

SURVEY OF HIGHWAY CONSTRUCTION MATERIALS
IN THE TOWN OF CASTLETON, RUTLAND 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

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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 material 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 contractors 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 quadrangles of the United States Geological Survey enlarged 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 Society 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, since 1956, has been mapping the glacial features of the State of Vermont during the summer months. 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 tested 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. It was readily apparent that 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 in the cards varied widely in completeness. Transfer of information from the cards to the Data Sheets was made without elaboration or verification. The locations of the deposits listed in the card files have also been plotted on the maps. However, caution should be exercised wherever this information appears incomplete. Some cards in the file were not used because the information on the location of the deposit was incomplete or unidentifiable. 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.

Location

The town of Castleton is located in Rutland County in the western portion of the State. It is bounded on the north by the town of Hubbardton, on the east by the towns of Pittsford and West Rutland and by Ira Gore, on the south by the town of Poultney, and on the west by the towns of Fair Haven and Benson. It is in the Taconic Mountains, a low range of hills composed mostly of argillaceous rocks such as phyllite, slate and shale.

Elevations vary from less than 300 feet on the Castleton River west of Hydeville to 2210 feet on Bird Mountain in the southeast corner of the township. All drainage, including Bomoseen Lake, is into the Castleton River which is part of the Lake Champlain watershed.

Procedure of 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 reference 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 other individuals are analyzed and the location in which these samples were taken is mapped when 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 over 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 encountered 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 (MSHO T-3). It is 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 should be noted that information on the surface geology rock map is somewhat simplified. (For a more detailed description of the respective rock formations see the summary included in this report.) In the summary it is apparent that all formations within Castleton township are complex metamorphic rocks.

Apart from quartzite outcrops^{to} a limited extent the rock types within the township do not make for good highway construction material. Four rock samples were taken in slate but poor breakage precluded wear testing.

The Zion Hill quartzite member probably has the best potential for materials usage of any of the bedrocks studied. Occurrences are scattered however, and of small areal extent. All outcrops are remote from roads and high up on wooded hill-sides.

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 existing pits, when known are mapped. The locations in which samples were taken by other individuals are noted and mapped when possible.

The second stage of the investigation is begun in the field by making a cursory preliminary survey over 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 submitted to the Highway Testing Laboratory where they are tested for gradation and stone wear, the latter by the Deval Method (AASHO T-4-35).

Discussion of Sand and Gravel Deposits

The granular materials of the township of Castleton are principally of glacial origin. Glaciofluvial deposits include a possible kame located about 1/4 mile northwest of Crystal Beach. Kame terraces are found intermittently along North Brittain Brook. Other kame terraces are located 1/3 mile northeast of the Hyderville race-track, within and west of the town of Castleton, south of the railroad tracks, southwest of the town of Castleton pits and about 2 miles east of the town of Castleton south of U.S. Route #4. A kame moraine occurs along U.S. Route #4 from the C.R. Beach pit east to the Ira Gore townline.

Several areas of glaciolacustrine sand deposits occur within the township. One of these extends from Hyderville to Castleton with an extension north from

Castleton Corners to Bomoseen. Another is situated from Fair Haven townline through Blissville and thence, northeast around Parker Hill.

In addition, small areas of sand are located variously along Lake Bomoseen at West Castleton, in the marsh near Rabbit Island, on both sides of the Float Bridge, Crystal Beach and along a bay midway between Float Bridge and Crystal Beach.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF CASTLETON

Mount Hamilton Formation

White weathered black gray, green, purple, and red hard slates, some interbedded with thin cherty appearing quartzites and ribbon limestones a few inches apart; smooth, soft red slate; beds of ankeritic quartzite a few inches to several feet thick, locally containing layers of edgewise conglomerate; and a polymict conglomerate.

West Castleton Formation

Gray to black, siliceous, carbonaceous and pyritiferous slate containing paper-thin sandy laminae. A blue-gray weathered black limestone is near the base of it in a few places.

Saint Catherine Formation

Subdivisions occurring in the Town of Castleton:

Zion Hill Quartzite Member

White weathered green, vitreous chloritic quartzite and graywacke spotted with limonite.

Bomoseen Graywacke Member

Green to olive-colored arkose and graywacke that weathers pale-red to white; contains visible flakes of mica and rock fragments.

Mettawee Slate Facies

Purple and green slate and phyllite, fine to silty. In the higher hills immediately north of the Castleton River and east of North Brittain Brook, the rock is a monotonous mass of siltstone with poor development of "cleavage banding". Colors here are subdued, giving the rock a bleached appearance.

GLOSSARY OF SELECTED GEOLOGIC TERMS

ARKOSE

A special variety of sandstone containing more than 25 or 30 percent of feldspar and usually derived from the disintegration of granite or other acid rocks of granular texture.

CONGLOMERATE

The consolidated equivalent of gravel. The constituent rock and mineral fragments may be of varied composition and of a wide size range. The matrix of finer materials between the larger fragments may be sand, silt, or any of the common natural cementing materials such as calcium carbonate, silica, clay or iron oxide.

GLACIOFLUVIAL

A term used to denote formation by or relation to streams within, upon or emerging from glacial ice.

GLACIOLACUSTRINE

A term used to denote formation by or pertaining to deposition in quiescent waters of glacial lakes.

GRAYWACKE

A gray, green, or darker-colored hard sandstone composed of angular grains of quartz, feldspar and a variety of rock and mineral fragments embedded in a compact matrix having the composition of clay-slate.

KAME

A conical hill of stratified drift, deposited in contact with glacial ice by streams flowing in or on the ice.

KAME MORaine

An accumulation of material deposited directly from the frontal portion of the glacial ice and partially sorted by water action. Deposits may take the form of coalescent knolls, hummocks, ridges, etc.

KAME TERRACE

An accumulation of stratified drift laid down by streams between a glacier and an adjacent valley wall.

LIMESTONE

A bedded sedimentary deposit consisting chiefly of calcium carbonate. The most important and widely distributed of the carbonate rocks. The percentage of calcium carbonate ranges from 40 percent to more than 90 percent. Common impurities are clay and sand.

METAMORPHIC ROCKS

Rocks that owe their distinctive characters to the transformation of pre-existing rocks, either through intense heat or pressure or both.

PHYLLITE

A fine-grained foliated metamorphic rock intermediate between the mica schists and slates, into which it may grade. Here foliation is made possible by the development of a large amount of potash mica, sericite, which also gives the rock a distinctive silvery appearance.

QUARTZITE

A compact metamorphic rock composed of quartz grains so firmly cemented that fracture takes place across them and cementing material with equal ease.

SILTSTONE

A rock composed of somewhat indurated silt. If possessed of bedding cleavage approximately parallel to bedding it is a shale.

SLATE

A very fine-grained homogenous metamorphic rock which splits smoothly along parallel cleavage planes and yields roughly similar slabs.

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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

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
1½"	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 (3½) 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
1½"	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."

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 1

Map 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				
1	1A	1964	0-5	Stripped	Yes	62.1	46.1	30.1	5.0	1.75	1 1/2	24.0%	Gravel	Owner: Castleton Development Commission Twin pits east of Crystal Beach-Lake Domoseen. Dimensions of first pit are 50' east-west by 60' north-south. Test #1 taken in floor of first pit. 0-1' medium gravel, 1'-3' coarse gravel, 3'-5' medium gravel, 5'-10' medium sand and stones. Test #1A represents upper 5'. Acceptable for Items 201 and 105.
	1B	1964	5-10	----	Yes	100	100	93.8	22.0	2.5	1	----	Gran. Borrow (Sand)	Test #1B represents lower sand portion of ledge. Materials has a few stones and an occasional very thin layer of silt. Rejected for Item 202. Has slight excess passing No. 100 mesh sieve.
	2	1964	1-10	0-1	Yes	96.0	86.4	71.0	16.0	3.5	1	----	Sand	Test #2 taken in ridge between pits. Southernmost pit is 50' east-west by 30' north-south. Ridge is 40' north-south. Test #2 represents faces of both pits. Material is a pebbly sand; tested it for both sand and gravel. Rejected for Item 201, on gradation. Acceptable for Items 202 and 105. Area is limited on east by road.
2	1	1964	0.5-6.5	0-0.5	No	100	94.0	82.8	31.0	7.0	3	----	Gran. Borrow	Owner: Francis Frenette A large area of fields on both sides of Hubbardton Road.

