

SURVEY OF HIGHWAY CONSTRUCTION MATERIALS
IN THE TOWN OF BROWNINGTON, ORLEANS 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 C.G. Doll, Vermont State Geologist, University of Vermont, Burlington, Vermont,
4. 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 overall 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 onto 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 with their intended use in mind. 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 $7\frac{1}{2}$ -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: Vermont Geological Survey Bulletins, Vermont State Geologist Reports, United States Geological Survey Bedrock Maps, and the 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, eskers, 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, and 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.

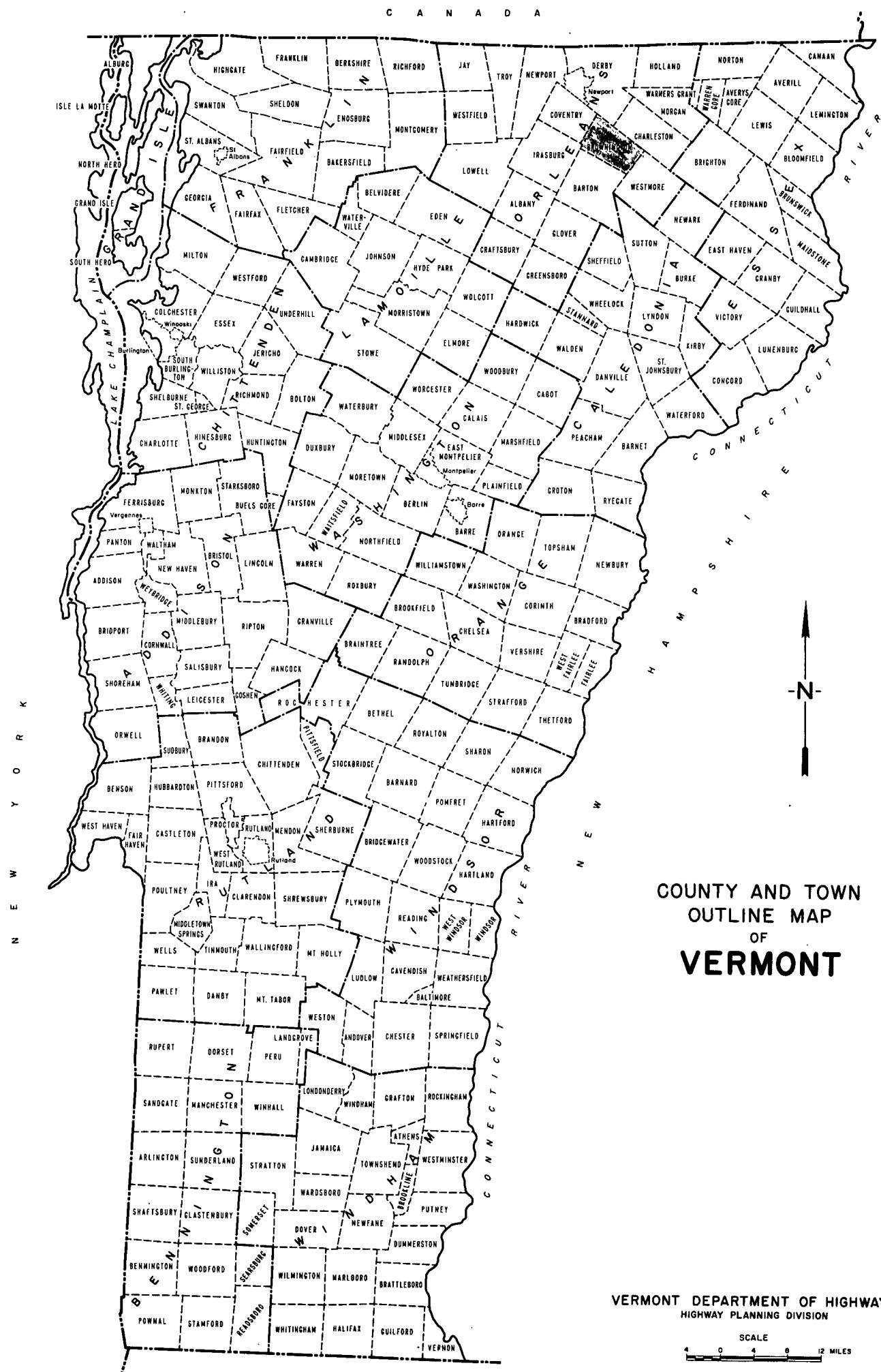
Work sheets contain more detailed information on each test and a detailed sketch of each Identification Number Area. The work sheets and laboratory reports are on file in the office headquarters of this Project.

LOCATION

The town of Brownington is in northeast Orleans County, which county is located along the north-central edge of the State. The town is bounded on the north by Derby, on the northeast by Charleston, on the southeast by Westmore, on the southwest by Barton, on the west by Irasburg, and on the northwest by Coventry. (See County and Town Outline Map of Vermont on the following page.)

Brownington is within the Vermont Piedmont, a characteristically hilly to mountainous terrain composed mainly of northeast-southwest trending argillaceous and calcareous metamorphic rocks that have been locally intruded by granitic dikes and domes.

