' width. Area is 1.2 miles east of Sta. 3065+50 of proposed Rte. I-89. Unlimited quantity to north. Rock is dark gray phyllitic or schistose quartzite, weathering buff, and belonging to the Cheshire formation. Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
8	1	1964	Quartzite	No	Chip	5.0%	Owner: Ralph Bovat. An extensive ridge approximately 500' in width and 60' in height. Partly covered with large trees. Bounded on the west by the Central Vermont Railroad tracks and on the south by a town road. Near the contact between the Dunham and Cheshire formations. Rock is mostly quartzite tending towards "platyness". Shatters easily. Test #1 taken randomly from the south end of outcrop. Material meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
9	1	1964	Quartzite and Dolomite	No	Chip	3.7%	Owner: Frederick Brousseau. A knoll of medium size, with about 15' relief. Knoll is approximately 600' north-south and 100' east-west. Knoll is located north of town road, east of Sta. 3066+00 of proposed Rte. I-89. Rock belongs to the Dunham formation (quartzitic phase). Gray quartzite with veins of quartz. Weathers buff and "platy", although fresh material breaks massive and hard. Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
10	1	1964	Dolomite	No	Chip	4.0%	Owner: Harmon Loomis. A large isolated outcrop, with over 60' relief, located 1235' east of barn. At present, there is no road into area; inaccessible to the east. Outcrop is approximately 250' east-west and 1000' north-south. Test #1

TABLE II (con't)

GEORGIA ROCK DATA SHEET No. 3

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Exist-ing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							taken in northern end of outcrop. Rock is dolomite of the Dunham formation. Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
11	1	1964	Quartzite	No	Chip	4.6%	Owner: Will Adams. A large outcrop with good relief. Located 0.1 mile south of Sta. 3145+50 of proposed Rte. I-89. Rock is a gray, massive quartzite, with occasional veins of quartz. Weathers to a buff color. Breaks hard and in cubes. Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
12	1	1964	Dolomite	No	Chip	4.8%	Owner: Roy Hickok. A very large ridge with good relief. Some large trees, but mostly open. Test #1 is a random sample of the outcrop taken across town road from house. Material is a massive gray dolomite, weathering buff. Many solution fissures on surface. Belongs to the Dunham formation. Acceptable for Item 204, Sub-base of Crushed Rock.

TABLE II
Supplement

GEORGIA PROPERTY OWNERS - ROCK

Map Ident. No.

Adams, Will	11
Bovat, Ralph	8
Brousseau, Frederick	9
Hickok, Roy	12
Loomis, Harmon	10
Pelletier	1
Rainville, Gilles	7
Rhodes, Dr. H. C.	5, 6
Rushford, Jasper	4
Swanton Lime Company	2
Teague, Raymond	3

PARTIAL SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MATERIALS

Listed below are partial specifications for Highway Construction Materials as they apply to this report at date of publication. For complete list of specifications see "Standard Specifications for Highway and Bridge Construction" approved and adopted by the Vermont Department of Highways April, 1964.

Item 105, Granular Borrow:

"Article 105.02 Materials. The granular borrow shall be obtained from approved sources and shall consist of satisfactorily graded, free draining, hard, durable stone and coarse sand practically free from loam, silt, clay, and organic matter.

"The sand portion (material passing the No. 4 screen) shall have not more than ten percent (10%) passing the No. 270 mesh sieve and shall show a color of not more than three and one-half ($3\frac{1}{2}$) as determined by the colorimetric test described in AASHO Method of Test, Designation T-21.

"When used in connection with fine grading or in fills where piling is to be driven, the granular material shall all pass the nine (9) inch square opening screen."

Item 201, Sub-base of Gravel:

"Article 201.02 Materials. The gravel shall consist of material reasonably free from silt, loam, clay or organic matter. It shall be obtained from approved sources and meet the following requirements:

"Not less than forty (40) percent stone shall be retained on No. 4 sieve.

"The percent of wear shall be not more than twenty-five (25) when tested by laboratory methods, using Method AASHO T-4, or more than

APPENDIX I
(cont'd.)

forty (40) when tested by AASHO Method T-96.

"The stone portion of the gravel shall be uniformly graded from coarse to fine and the maximum size particles shall not exceed two-thirds ($2/3$) of the layer being spread.