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 2

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis % Passing					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VMD Spec.	Remarks																		
						1 1/2"	5/8"	#4	#100	#270																						
	2	1964	1-6	0-1	No	100	-	100	70.3	60.6	1.5	----	----	<p>Test #1 taken 150' north of "pits"; actually small depressions in ground. Material is a fine silty clay, very hard digging. Acceptable for Item 105.</p> <p>Test #2 taken 245' north of Test #1, on same knoll. Material is till, rejected for Item 105. Sample run by Soils Laboratory Sieve Analysis:</p> <table> <tr> <td>% Passing</td> <td>(Total Sample)</td> </tr> <tr> <td>3/4"</td> <td>100.0</td> </tr> <tr> <td>3/8"</td> <td>94.0</td> </tr> <tr> <td>No. 4</td> <td>88.0</td> </tr> <tr> <td>No. 10</td> <td>81.7</td> </tr> <tr> <td>No. 40</td> <td>70.6</td> </tr> <tr> <td>No. 100</td> <td>61.9</td> </tr> <tr> <td>No. 200</td> <td>54.6</td> </tr> <tr> <td>No. 270</td> <td>53.3</td> </tr> </table>	% Passing	(Total Sample)	3/4"	100.0	3/8"	94.0	No. 4	88.0	No. 10	81.7	No. 40	70.6	No. 100	61.9	No. 200	54.6	No. 270	53.3
% Passing	(Total Sample)																															
3/4"	100.0																															
3/8"	94.0																															
No. 4	88.0																															
No. 10	81.7																															
No. 40	70.6																															
No. 100	61.9																															
No. 200	54.6																															
No. 270	53.3																															
	3	1964	1-5.5	0-1	No	71.0	--	100	62.6	51.7	1 1/2	----	----	<p>Soil Type is A-4</p> <p>Test #3 taken at lower level of knoll, west of farm buildings. Material is till, rejected for Item 105. Sample run by Soils Laboratory Sieve Analysis:</p> <table> <tr> <td>% Passing</td> <td>(Total Sample)</td> </tr> <tr> <td>1 1/2"</td> <td>71.0</td> </tr> <tr> <td>1"</td> <td>71.0</td> </tr> <tr> <td>3/4"</td> <td>67.9</td> </tr> <tr> <td>3/8"</td> <td>62.5</td> </tr> <tr> <td>No. 4</td> <td>57.2</td> </tr> <tr> <td>No. 10</td> <td>51.3</td> </tr> <tr> <td>No. 40</td> <td>42.1</td> </tr> </table>	% Passing	(Total Sample)	1 1/2"	71.0	1"	71.0	3/4"	67.9	3/8"	62.5	No. 4	57.2	No. 10	51.3	No. 40	42.1		
% Passing	(Total Sample)																															
1 1/2"	71.0																															
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3/4"	67.9																															
3/8"	62.5																															
No. 4	57.2																															
No. 10	51.3																															
No. 40	42.1																															

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 3

Map 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 (Continued) % Passing (Total Sample) No. 100 35.8 No. 200 30.6 No. 270 29.6 Soil Type is A-2-4	
	4	1964	1.5-8	0-1.5	No	59.3	44.2	33.3	8.0	2.75	1 1/2	27.6%	Gran. Borrow (Grav.)	Test #4 taken on opposite side of road, in large field northeast of barn, 115' north of drainage channel. Material is gravel, with water at 8'. Rejected for Item 201. Has high abrasion. Acceptable for Item 105.
	5	1964	1-6	0-1	No	65.5	53.3	39.4	4.0	2.0	3	----	Gran. Borrow (Grav.)	Test #5 taken 430' northeast of Test #4, close to brook. Gravelly material, meets grading requirements for Item 201, but insufficient stones for abrasion test. Acceptable for Item 105.
	6	1964	0.5-9.5	0-0.5	No	69.2	51.6	34.5	11.0	4.0	2	26.5%	Gran. Borrow (Grav.)	Test #6 taken 450' northwest of Test #5. Material is finer than Test #5. Rejected for Item 201. Abrasion is high. Acceptable for Item 105.
	7	1964	1-6	0-1	No	100	--	100	36.5	25.5	3 1/2	----	----	Test #7 taken at foot of large knoll. Material is till, with gravel and water bottom. Rejected for Item 105. Sample run by Soil Laboratory Sieve Analysis:
						*Percentage of Total Sample								

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 4

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHM Spec.	Remarks
						% Passing	#10	5/30	#4	#100				
													% Passing (Total Sample) 1/2" 100.0 3/8" 90.3 3/4" 75.4 No. 4 59.7 No. 10 45.6 No. 40 31.9 No. 100 21.0 No. 200 16.0 No. 270 15.2 Soil type is A-1-b	
	3	1964	0.5-9	0-0.5	No	56.0	43.5	29.6	8.0	1.5	1	26.5%	Gran. Barrow (Grav.) Test #1 taken 45' west of brook, 150' south-east of barn, in field south of drainage channel. Gravelly material, rejected for Item 201, has high abrasion. Acceptable for Item 105.	
3	1	1964	--	--	No	NOT SAMPLED					--	----	Owner: Frank Woodbury A large field with rolling knolls, just west of Hubbard-ton road. Test #1 taken 160' west of road. Hit ledge at 2', no sample taken.	
	2	1964	--	--	No	NOT SAMPLED					--	----	Test #2 taken 360' south of Test #1, 30' west of 24" apple tree. Hit ledge at 2' here, also. No sample was taken.	
	3	1964	2-9	0-1	No	60.1	52.7	31.7	14.0	5.0	1 1/2	23.1%	Gran. Barrow (Grav.) Test #3 taken in long, oval shaped field, 230' west of brook, 170' south of wood-line. This entire area is 100' west of field which includes Test #1 and Test	

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 5

Map 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				
4	1964	1-8	0-1	No	74.2	61.8	38.0	21.0	6.0	1	----	Gran. Borrow (Grav.)	No. 2. Material is gravelly with flat, elongated, clean stones. Water at 9'. Rejected for Item 201. Abrasion is high. Acceptable for Item 105. Test #4 taken 315' south of Test #3, 100' east of hedge-row, Material similar to Test #3, but sandier (a few large elongated flat stones). Clay on bottom. Rejected for Item 201. Has excesses passing No. 100 and No. 270 mesh sieves. Acceptable for Item 105. Insufficient proper size stone for the Percent of Wear Test.	
5	1964	1-5	0-1	No	73.9	62.2	49.0	12.0	3.5 1.7*	2	23.2%	Gran. Borrow (Grav.)	Test #5 taken 450' south of Test #4, in same field. Material is stones embedded in a claymatrix, water pouring in at 5' depth. Rejected for Item 201. Has high abrasion. Acceptable for Item 105.	
6	1964	2.5-9	0-1	No	92.8	74.5	51.1	10.0	3.3	2 1/2	26.1%	Gran. Borrow (Grav.)	Test #6 taken in farthest field west of Hubbardton Road. Material from 0-1' overburden, 1'-2.5' silt, 2.5'-7' silty gravel, 7'-9' gravel. Sampled 2.5'-9'. Rejected for Item 201. Abrasion is high. Has slight excess passing No. 270 mesh sieve. Acceptable for Item 105.	
7	1964	1-9	0-1	No	80.7*	--	100	79.7	59.1	1	----	----	Test #7 taken 45' west of	

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 6

Map 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				
														<p>dense swamp growth. Material is silty clay, with very fine clay at 9'. Rejected for Item 105. Sample run by Soils Laboratory Sieve Analysis:</p> <p style="text-align: right;">% Passing (Total Sample)</p> <p>3" 100.0</p> <p>1 1/2" 80.7</p> <p>3/4" 80.7</p> <p>3/8" 76.4</p> <p>No. 4 74.4</p> <p>No. 10 71.4</p> <p>No. 40 65.0</p> <p>No. 100 59.3</p> <p>No. 200 47.3</p> <p>No. 270 44.0</p> <p>Soil Type is A-4.</p>
8	1964	0.5-5.5	0-0.5	No	61.5	50.9	36.0	9.0	3.5	3 1/2	----	Gran. Borrow	<p>Test #8 taken in field west of Test #3 and east of Test #7. (Grav.) Material is stones, with silt; gravel & silt in the bottom. Meets grading requirements for Item 201, but insufficient proper size stone for Percent of Wear Test. Acceptable for Item 105.</p>	
9	1964	1-8	0-1	No	100	100	76.7	59.0	25.0	3	----	----	<p>Test #9 taken 600' north of Test #8. Material is silt to clay with a few stones. Boulders are in evidence throughout area. Rejected for Item 105. Has excess passing No. 270 mesh sieve.</p>	
4	1	1964	1.5-9.5	0-1.5	No	100	100	63.1	40.0	6.5	2 1/2	----	Gran. Borrow	<p>Owner: Cecil Ducharme</p> <p>A large field west of knoll in Map Ident. No. 5. Test #1 taken</p>

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 7

Map 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	#10	#20	#40	#60				
													on rise in field, north of farm road. Material is silt and stone acceptable for Item 105.	
5	1	1964	1-10	0-1	No	100	100	60.4	25.0	6.5	1	----	Gran Borrow	Owner: Cecil Ducharme A large knoll, west of house and barn, extending north-south. Test #1 taken in northwest end, at base of knoll, 20' east of farm road. Material is flat, shaly stones in a silty matrix, ledge at 10'. Acceptable for Item 105.
	2	1964	1-7.5	0-1	No	100	100	80.0	28.0 22.4*	7.0 5.6*	1	----	Gran. Borrow	Test #2 taken 250' east of Test #1, on top of knoll, 350' north of south end of knoll. Material is silty, with a few stones. Acceptable for Item 105.
	1	1964	1-6	0-1	No	100	100	55.0	26.0	8.3	1	----	Gran. Borrow	Owner: Cecil Ducharme A knoll and fields, just east of Hubbardton Road, opposite knoll of Map Ident. No. 5. Test #1 taken on top of knoll, 225' north of property fence. Material is till, very hard-packed. Acceptable for Item 105.
	2	1964	1-7	0-1	No	100	100	77.6	30.0	6.3	1	----	Gran. Borrow	Test #2 taken in field north-east of knoll, Material is till, acceptable for Item 105.
	3	1964	1-6	0-1	No	100	100	83.4	23.0	8.0	1	----	Gran. Borrow	Test #3 taken in field west of Test #2, north of knoll. Material is similar to previous tests hard-packed silt. Acceptable for Item 105.
	1	1964	1-7	0-1	Yes	85.7	68.5	47.5	13.0	6.0	3	24.0%	Gran.	Owner: Dewey Balch

*Percentage of Total Sample

CASTLETON GRANULAR DATA SHEET NO. 8

Year	Depth of Field Sample Tested (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis					Color ASTM T-21	Abrasion ASTM T-4-35	Passes VHD Spec.	Remarks
				% Passing								
				1 1/2"	5/8"	#4	#100	#270				
1964	0.5-8	0-0.5	Yes	72.8	59.8	44.8	11.0	2.5	1	21.0%	Gravel	A large field with knolls, with small pits on north and south ends. Only entrance was an impassable bridge; (took handshovel samples). Test #1 taken in southern pit, in south face. Pit is grown over and sloughed in. Dimensions are 50' east-west by 100' north-south. Material is silty gravel going into fine gravel. Rejected for Item 201. Has excess passing ilo. 270 mesh sieve. Acceptable for Item 105. Test #2 taken in northern pit, in north face. Material is gravel, (with silty matrix); coarser at top. Extension possibilities lie to the north. Acceptable for Items 201 and 105.
1964	1-5.5	0-1	Yes	95.7	89.9	64.2	27.0	8.0	1	----	Gran. Borrow (Grav.)	Owner: Robert Cornwall A large area on top of hill, containing a pit. Road north of pit leads to Grandpa Knob (a height of 1976'). Test #1 taken in south end of pit, in floor. 0-1' overburden, 1'-5' bands of pebbly sand, fine sand and coarse gravel, 5'-6' clay. Rejected for Item 201. Contains only 35.0% stone. Has excess passing ilo. 100 and No. 270 mesh sieves. Insufficient proper size stone for abrasion test. Acceptable for

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 9

Map 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	Yes	65.7	53.8	36.8	10.0	1.5	1 1/2	20.8%	Gravel	Item 105. Test #2 taken northeast of Test #1, 60' east of pit. Represents logical extension of pit. Material is intermittent layers of pebbly sand and "dirty gravel" with a fair amount of stones. Acceptable for Items 201 and 105.
9	1	1964	0.5-8.5	0-0.5	No	100	100	63.2	31.0	4.0	1	----	Gran. Borrow	Owner: A. and H. Agency (Mr. Peter Altrui). A large field with knolls to the north. Test #1 taken in field above barn, 65' north of brow of hill. Material is till, acceptable for Item 105.
	2	1964	1-6	0-1	No	100	100	91.6	35.0	6.0	2	----	Gran. Borrow	Test #2 taken 715' northeast of Test #1. Material is still till, acceptable for Item 105.
	3	1964	5-9	0-0.5	No	87.6	79.5	56.1	8.0	2.0	1	----	Gran. Borrow	Test #3 taken in field northwest of Test #2, (approximately 0.4 mile northwest of Test #2), on knoll. Material is on the fine side. 0-0.5' overburden, 0.5'-3.5' gravel, 3.5' - 5' sand, 5'-9' gravel (sampled). Insufficient proper size stone for abrasion test. Acceptable for Item 105.
10	1	1964	1-6	0-1	Yes	76.7	70.6	54.8	4.0	1.5	2	----	Gran. Borrow	Owner: Dewey Balch A small pit and knoll adjoining, alongside Hub-
						* Percentage of Total Sample								

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 10

Map Ident. No.	Field Test No.	Year	Depth of Field Sample Tested (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	1-12	0-1	Yes	81.0	67.8	45.3	11.0	2.5	1	25.2%	Gran. Borrow (Grav.)	bardton Road and junction of Belgo Road. Test #1 taken on knoll, 100' north of pit, 50' east of brow of slope. Material is fine gravel, with till and ledge at 6'. Insufficient proper size stone for abrasion test. Acceptable for Item 105. Test #2 taken in north face of pit. Pit dimensions are 100' by 150' ledge in floor of pit. Material is "dirty" gravel, barely rejected on abrasion for Item 201. Acceptable for Item 105.
11	1	1964	0.5-9.5	0-0.5	Yes	95.2	83.1	59.6	7.0	2.3	1	18.4%	Gravel	Owner: Frank ELLIS A field and old pit east of house and barn, off Hubbardton Road. Pit (filled with junk) is at the end of a long sinous ridge resembling an esker. Test #1 taken 25' west of pit, on knoll. Material is gravel, with small, pebbly stones. Acceptable for Items 201 and 105.
	2	1964	1-10.5	0-1	No	96.8	85.5	57.2	17.0	6.5	1	----	Gran. Borrow (Grav.)	Test #2 taken 145' west of Test #1 on knoll. Material is "fine" gravel, rejected for Item 201. Has excess passing No. 100 and No. 270 mesh sieves. Insufficient proper size stone for abrasion test. Acceptable for Item 105.

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 11

Map 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				
	3	1964	0.5-10	0-0.5	No	96.4	80.0	56.5	11.0	3.0	1	18.0%	Gravel	Test #3 taken on western-most end of ridge, on knoll, 180' west of Test #2. Material is gravel, similar to Test #1, with small sized stones. Acceptable for Items 201 and 105.
	4	1964	1.5-7.5	0-1.5	No	85.4	70.7	43.6	15.0	4.5	3	27.4%	Gran. Borrow (Grav.)	Test #4 taken in flat, south of ridge. Apparently out of the better material here. Material is "dirty" gravel, with ledge at 75'. Rejected for Item 201. Has high abrasion. Also, has excess passing No. 270 mesh sieve. Acceptable for Item 105.
12	1	1964	1-8	0-1	No	73.4	60.1	34.3	6.0	1.8	1	21.4%	Gravel	Owner: John Scrafford A large field across road from houses and north of brook. Western half of field has different property owner (see Area #13). Test #1 taken in south end of field. Material is gravel with water at 5'. A little on the "dirty" side, but acceptable for Items 201 and 105.
	2	1964	1-8	0-1	No	65.2	50.0	28.0	3.0	1.3	3 1/2	23.2%	Gran. Borrow (Grav.)	Test #2 taken 235' north of Test #1, 40' south of road and 200' east of an 18" elm tree. Material here is coarse gravel, with water in bottom. Had to quit digging-kept sloughing in. Many stones

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 12

Cont. 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 AASHTO Spec	Remarks
						1 1/2"	5/8"	#4	#100	#270				
													Over 6" not included in sample. Rejected for Item 201. Has high abrasion. Acceptable for Item 105.	
3	1	1964	1.5-9.5	0-1.5	Yes	74.6	59.7	39.7	4.0	1.3	1	20.6%	Gravel	Owner: Alton and Mary Nichols A small pit between roads at junction of roads, and field south of Hubbardton Road. Test #1 taken small field above pit, 10' from edge, and 80' south of other road. Material is gravel (on dirty side, but contains nice rounded stones). Acceptable for Items 201 and 105.
	2	1964	0.5-3	0-0.5	Yes	86.8	72.6	45.7	4.0	1.5	1 1/2	23.6%	Gravel	Test #2 taken in pit floor, near stockpile of washed gravel. Material from 0.5'-3' is gravel, from 3'-6', silt to clay and ledge. Acceptable for Items 201 and 105.
	3	1964	0.5-6	0-0.5	No	59.1	42.0	29.2	7.0	2.0	2	19.0%	Gravel	Test #3 taken in western portion of field across road from house. Eastern portion of field described in Area #12. Test #3 taken 90' from west end of field, 67' south of road. Material is gravel, acceptable for both Items 201 and 105.
14	1	1964	1.8	0.1	Yes	65.6	55.6	32.3	11.0	4.25	1	25.6%	Gran. Borrow (Grav.)	Owner: Eugene Pelletier A medium-sized pit, across road and north from main pits.

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 13

Map 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
						% Passing								
						1½"	5/8"	#4	#100	#270				
	2	1964	0-2.5	Stripped	Yes	97.0	39.6	65.1	16.0	3.0	1	----	Gran. Borrow (Grav.)	175' by 65'. Also includes a large field 'terrace', a long-side road and above brook. Test #1 taken in field 50' east of pit 90' west of road. Coarse 'bony' material on top, in a 'dirty' matrix. Finer material with depth. Barely rejected for Item 201. Has slightly high abrasion. Acceptable for Item 105. Test #2 taken in floor of pit, 0-2.5' sandy gravel, 2.5' water and sand, kept sloughing in. Had to quit digging. Rejected for Item 201. Has excess passing No. 4 screen. Insufficient proper-size stone for abrasion test. Acceptable for Item 105.
	3	1964	1-14	0-1	Yes	90.1	77.5	54.8	15.0	3.0	1	20.4%	Gravel	Test #3 taken in east face of pit, 30' east of Test #2. Log of test #3: 0-1' overburden, 1'-14' gravel (small stones) 14'-16' sand. Sampled gravel portion-acceptable for Items 201 and 105.
	4	1964	1-7	0-1	No	75.3	54.0	34.7	6.0	3.25	1½	27.5%	Gran. Borrow (Grav.)	Test #4 taken in south end of field, 425' south of Test #1 55' north of road into pit. 0-1' overburden. 1'-7' gravel, 7'-9' sand to silt. Rejected for Item 201. Percent of wear is high. Acceptable for Item 105.