"The sand portion, when tested by laboratory methods, using Method AASHO T-27, shall meet the grading requirements set up in the following table:

Minimum Percent of Stone	Percent Passing Square Openings No. 100	Percent Passing Square Openings No. 270
40	0-15	0-3
50	0-15	0-4
60	0-15	0-5
70	0-15	0-6

"The sand shall show a color of not more than three and one-half ($3\frac{1}{2}$) as determined by the colorimetric test described in the AASHO Method of Test, Designation T-21."

Item 202, Sub-base of Sand

"Article 202.02 Materials. The sand shall consist of material reasonably free from silt, loam, clay or organic matter. It shall be obtained from approved sources and meet the following requirements:

"The sand, when tested by laboratory methods, using Method AASHO T-27, shall meet the grading requirements set up in the following table:

Square Openings	Percent Passing
$1\frac{1}{2}$ "	95-100
$5/8$ "	80-100
No. 4	70-100
No. 100	0-18
No. 270	0-5

"The sand shall show a color of not more than three and one-half ($3\frac{1}{2}$) as determined by the colorimetric test described in the AASHO Method of Test, Designation T-21."

Item 204, Sub-base of Crushed Rock

"Article 204.02 Materials. The materials for sub-base, filler and sand cushion shall be obtained from approved sources and meet the following requirements:

"A - Crushed Rock. The crushed rock shall be uniformly graded, crusher-run material, free from dirt. The ledge from which this material is obtained shall be stripped and cleaned before blasting. Conical stockpiling or any other method of stockpiling, which causes segregation of aggregates will not be permitted.

"The crushed rock, when tested by laboratory methods using Method AASHO T-27, shall meet the grading requirements set up in the following table:

Square Openings	Percent Passing
4"	95-100
$1\frac{1}{2}$ "	25-50
No. 4	0-15

"The percent of wear shall not be more than eight (8) when tested by laboratory methods, using Method AASHO T-3, or more than forty (40), when tested by AASHO Method T-96."

Item 205, Sub-base of Crushed Gravel

"Article 205.02 Materials.

A - Crushed Gravel. The crushed gravel shall consist of material reasonably free from silt, loam, clay or organic matter. It shall be obtained from approved sources and produced by a crusher adjusted to deliver

APPENDIX I
(cont'd.)

a product uniformly graded from coarse to fine.

"When tested by laboratory methods, using Method AASHO T-27, it shall meet the grading requirements as set forth below:

		Square Openings	Percent Passing
Sub-base of Crushed Gravel	Coarse Graded	4"	100
	Item 205-A	No. 4	25-50
	Fine Graded	1½"	95-100
	Item 205-B	No. 4	30-60