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 13 B

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1/2"	5/8"	#4	#100	#270				
15	1	1964	0-25	Stripped	Yes	100	100	96.6	16.0 15.5	4.8 4.6*	1	----	Sand	Owner: Eugene Pellet A series of large pi extensively. Across road and sout #14. Test #1 taken in sc of pit nearest barn. Represents 25' (cont page 14.)

* Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 14

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
2	1964	0-9.5	Stripped	Yes	89.8	76.7	54.4	4.0	1.0	1	----	Gran. Borrow (Grav.)	face, taken randomly. Material has bands of pebbly sand, silt, fine sand, and coarse sand. Acceptable for Items 202 and 105. Test #2 taken in floor of pit near Test #1. Material is gravelly, rejected for Item 201. Insufficient stone for the abrasion test. Acceptable for Item 105. Test #3 taken in floor of second "pit" or level, 5' north of face of pit. Material is sand, rejected for Item 202. Has excess material passing No. 100 and No. 270 mesh sieves.	
3	1964	0-9	Stripped	Yes	100	100	100	34.0 34.0*	5.3 5.3*	1	----	Gran. Borrow (Sand)	Test #4, taken on knoll east of pit, 80' east of road leading to upper pit, 160' west of 24" pine tree at foot of knoll. Material is sandy, but rejected for Item 202. Has excess passing No. 100 mesh sieve. Acceptable for Item 105.	
4	1964	1-9.5	0-1	No	100	100	94.8	25.0 23.7*	5.0 4.7*	2 1/2	----	Gran. Borrow (Sand)	Test #5 taken 500' south of Test #4, on knoll, 35' east of smaller pit, 90' west of 30" oak tree near fence. 0-1' overburden, 1'-4.5' red gravel, 4.5'-9.5' silt to sand. Took 2 samples. Test #5A represents gravel portion. Rejected for Item 201. Has excesses passing No. 100 and No. 270 mesh sieve.	
5A	1964	1-4.5	0-1	No	66.8	61.2	46.9	16.0	6.0	2	----	Gran. Borrow (Grav.)		

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 15

Map Ident. No.	Field Test No.	Year	Depth of Field Sample (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis					Color (ASTM T-21)	Abrasion (ASTM T-4-35)	Passes (VHD Spec.)	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	5B	1964	4.5-9.5	--	No	100	100	96.2	67.0 64.5*	12.0 11.5*	2	----	----	Insufficient proper-size stone for Percent of Wear test. Acceptable for Items 105. Test #5B represents sandy portion. Rejected for both Items 202 and 105. Has excesses passing No. 100 and No. 270 mesh sieves.
	6A	1964	0-4	Stripped	Yes	100	100	100	75.0 75.0*	18.0 18.0*	1 1/2	----	----	Test #6 taken in east face of southernmost pit (west of knoll in which Tests #4 and #5 were taken). Stripped, 0-4' silt to sand, 4'-13' pebbly sand, 13'-21' fine sand. Test #6A represents upper sandy portion. Rejected for both Items 202 and 105. Material is too fine.
	6B	1964	4-13	----	Yes	100	96.1	74.3	2.0 1.5*	1.0 0.7*	1	----	Sand	Test #6B represents middle portion, 4'-13' pebbly sand acceptable for Items 202 and 105.
	6C	1964	13-21	----	Yes	100	100	97.5	39.0 38.0*	10.3 10.0*	1	----	----	Test #6C represents lower portion, 13'-21' fine sand, rejected for both Items 202 and 105. Has excesses passing #100 and #270 mesh sieves.
	7	1964	0-10	Stripped	Yes	100	100	90.4	51.0 46.1*	12.5 11.3*	1	----	----	Test #7 taken in floor of pit west of Test #5 and knoll. Log of Test #7: Stripped 0-4' pebbly sand, 4'-10' fine sand. Rejected for both Items 202 and 105. Has excesses passing #100 and 270 mesh sieves.

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 16

Map Ident. No.	Field Test No.	Year Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color MSHO T-21	Abrasion MSHO T 4 35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	8	1964	0-10	Stripped	No.	100	100	76.4	27.0	4.3	1	--	Gran. Borrow (Sand)	Test #8 taken on ridge above southernmost pit (Test #7) Material is sandy, ranging from silty to pebbly in places. Rejected for Item 202. Has excess passing No. 100 mesh sieve. Acceptable for Item 105.
	9	1964	0.5-9	0-0.5	Yes	100	100	93.0	23.0	4.0	1	----	Gran. Borrow (Sand)	Test #9 taken on knoll south of pits. Material is acceptable for Item 105.
16	1	1964	0.5-8	0-0.5	No	85.5	74.8	39.7	6.0	2.5	2	22.3%	Gravel	Owner: North Meadows Corporation A large area of knolls across U.S. Route 4 from pit. Test #1 taken 15' south of treeline, 260' north of house. Material is gravel, acceptable for Items 201 and 105.
	2	1964	1-8	0-1	No	66.0	50.5	28.0	7.0	2.0	1	24.2%	Gravel	Test #2 taken 120' northwest of Test #1. Material is gravel, coarser than Test #1. Acceptable for Items 201 and 105.
	3	1964	0.5-8	0-0.5	No	84.1	60.7	27.7	10.0	3.25	2	22.2%	Gravel	Test #3 taken in northernmost field, 125' east of fence, 375' northwest of Test #2. Material is gravel, acceptable for Items 201 and 105.
	4	1964	1-4	0-1	No	66.5	53.7	41.3	16.0	6.0	1	----	Gran. Borrow (Grav.)	Test #4 taken in southwest corner of field (off the knolls) 0-1' overburden, 1'-4' "dirty" gravel, 4'-9.5' silt. Rejected for Item 201. Has excesses passing No. 100 and No. 270 mesh sieves. Insufficient proper-size stone for abrasion test.

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 17

Map Ident. No.	Field Test No.	Year	Depth of Field Sample Tested (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				
	5	1964	1-8	0-1	No	100	100	79.0	31.0	7.0	1	----	Gran. Borrow	Acceptable for Item 105. Test #5 taken in large knoll northeast of house, 30' west of stonewall. Silt to clay is the material, (with an occasional stone). Acceptable for Item 105.
	6A	1964	0.5-6.5	0-0.5	No	--	--	39.5	3.0	1.5	1	23.8%	Gravel	Test #6 taken in field north of Tests #1 and #2, on knoll. 0-0.5' overburden, 0.5'-6.5' fine gravel, 6.5'-9.5' coarse sand. Took two samples. Test #6A represents upper gravel portion. Acceptable for Items 201 and 105.
	6B	1964	6.5-9.5	----	No	100	100	85.4	3.0 2.6*	1.0 0.9*	1--	----	Sand	Test #6B represents lower, sand portion. Acceptable for Items 202 and 105.
17	1	1964	0-5	Stripped	Yes	89.0	62.7	12.6	11.0	6.75	1	14.8%	Gran. Borrow (Grav.)	Owner: Bird's Eye Mountain Corporation. A small pit 155' east-west by 65' north-south alongside U.S. Route 4. Some extension left to the northwest. Test #1 taken in floor of pit. Gravel for 5' goes into water and clay at 5'. Rejected for Item 201. Has excess passing No. 270 mesh sieve. Acceptable for Item 105.
	2	1964	0.5-10	0-0.5	Yes	69.1	50.7	25.4	20.0	10.0	3 1/2	17.9%	Gran. Borrow (Grav.)	Test #2 taken in northwest face of pit. Material is "dirty" gravel, finer material in center, going back into coarser material at

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 18

Map 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				
														bottom of hole. Rejected for Item 201. Has excesses passing No. 100 and No. 270 mesh sieve. Acceptable for Item 105.
18	1	1964	0-5.5	Stripped	Yes	100	100	94.9	6.0 5.7*	2.8 2.7*	1	----	Sand	Owner: Joseph Carrara A large pit (125' by 325') north of U.S. Route 4, west of trailer park. Test #1 taken in floor of pit. Material is coarse sand, with water at 5'. Acceptable for Items 202 and 105.
	2	1964	0-10	Stripped	Yes	85.5	61.6	38.5	14.0	6.75	2	19.2%	Gran. Borrow (Grav.)	Test #2 taken in north face of pit. Material is coarse gravel, rejected for Item 201. Has excess passing No. 270 mesh sieve. Acceptable for Item 105.
	1	1964	0-7	Stripped	Yes	62.4	59.8	38.5	5.0	1.0	1	19.6%	Gravel	Owner: Joseph Carrara (Old Barker Pit) A large pit, used extensively in past, (295' north-south by 365' east-west). Test #1 taken in floor at east end of pit. Gravel with water at 3'. Material is not as coarse below water level. Acceptable for Items 201 and 105.
	2	1964	0-12	Stripped	Yes	79.2	61.7	35.9	9.0	5.0	2	19.7%	Gravel	Test #2 taken in south face of pit. This is the only direction in which there are any extension possibilities. Material is coarse gravel, acceptable for Items 201 and 105.
20	1	1964	0.5-5	0-0.5	No	89.5	65.4	36.8	7.0	4.0	2	18.6%	Gravel	Owner: Robert Traverse Large fields off U.S. Route 4. Test #1 taken in semi-wooded area alongside farm road.

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 19

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color MASHO T-21	Abrasion MASHO T-4-35	Passes VIID Spec.	Remarks
						% Passing	1 1/2"	5/8"	#4	#100				
	2	1964	0.5-9	0-0.5	No	64.8	60.7	48.9	3.0	1.25	3	18.0%	Gravel	Good-looking gravel, becoming "finer" with depth. Quite "red" in color. Acceptable for Items 201 and 105. Test #2 taken in field north of Test #1. Material appears finer than Test #1. Many small flat stones in a siltier matrix. Becomes finer below 5' depth. Acceptable for Items 201 and 105. Apparently this material is a continuation of that in the large pit to the east (old Barker pit).
	1	1964	1-10.5	0-1	No	86.3	63.2	41.1	10.0	2.0	1	22.4%	Gravel	Owner: Robert Traverse A large meadow northwest of Area #20. Test #1 taken 125' east of northwest corner, 5' south of fence. "Dirty" gravel shy on number of stones. Acceptable for Items 201 & 105.
	2	1964	1-10	0-1	No	94.5	81.6	60.2	22.0	6.5	1	----	Gran. Borrow (Grav.)	Test #2 taken 15' east of fence-line 315' south of Test #1. Dirty gravel, and many flat stones. Rejected for Item 201. Has excesses passing No. 4, No. 100 and No. 270 mesh sieves. Acceptable for Item 105.
22	1	1964	0-8	Stripped	Yes	86.2	61.3	39.0	3.0	1	1	22.6%	Gravel	Owner; C. H. Woodbury An average-sized pit (130' by 80'), off U.S. Route 4. Extension possibilities lie to the north, west and south. Material is gravel (wet), with water at 5.5'. Accept-

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 20

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	2A	1964	0.5-8.5	0-0.5	Yes	80.9	73.2	60.0	3.0	1.5	1 1/2	----	Gran. Borrow (Grav.)	able for Items 201 and 105. Test #2 taken in south face of pit. Test #2A taken on "top" of pit, represents 0.5'-8.5'. Material is gravel, acceptable for Items 201 and 105.
	2B	1964	8.5-10.5	----	Yes	100	100	98.9	6.0 5.9*	1.5 1.5*	1	----	Sand	Test #2B represents lower level of face. (8.5'-10.5'). Material is sand, acceptable for Item 202 and 105.
	2C	1964	10.5-21.0	----	Yes	86.7	68.9	39.2	4.0	1.0	1	13.4%	Gravel	Test #2C represents lowest level of face, (10.5'-21.0'). Material is gravel, acceptable for Items 201 and 105.
23	1	1964	0.5-6.5	0-0.5	Yes	61.3	45.6	29.0	11.0	5.0	1	20.2%	Gravel	Owner: J. Carrara (Old Burke pit). A large-sized pit north of U.S. Route 4. Test #1 taken in clearing west of old segment of pit (containing water). Numerous small pits in the vicinity. Material (quite coarse) with water at 5', with sand. Acceptable for Items 201 and 105.
	2	1964	0-6.5	Stripped	Yes			59.5	3.0	1.0	1	20.6%	Gravel	Test #2 taken east of old section in northernmost pit. Material is gravel, with small "pebbly" stones, (with water at 2.5'), to 6.5'. Acceptable for Items 201 and 105.
	3A	1964	1.5-10	0-1.5	Yes	100	100	94.6	19.0 17.9	9.0 8.5*	1	----	Gran. Borrow (Sand)	Test #3 taken in south face, 60' south of Test #2. 0-1.5' overburden, 1.5'-10' a mixture of fine and coarse sand, 10'-18' gravel. Took 2 samples.

*Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 21

Map 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				
	3B	1964	10-18	--	Yes	84.9	66.8	36.1	8.0	3.0	1	20.5%	Gravel	Test #3A represents upper sand portion of hole. Rejected for Item 202. Has excess passing No. 270 mesh sieve. Acceptable for Item 105. Test #3B represents lower portion-gravel, acceptable for Items 201 and 105.
24	1	1964	1-10	0-1	No	74.7	65.9	51.4	6.0	3.0	2 1/2	----	Gran. Borrow (Grav _q)	Owner: John Duda A large field (1000' north-south by 800' east-west) with knolls, west of pit areas, along U.S. Route 4. Test #1 taken 50' below brow of first knoll. Material is coarse gravel, becoming finer with depth. (Almost sand in bottom of hole). Acceptable for Items 201 and 105.
	2	1964	1-9	0-1	No.	96.6	85.9	73.6	5.0 3.7*	1.25 0.9*	2	----	Sand	Test #2 taken 260' east of Test #1, 15' west of 10" butternut tree, 425' east of house. Material here is gravelly sand becoming coarser on bottom. Acceptable for Items 202 and 105.
25	1	1964	1-9	0-1	Yes	74.2	63.8	35.4	5.0	3.0	1	22.4%	Gravel	Owner: C. R. Beach A medium-sized pit on curve in U.S. Route 4 across from Ident. No. 24. Pit itself is depleted-water in bottom. Test #1 taken 10' south of pit face in field where extension possibilities lie. Material is gravel, some stones over 6", becoming "finer" with depth. Acceptable for Items

*Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 22

Map 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				
													201 and 105.	
26	1	1964	1-10	0-1	No	64.7	54.6	34.0	12.0	7.0	2	23.0%	Gran. Borrow (Grav.)	Owner: C. R. Beach A large field south of U.S. Route 4. Appears to be a "textbook" kame terrace. Test #1 taken in northwest corner of field on knoll, 60' south of bank, 40' east of fence. Material is bouldery, in a dirty matrix. Many large sharp boulders, with some round stones, becoming finer with depth. Rejected for Item 201. Has excess passing No. 270 sieve. Acceptable for Item 105.
	2	1964	1-9	0-1	No	85.8	63.3	39.3	5.0	3.0	2	21.2%	Gravel	Test #2 taken 495' east of Test #1, 25' south of bank, 150' west of other bank. Material is similar to Test #1, but smaller stones, acceptable for Items 201 and 105.
	3	1964	2-6.5	0-2	No	85.8	63.3	31.6	5.0	2.0	3 1/2	17.6%	Gravel	Test #3 taken 430' southwest of Test #2, 30' north of fence. Material is gravel to 6.5', going into silt to clay to 9.5'. Acceptable for Items 201 and 105.
	4	1964	1-9	0-1	No	100	100	95.3	80.0	35.0	1	----	----	Test #4 taken in southwest end of field, 405' west of Test #3. Material is silt to clay, rejected for Item 105. Has excess passing No. 270 mesh sieve.

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 23

Map 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	Fosses VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
27	1	1964	1-7	0-1	No	100	100	55.0	38.0	6.0	1	----	Gran. Owner: George Young Borrow A hillside field behind house (out of same terrace feature). Test #1 taken 330' of station 465 + 50 centerline (since revised), 100' south of town road (soon to be abandoned). Material is till, with some angular boulders. Acceptable for Item 105.	
28	1	1964	2-3	0-1	No	72.7	51.6	30.9	13.0	4.0	3	----	Gran. Owner: Ralph Bruno Borrow A large field east of Vt. Light (Grav.) Aggregate Corporation. Test #1 taken in flat, 200' north of road. Material is 0-1' overburden, 1'-2' silt to clay, 2'-8' dirty gravel, (sampled 2'-8'). Rejected for Item 201. Has high abrasion. Acceptable for Item 105.	
	2	1964	1-9	0-1	No	100	100	95.6	38.0	15.0	1	----	Gran. Test #2 taken north of house on Borrowknoll. 0-1' overburden, 1'-5' fine sand to silt, 5'-9' clay (hard-packed). Sample 1'-9'. Rejected for Item 105. Has excess passing No. 270 mesh sieve.	
29	1	1964	5-10	0-1	Yes	87.7	70.8	40.1	13.0	4.0	1	----	Gran. Owner: Mrs. Gladys Madison Borrow (Grav.) A small overgrown pit east of town of Castleton. Pits below dump area. Test #1 taken 15' north of face of pit. 0-1' overburden, 1'-5' silt to clay with stones, 5'-10' clay, stones and gravel. Meets grading requirements, but insufficient proper-size stones for abrasion test.	

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 24

Map 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												Acceptable for Item 105.	
30	1	1964	2-14	0-1	Yes	83.0	67.2	48.5	7.0	2.25	2	23.6%	Gravel	Owner: Town of Castleton A large area of pits with different levels. Test #1 taken in north face of lower pit. Material is gravel, with silt to clay at 14'. Acceptable for Items 201 and 105.
	2	1964	1-6	0-1	Yes	100	100	81.6	41.0	6.0	2 1/2	----	----	Test #2 taken in floor of first terrace 0-1' overburden, 1'-6' silt and stones, hard-packed silt at 6'. Acceptable for Item 105.
	3	1964	7-15	0-2	Yes	92.9	36.0	65.4	3.0	0.75	1	----	Gran. Borrow	Test #3 taken in face of western extremity of east of Test #2. (Grav.) Water standing in floor here. 0-2' overburden, 2'-4' silty gravel, 4'-7' dirty gravel, 7'-15' sandy gravel. Rejected for Item 201. Insufficient stone for Percent of Wear Test. Acceptable for Item 105.
	4	1964	0-10.5	Stripped	Yes	63.9	46.5	22.3	12.0	4.0	1	21.4%	Gravel	Test #4 taken in floor of second level - represents the material in face of lower level. Gravel, many stones over 6", with a layer of very coarse boulders at 4'-7'. Acceptable for Items 201 and 105.
	5	1964	0-8	Stripped	Yes	61.4	45.0	20.4	7.0	1.75	1	27.2%	Gran. Borrow	Test #5 taken on third level at face of pit. Stripped 0-6' coarse (Grav.) gravel, with a layer of silt to clay from 4'-5.5'. Bottom is coarse gravel with large stones and chunks of clay. Rejected for Item 201. Percent of Wear is high. Acceptable for Item 105.