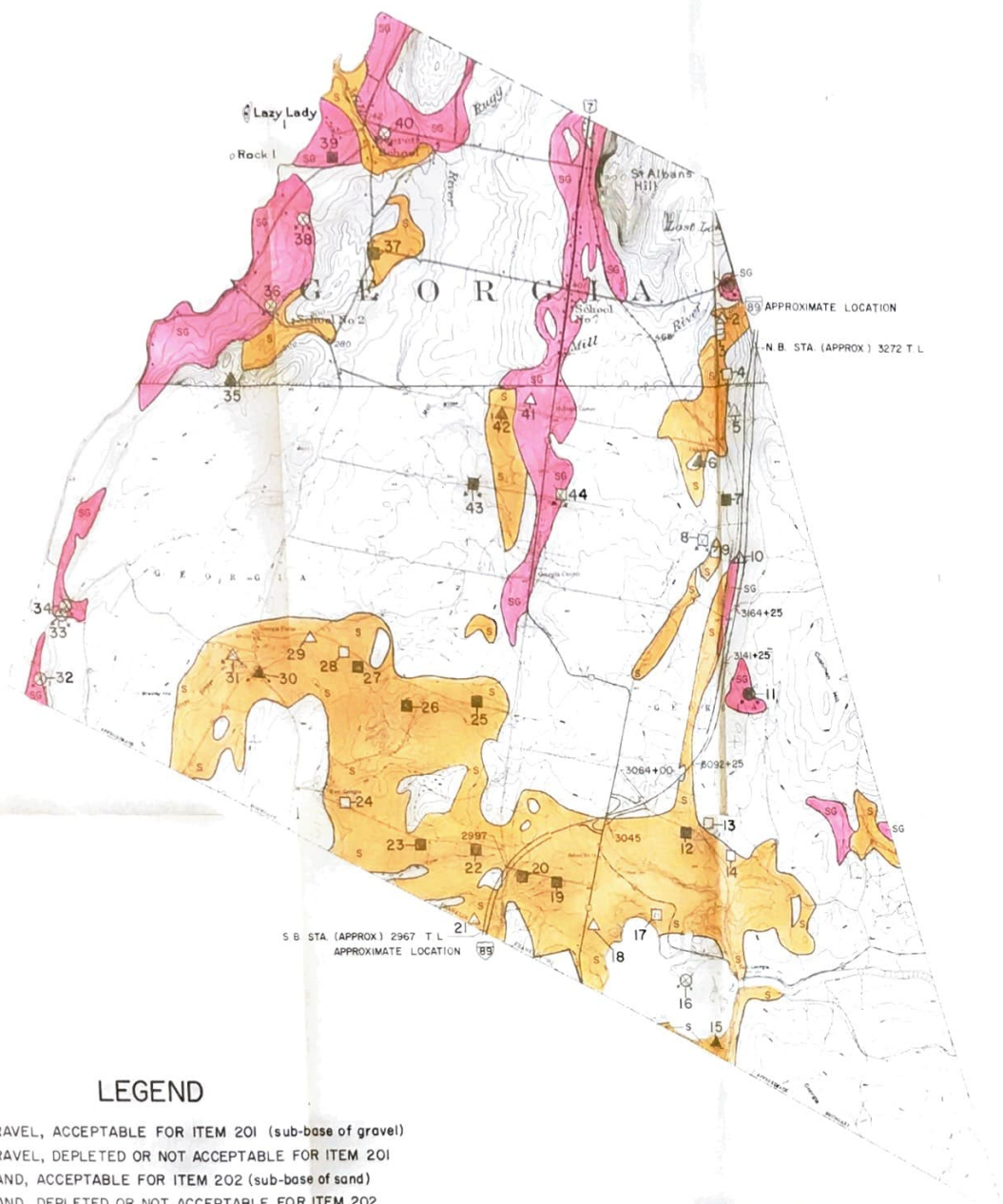
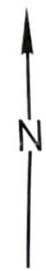
"At least thirty (30) percent by weight of the stone content of the crushed gravel, that is, the material retained on the Number 4 screen, shall have a minimum of one (1) fractured face as determined by actual count from the sample submitted to the laboratory.

"The percent of wear shall not be more than twenty (20) when tested by laboratory methods, using Method AASHO T-4, or more than thirty-five (35), when tested by AASHO Method T-96.

"B - Sand. The sand content of the crushed gravel, that is, the material passing the No. 4 screen, when tested by laboratory methods, using Method AASHO T-27, shall meet the grading requirements set up in the following table:

Square Openings	Percent Passing
No. 100	0-18
No. 270	0-8

"The sand shall show a color of not more than three and one-half (3½) as determined by the colorimetric test described in the AASHO Method of Test, Designation T-21."



LEGEND

- GRAVEL, ACCEPTABLE FOR ITEM 201 (sub-base of gravel)
- GRAVEL, DEPLETED OR NOT ACCEPTABLE FOR ITEM 201
- △ SAND, ACCEPTABLE FOR ITEM 202 (sub-base of sand)
- ▲ SAND, DEPLETED OR NOT ACCEPTABLE FOR ITEM 202
- GRANULAR BORROW, ITEM 105
- MATERIAL NOT ACCEPTABLE FOR ITEM 105
- ✕ EXISTING PIT
- SG SAND & GRAVEL DEPOSIT
- S SAND DEPOSIT
- 3 IDENTIFICATION NUMBER (refer to data sheets)