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 25

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
														This is a promising source of material. At present the Town has a crusher here; most of the material is quite coarse requiring a crushing operation.
31	1	1964	0.5-7.5	0-0.5	No	100	100	78.5	36.0 28.3*	12.0 9.4*	1	----	----	Owner: Vt. Light Aggregate Corporation A small field near swampland, alongside road. Test #1 taken 85' east of road, 70' south of pond. Material is silt to sand, with ledge or boulders at 7.5'. Rejected for Item 202 and Item 105. Has excesses passing No. 100 and No. 270 mesh sieves.
32	1	1964	1-4	0-1	No	100	97.8	79.9	24.0	10.0	2	----	Gran. Borrow	Owner: K. Jepson A long knoll east of Ellis Hall (Castleton Teachers' College), in field. Testhole #1 taken 60' west of fence, 185' south of 18" hickory tree. Material is till, with ledge at 4'. Meets requirements for Item 105.
	2	1964	1-5	0-1	No	100	100	77.6	37.0	13.5	1	----	----	Test #2 taken on same knoll, 1000' southwest of Test #1. Material is boulders in clay, ledge at 5'.
	3	1964	1-6	0-1	No	100	96.6	84.5	25.0	7.75	1	----	Gran. Borrow	Test #3 taken on edge of wood-line, east of knoll, on hillside. Material is till, with large boulders at 6'. Meets requirements for Item 105.
33	1	1964	12-20	0-1	Yes	85.8	62.5	28.9	6.0	3.25	1	16.4%	Gravel	Owner: Gerald Savage

*Percentage of Total Sample

TABLE J

CASTLETON GRANULAR DATA SHEET NO. 26

Map 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				
														A small pit along Railroad tracks, dimensions are 100' by 200'. Limited in extension. Test #1 taken in southeast face of pit. Sample represents 12' to 120' depth. Height of face is approximately 25'. Acceptable for Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
34	1A	1964	1-6	0-1	No	86.0	74.7	56.8	11.0	4.0	2 1/2	19.2%	Gran.	Owner: Reg. Manning Borrow A field and woods northwest (Grav.) of house. Test #1 taken in southend of field, just north of woods. Material is dirty gravel or pebbly sand. Rejected for Item 201, Sub-base of Gravel. Has excess passing No. 270 mesh sieve. Acceptable for Item 105, Granular Borrow.
	1B	1964	6-10		No	96.0	92.4	79.2	4.0	1.25 3.2*	2	14.0%	Sand	Test #1B represents lower end. Material is gravelly, but meets requirements for Item 202, Sub-base of Sand and Item 105, Granular Borrow.
	2	1964	7.5-9.5	0-1	No	89.6	60.0	34.0	12.0	6.5	1	16.0%	Gran.	Test #2 taken 200' southwest of Test #1 in woods, 700' (Grav.) southwest of house. Material gravel, rejected for Item 201, Sub-base of Gravel. Has excess passing No. 270 mesh sieve. Acceptable for Item 105, Granular Borrow.
35	1	1964	1-7.5	0-1	No	100	96.8	89.3	30.0	11.5 26.8*10.3*	1	----	----	Owner: Harold Brown

*Percentage of Total Sample

TABLE 1

CASTLETON GRANULAR DATA SHEET NO. 27

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1/2"	5/8"	#4	#100	#270				
														A large field of alfalfa. Test #1 taken in field, 55' east of road, and south of house. Material is silty sand, with clay bottom. Rejected for both Item 202, Sub-base of Sand and Item 105, Granular Borrow. Has excess material passing the No. 100 and No. 270 mesh sieves.
36	1	1964	1-9	0-1	Yes	84.1	68.2	44.6	6.0	3.0	2	19.0%	Gravel	Owner: Lela Rogers A large area, including an old pit, at junction of roads. Test #1 taken in face of pit. (Pit dimensions are 115' by 650'). Material is 0-1' overburden, 1'-9' gravel, 9'-10.5' clay to silt. Acceptable for Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
	2	1964	1-10	0-1	Yes	79.5	63.5	35.1	16.0	7.0	4	22.0%	-	Test #2 taken east of pit, on knoll. Material is dirty gravel, rejected for Item 201 and Item 105. Has excess passing No. 100 and No. 270 mesh sieves. Has a color of 4.
	3	1964	1-10	0-1	Yes	100	96.1	84.4	20.0 16.9*	8.0* 6.8*	1	----	Grtn. Borrow (Sand)	Test #3 taken on same knoll as Test #2 which runs east-west, 45' east of Test #2 and 60' west of road. Material is silty sand, with clay bottom. Rejected for Item 202. Sub-base of Sand.
						* Percentage of Total Sample								

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 28

Map 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				
														Has an excess of material passing No. 270 mesh sieve. Acceptable for Item 105.
37	1	1964	1-7	0-1	No	81.8	66.6	42.6	4.0	1.75	2 1/2	26.0%	Gran. Borrow (Grav.)	Owner: Joseph Sorrentino A terrace south of house and U. S. Route 4. Test #1 taken 300' south west of house. 0-1' overburden 1'-7' gravel 7'-8' silt Water at 7' Rejected for Item 201. Has Percent of Wear 26.0%. Acceptable for Item 105.
	2	1964	1-5	0-1	No	62.8	50.7	36.0	8.0	3.5	3 1/2	25.6%	Gran. Borrow (Grav.)	Test #2 taken 500' southwest of Test #1. Barely fails to meet requirements for Sub-base of Gravel, Item 201. Acceptable for Item 105.
38	1	1964	1-7	0-1	No	78.9	63.1	44.9	3.0	1.5*	2	22.2%	Gravel	Owner: Ed Kehoe Test #1 taken 75' south of Joseph Sorrentino property line in sparsely wooded glade. Excavation limited to 7' depth because of water table encounter. Material sampled has only 22.2% wear and meets other specifications for acceptance as Item 201.
39	1	1964	5-10	0-5	No	100	100	98.5	19.7	4.3 4.2*	1	----	Gran. Borrow (Sand)	Owner: Ed. Kehoe Test #1 taken 255' north of large elm on Mortimer Brown

* Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 29

Map 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"	% Passing 5/8"	% Passing #4	% Passing #100	% Passing #270				
	2	1964	1-10	0-1	No	100	100	99.3	76.0 75.5*	2.0*	1	----	Gran. Borrow (Sand)	property line midst scattered brush and trees. Material logged in field consisted of 0-0.5' overburden, 0.5-5' silt, 5-10' medium sand. Excessive quantity of very fine sand passing No. 100 screen made material unacceptable as to Item 202. Test #2 taken at point 500' southwest of Butch Spardela house and 85' west of centerline of Road. Material rejected for Item 202 because of excessive very fine sand.
40	1	1964	1-8	0-1	No	100	100	82.4	29.0	8.0	1	----	Gran. Borrow (Sand)	Mortimer Drown Test #1 taken approximately 500' east of Merrill Tracy residence on top of 1000' long ridge. Very few stones in sample. Acceptable for Item 105.
	2	1964	1-6.6	0-1	No	100	100	95.3	21.9	5.0 4.8*	2	----	Gran. Borrow (Sand)	Test #2 taken in edge of pasture 300' south of tree line and 60' east of road. Material rejected for Item 202. Excessive sand passing the No. 100 mesh sieves. Acceptable for Item 105.
	3	1964	1-6	0-1	No	100	100	90.3	22.6	10.3 9.7*	2	----	----	Test #3 taken 180' south of 24" elm on Ed Kehoe property line, and 175' west of road. Failed to meet requirements for Items 202 and 105.

*Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 30

Map Ident. No.	Field Test No.	Year Field Tested (Ft.)	Depth of Sample (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VMD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
														Excess material passing the No. 100 and No. 270 mesh sieves.
41	1	1964	1-7	0-1	No	100	90.0	56.8	4.0	1.75	2 1/2	23.8%	Gravel	Owner: Rooney (Parson's Hill Farm) Test #1 taken in field approximately 650' south of rail-road tracks and 100' north-west of 36" elm. Material accepted for Item 201.
42	1	1964				NOT SAMPLED								Owner: Mrs. Harvey Dunlop (Property off road to Lake Bomaseen) Test #1 attempted in field on ridge northeast of house. Backhoe hit slate at 1' depth. Apparently entire area is underlain by slate immediately below surface. (Not Sampled)
43	1	1964	0-10	Stripped	Yes	100	100	99.1	2.0	1.3*	1	----	Sand	Owner: John Spafford (Pit) Property is immediately west of U.S. Route 30, about 1 mile south of U.S. Route 4 intersection at Castleton Corners. Waste piles and mounds of material are scattered in floor and on roof of pit. Test #1 was in floor across from State Garage. It encountered water at 4.5'. There were very few stones in approximately 5 yards of

* Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 31

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	3-12	0-1	Yes	100	100	100	3.0	1.3*	1	----	Sand	material. Material accepted for Item 202. Test #2 was taken in face of pit 45' north of Test #1. Six inch bands of silt occurred approximately every 8' on face. Material is accepted for Item 202.
44	1	1964	1-10	0-1	No	91.1	75.1	41.2	5.0	1.5	2 1/2	21.8%	Gravel	Owner: Charles Brown Gravel 'Island' is circumvented by an abandoned channel of Castleton River about 500' west of U.S. Route 30 and just south of railroad tracks. Test #1 on 'Island' at point 45' southeast of 16" butter-nut and 45' southwest of 6" elm. Material is acceptable for Item 201.
	2	1964	1-8	0-1	No	87.5	69.8	44.3	5.0	1.5	2	21.6%	Gravel	Test #2 is located approximately 175' northwest of Test #1 at point 75' north of 12" elm and 100' south of railroad tracks. Acceptable for Item 105, and Item 201.
45	1	1964	0.5-4	0-0.5	No	100	92.4	70.1	4.9	2.5 1.8*	3 1/2	----	Sand	Owner: Ed. Lewis Property is west of U.S. Route 30 about .7 mile south of Castleton Corners. Test #1 at clearing in swamp mid scattered clumps of cedar at point 500' west of three

* Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 32

Map Ident. No.	Field Test No.	Year Field Tested (Ft.)	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
						1/2"	5/8"	#4	#100	#270				
														new houses. Sample has a reddish color. Acceptable for Item 202.
46	1	1964	0-10.5	Stripped	Yes	100	100	100	60.0*	8.3*	1	-----	Gran. Borrow (Sand)	Owner: Robert Brown Property includes large pit on northside of farm road, .25 mile east of U.S. Route 30 toward Parker Hill Road. Test #1 in floor on left 60' from road. Penetrated water table. Sand appears uniform. Acceptable for Item 105.
	2	1964	0-10	Stripped	Yes	100	100	100	64.0	13.0*	1	----	----	Test #2 in floor near north edge of pit appeared to have Red loam overlying sand. Rejected for Item 105.
	3	1964	0.5-10	0-0.5	No	100	100	100	64.0	15.25*2		----	----	Test #3 in field 120' west of pit also appears to be reddish loam mixed with sand. Rejected for Item 105.
47	1	1964	0-10	Stripped	Yes	100	100	100	97.0	12.0*	1	----	----	Owner: George Rogers Little pit on property is located south of race track .1 mile west of U.S. Route 30 toward Blissville. Test #1 at deepest point in floor of pit. Rejected for Item 105.
48	1	1964	3-10	0-1	No	100	100	95.7	5.7	1.25 1.2*	1	----	Sand	Owner: Robert Brown Property is abandoned meadow south of Castleton River and north of Cedar Meadow Farm. Test #1 near south edge of meadow 40' north of 24" elm

* Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 33

Map Ident. No.	Field Test No.	Year Tested	Depth of Field 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	4-10	0-1	No	100	100	60.9	11.0	4.0	2	----	Gran. Borrow (Sand)	and 40' west of 18" elm. Acceptable for Item 20%. Test #2 on boundary between fallow and cultivated fields about 50' south of river. Acceptable for Item 105.
49	1	1964	4.5-9.5	0-1	No	100	100	100	20.0	6.75	2	----	Gran. Borrow (Sand)	Owner: Lee Carter Property consists of field and woodland about 1 mile south of Hydeville and north-west of Blissville. Test #1 about 300' south of Carter's barn in large field. Acceptable for Item 105.
	2	1964	0.5-10	0-0.5	No	100	100	100	38.0	11.5	1	----	----	Test #2 in small clearing .2 mile along logging road that enters main road, .35 mile west of Blissville. Rejected for Item 105.
	3	1964	1-10.5	0-1	No	100	100	100	21.0	4.8*	1	----	Gran. Borrow (Sand)	Test #3 is in field 500' west of building on farm north of Carter property. Acceptable for Item 105.
50	1	1964	1-10	0-1	No	100	100	100	60.0	6.25	1 1/2	----	Gran. Borrow (Sand)	Owner: Mrs. Mary Gabrielle Property about .4 mile west of Blissville. Test #1 directly north of the Gabrielle residence and 20' south of pine and poplar woods. 'ot-fine sand and silt encountered. Acceptable for Item 105.
51	1	1964	1-9.5	0-1	No	100	100	99.0	16.8	2.8*	2	----	Sand	Owner: Joseph Pollerin Property east of abandoned race track east and north of

* Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 34

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color Abrasion		Passes VHD Spec.	Remarks
						% Passing					AASHTO T-21	AASHTO T-4-35		
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	0.5-10.5	0-0.5	No	100	100	100	48.0	6.0	1 1/2	----	Gran. Borrow (Sand)	Hydeville. Test #1 is 120' east of horse barn and 40' north of utility pole #541. Acceptable for Item 202. Test #2 is 280' north of #1 on edge of scattered birch and pine grove. Test #2 material had a reddish color. Acceptable for Item 105.
52	1	1964	0.5-4	0-0.5	Yes	73.3	56.1	35.1	28.0	4.0	1	18.4%	Gran. Borrow (Grav.)	Owner: George Sheldon Property 1.0 mile north of U. S. Route 30 and .25 mile west. Pit is south of house in open field. Test #1 dirty gravel with ledge and water encountered at 4'. Acceptable for Item 105.
	2A	1964	0.5-5	0-0.5	Yes	97.6	82.6	56.8	11.0	2.5	1	----	Gran. Borrow (Grav.)	Test #2A taken on top represents south face of pit. 2A analysis meets grading requirements for Item 201A, but has insufficient size stone for wear test.
	2B	1964	5-9	----	Yes	100	96.8	89.7	52.0	13.25 11.9*	1	----	----	Rejected for Items 202 and 105. This excess passing the 100 and 270 mesh sieves.
53	1	1964	1-10	0-1	No	100	100	100	99.1	91.4	1	----	----	Owner: Charles Hanley Property is 1.8 miles north of Castleton Corners on U.S. Route 30 and .2 mile west on "Lake Road". Test #1 taken after turning right on Road to Neshobé Beach. Located in

* Percentage of Total Sample

TABLE I

CASTLETON GRANULAR DATA SHEET NO. 35

Map Ident. No.	Field Test No.	Year 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				
														field on right 55' from edge of road. This sample is silt thus not good for Item 105.

Castleton Property Owners - GranularTABLE I
Supplement
Map Ident. No.

A. and H. Real Estate Agency (Mr. Altruit)	9
Balch, Dewey	7, 10
Beach, C. R.	25, 26
Birds Eye Mountain Corporation	17
Brown, Charles	44
Brown, Harold	35
Brown, Mortimer	40
Brown, Robert	46, 48
Drano, Ralph	28
Carrara, (Old Barker Pit)	19
Carrara, (Old Burke Pit)	23
Carrara, J. (by trailer park)	18
Carter, Lee	49
Castleton Development Commission	1
Castleton, Town of	30
Cornwall, Robert	3
Ducharme, Cecil	4, 5, 6
Duda, John	24
Dunlop, Harvey (Mrs.)	40
Ellis, Frank	11
Frenette, Francis	2
Gabrielle, Mary (Mrs.)	50
Hanley, Charles	53
Jepson, K.	32
Kehoe, Edward	38, 39
Lewis, Edward	45
Madison, Gladys (Mrs.)	29
Manning, Reginald	34
Nichols, Alton and Mary	13
North Meadows Corporation	16
Pallerin, Joseph	51
Pelletier, Eugene	14, 15
Rogers, George	47
Rogers, Leia	36
Rooney (Parson Hill Farm)	41
Savage, Gerald	33
Scrafford, John	12
Sheldon, John	52

TABLE II

CASTLETON ROCK DATA SHEET NO. I

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHTO T-3	Remarks
1	1	1964	Slate	Yes	Chip	----	Owner: State of Vermont An abandoned slate quarry is west of the Bomoseen Fish and Game Development Area, about 0.6 mile south of St. Mathews Church. This rock is mapped as the Mettawee Slate. Both Test #1 and Test #2 samples were taken from large waste piles in the quarry that represent a vast quantity of material. The material broke up into flat and elongated pieces which were not the proper size for Percent of Wear Test.
	2	1964	Slate	Yes	Chip	----	
2	1	1964	Slate	Yes	Chip	----	Owner: Mike Taran An abandoned slate quarry waste pile is east of finished shed 0.4 mile on State Aid #2 in Blissville. This rock is mapped as the West Castleton Formation. The material broke up into flat and elongated pieces which were not the proper size for Percent of Wear Test.
3	1	1964	Slate	Yes	Chip	----	Owner: Vermont Light Aggregate Corporation A huge quarry is about 1.5 miles south of U.S. Route in Castleton. This rock is mapped as the Mettawee Slate. Test #1 is a random sample of the west face and Test #2 is taken from the east face. Both samples are freshly blasted materials that broke up into flat and elongated pieces which were not the proper size for Percent of Wear Tests.
	2	1964	Slate	Yes	Chip	----	
4	1	1964	Slate	No	Chip	----	Owner: Ralph Bruno Area sampled was a slope southeast of owner's barn that had a limestone ridge and several slate outcroppings. Rock is mapped as the Mettawee Slate. The material broke up into flat and elongated pieces which were not the proper size for Percent of Wear Test.