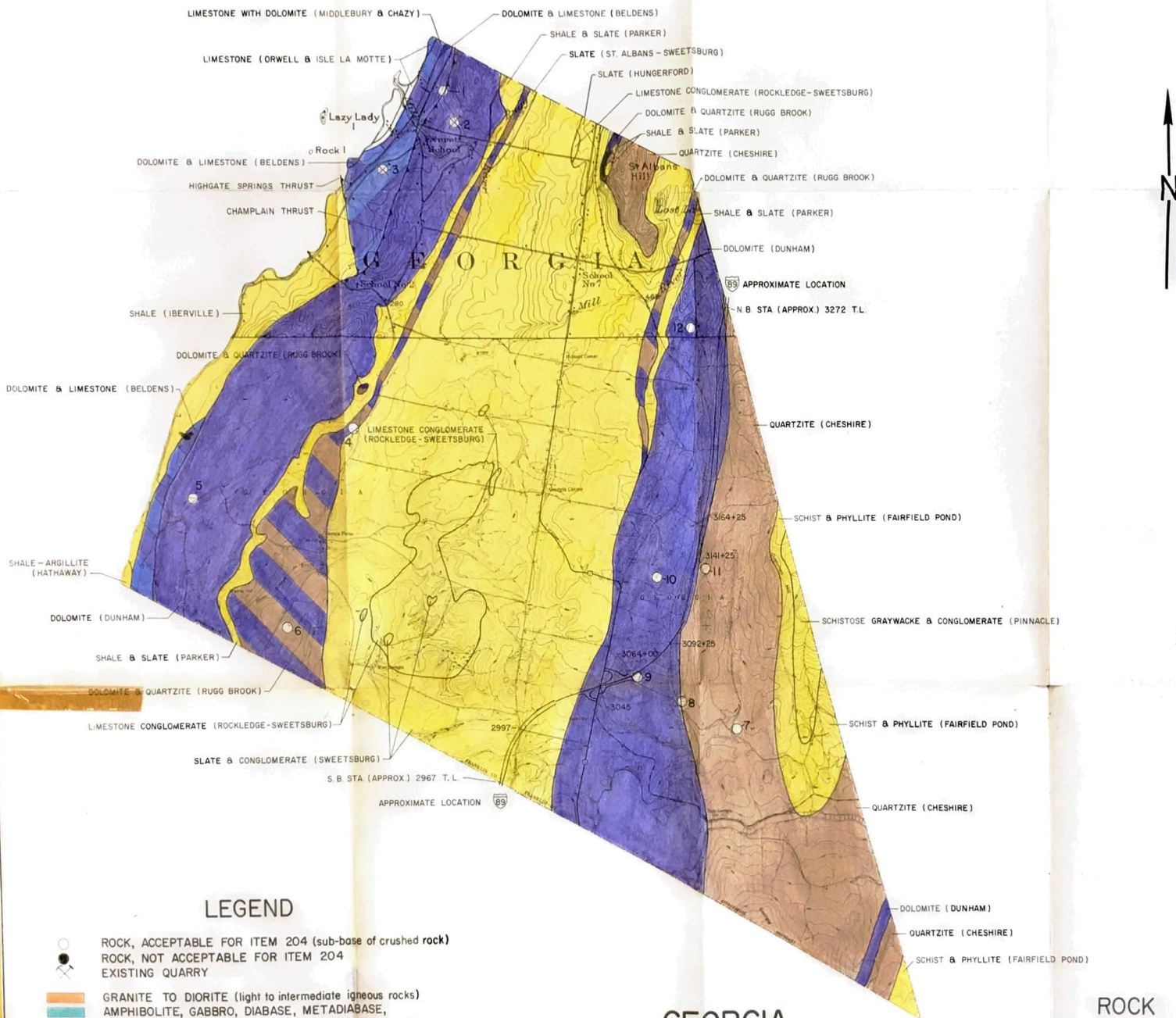
GEORGIA



GRANULAR MATERIALS MAP

BY
VERMONT DEPARTMENT OF HIGHWAYS
IN COOPERATION WITH
U.S. BUREAU OF PUBLIC ROADS

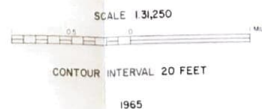
NOTE: BASED ON U.S.G.S. TOPOGRAPHIC MAPS



LEGEND

- ROCK, ACCEPTABLE FOR ITEM 204 (sub-base of crushed rock)
- ROCK, NOT ACCEPTABLE FOR ITEM 204
- EXISTING QUARRY
- GRANITE TO DIORITE (light to intermediate igneous rocks)
- AMPHIBOLITE, GABBRO, DIABASE, METADIABASE, GREENSTONE, TRAP DIKES (basic or dark igneous rocks)
- PERIDOTITE, PYROXENITE, SERPENTINITE (ultra-basic igneous rocks)
- GNEISS
- QUARTZITE
- DOLOMITE
- MARBLE, LIMESTONE
- SCHISTS, SLATES, PHYLLITES, SHALES, CONGLOMERATES
- IDENTIFICATION NUMBER (refer to data sheets)

GEORGIA



ROCK MATERIALS MAP

BY
VERMONT DEPARTMENT OF HIGHWAYS
IN COOPERATION WITH
U.S. BUREAU OF PUBLIC ROADS

NOTE: BASED ON U.S.G.S. TOPOGRAPHIC MAPS

DATE					
BY					