Castletown Property Owners - Rock

TABLE II
Supplement
Map. Ident. No.

Bruno, Ralph

4

Taron, Mike

2

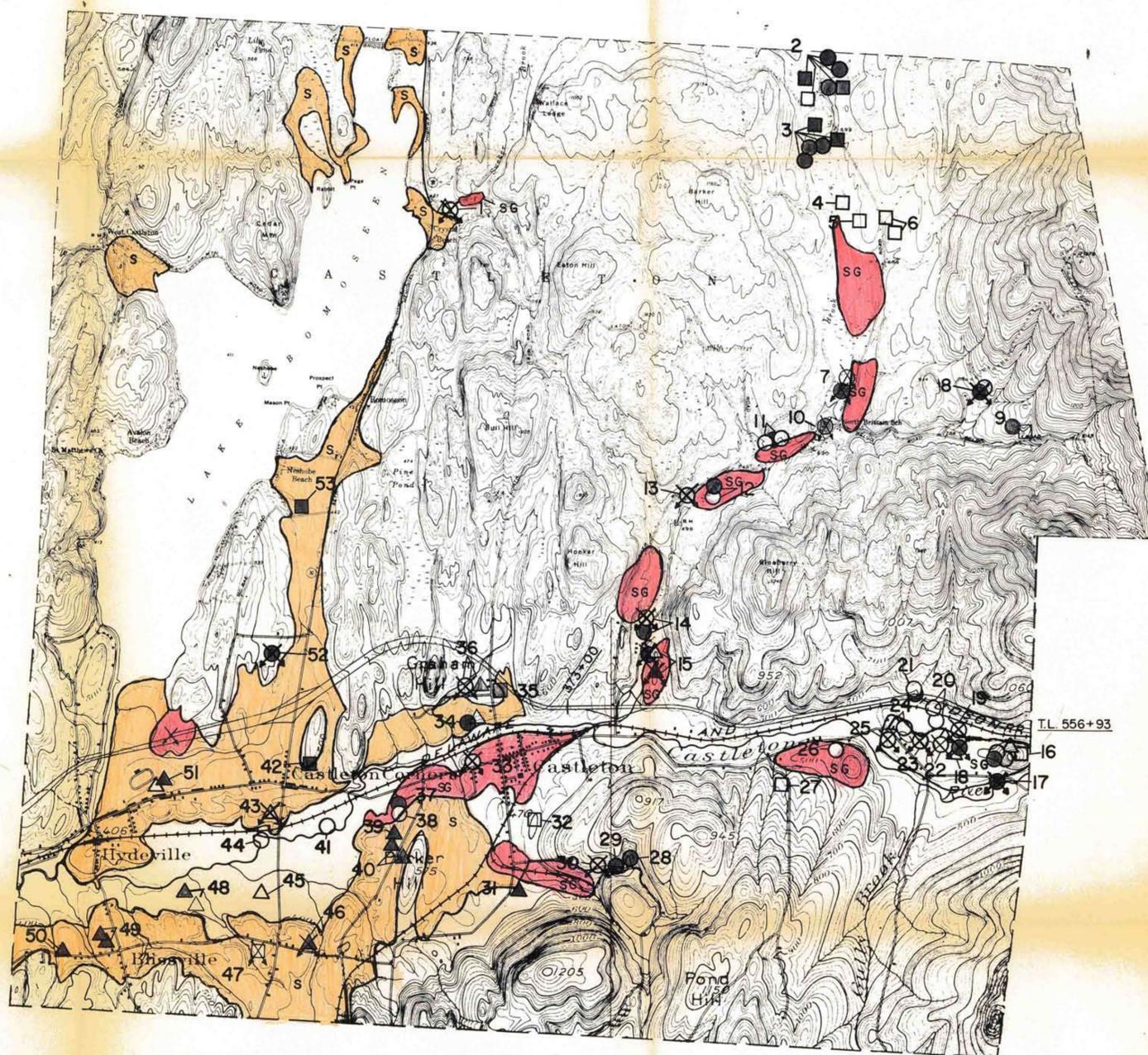
Vermont, State of

1

Vermont Light Aggregate Corporation

3

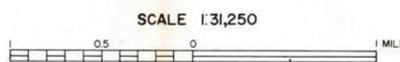
Sorrentino, Joseph	37
Spafford, John	43
Traverse, Robert	20, 21
Vermont Light Aggregate Corporation	31
Woodbury, C. H.	22
Woodbury, Frank	3
Young, George	27



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)

CASTLETON



CONTOUR INTERVAL 20 FEET
1966

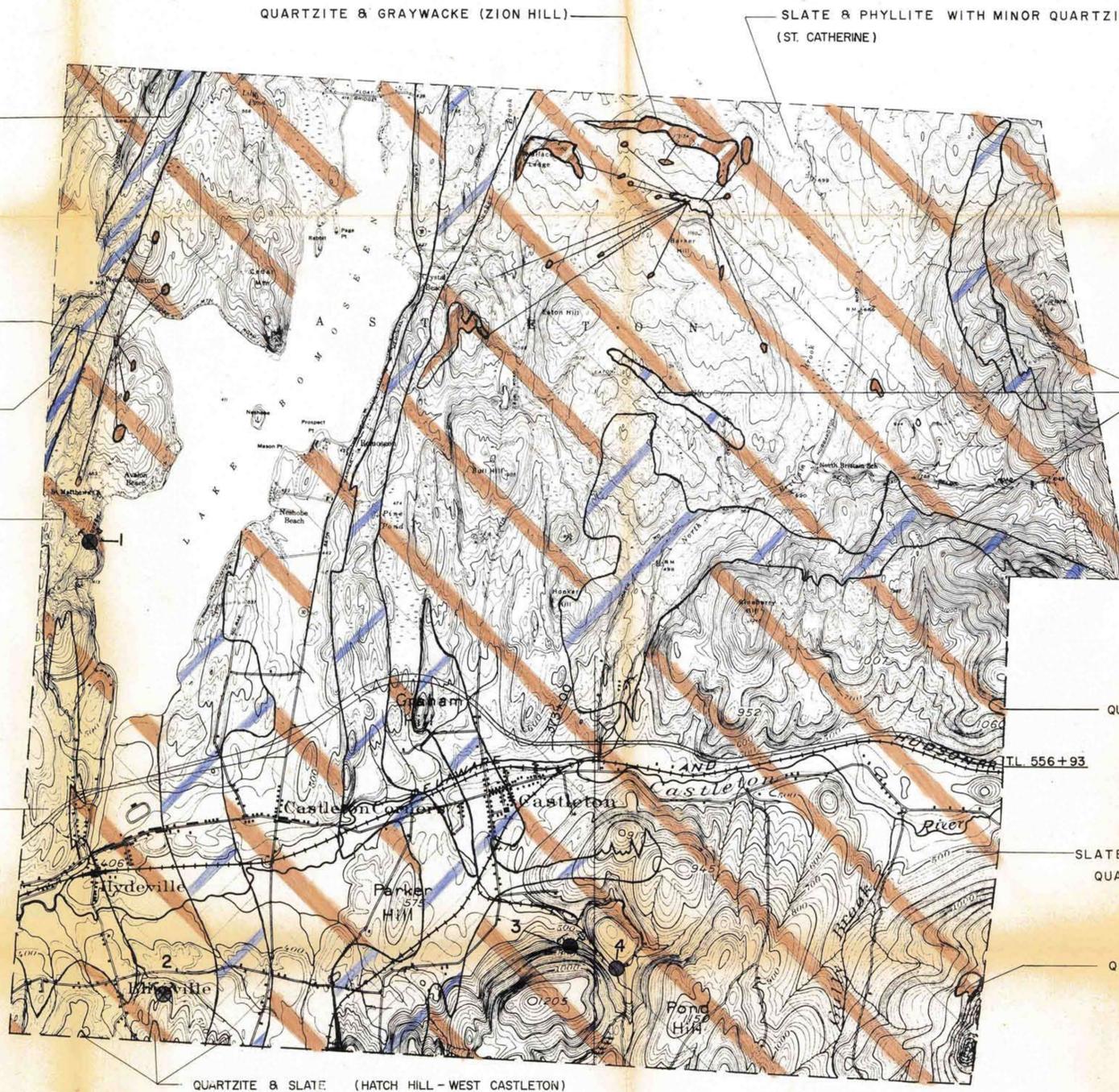
GRANULAR
MATERIALS MAP
BY
VERMONT DEPARTMENT OF HIGHWAYS
IN COOPERATION WITH
U.S. BUREAU OF PUBLIC ROADS

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

PLATE 1
GRANULAR

REVISIONS

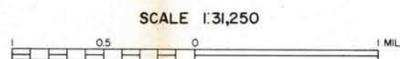
DATE	BY



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, ARKOSE
- 3 IDENTIFICATION NUMBER (refer to data sheets)

CASTLETON



SCALE 1:31,250

CONTOUR INTERVAL 20 FEET

1966

**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					