Elevations vary from less than 700 feet in the Barton River valley at the Irasburg town line to a height of 1880 or more feet on the flank of an unnamed mountain on the Westmore town line. Drainage is into the Barton River via Day Brook, Trout Brook, and the Willoughby River with its tributaries.



COUNTY AND TOWN
OUTLINE MAP
OF
VERMONT

**VERMONT DEPARTMENT OF HIGHWAYS
HIGHWAY PLANNING DIVISION**

SCALE
4 0 4 8 12 MILES

[View Details](#)

JULY, 1963

SURVEY OF ROCK SOURCES

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: 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 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 (AASHO T-3). It is kept in mind that the 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 Rock Materials 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 complex metamorphic rocks almost entirely comprise the formations within the town of Brownington. A very minor amount of igneous rock occurs at two locations near its northwest and northeast boundaries.

Occasionally, rocks belonging to the same formation and exhibiting similar outward characteristics (i.e., color, texture, etc.) may produce different abrasion results due to different physical and chemical properties. Therefore, in no case should satisfactory test results of an area be construed to mean that the same formation, even in the same area, will not later produce unsatisfactory material. This is especially true of metamorphic rocks.

In general, bedrock in the town of Brownington suitable for Item 204, Sub-base of Crushed Rock, rarely occurs as a continuous surface exposure 150 feet or more in length. Most bedrock is covered by a mantle of granular material and vegetation that limits sampling to sporadic outcrops within the linearly measured interval.

Medium-grained granite at two locations on the Rock Materials Map was examined in the field, but only one was sampled. Adequate exposures of granite on Bassett Brook southeast of an old schoolhouse on Town Highway #14 were examined, but were not sampled because area was deemed too difficult of access for potential development. The other location sampled was just north of Day Brook and east of Town Highway #4. It is smaller in

extent but more easily accessible. It provides material with a wear-test value of 4.0%. (See Map Identification Number 1.)

One sample was taken of phyllite in the Waits River formation (Barton River member) that gave a wear-test value of 4.6%. Area sampled was pasture land and woods readily accessible to Town Highway #12 in the center of the township. (See Map Identification Number 2.) The Survey additionally attempted to sample this member at another locality (the Ray Kirkpatrick farm on Town Highway #28), but outcrops of non-fissile material proved to be inadequate and sampling was abandoned.

Finally, phyllite of the Gile Mountain formation was sampled from waste piles at an old whetstone quarry on Town Highway #36. (See Map Identification Number 3.) It gave a wear-test value of 3.8%.

SURVEY OF SAND AND GRAVEL SOURCES

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 are mapped when known. 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 area 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 then 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

Granular materials within the town of Brownington are largely restricted to two general regions on the Granular Materials Map; namely, the northwestern and the south-central to eastern parts of the township. All of the materials are either glaciofluvial or glaciolacustrine in origin.

The granular materials south and southwest of Brownington Pond and along the Brownington-Coventry town line may have formed marginal to wasting glacial ice. The ice would have occupied the Barton River valley, and possibly a lobe of the glacier extended northeast along Day Brook and its tributaries into the southeast corner of Derby. Sands, gravels, and poorly sorted cobbly and bouldery material found at Map Identification Numbers 1, 2, 3, 4, 5, 7, 8, 9, and 11 attest to possible ice-contact origin.

Map Identification Number 10 is at a gravel pit located within a feature that has been designated as a delta by Dr. D. P. Stewart. It lies at a lower elevation than features at Map Identification Numbers 8, 9, and 11. (See Plate 1.) This delta feature probably represents deposition at the edge of a glacial lake which formed in front of the glacier as it retreated down the Barton River valley. Sands that probably were deposited in this lake were sampled on a terrace west of and immediately below the pit. This area is just west of the proposed location of Interstate 91. (See Map Identification Numbers 12 and 13.)

In spite of fragmentary evidence in some localities, it can be postulated that additional arms of the aforementioned postglacial lake were the sites of deposition for sampled materials in the south-center and southeastern parts of the township. Taking Dr. Stewart's field mapping

as the initial premise, it was determined that the test results from this survey along with the Barton and Coventry surveys point conclusively to inundation of the Willoughby River valley and its tributaries. A paludal area southwest of Map Identification Numbers 51, 52, and 53 would seem to indicate that the upper Willoughby River valley has recently been the locus of a sizeable body of water. Containment of a lake here could have been abetted by the presence of kame terraces, which are parallel to Vermont Route 5A, and which in turn may have been reworked by wave action along their southwestern margins. (See Map Identification Numbers 43, 44, 45, 49, 50, 51, 52, 53, and 54.) Lake sand within the valley is found northwest of the Coapland house at Map Identification Numbers 47 and 48.

Depositional history of this valley below Evansville and of the tributary Brownington Branch valley is more complex in interpretation but apparently is in sequencence with higher and lower deposition elsewhere. It is conjectural as to whether deposition took place in one large embayment rather than in several interconnected small ones. In general, the more extensive lake sands are found at the lower elevations — between 1000 and 1100 feet (Map Identification Numbers 14, 15, 17, 18, 19, 23, 24, 25, and 41). Other sands, mainly above 1100 feet in elevation, and a few gravels are probably the result of either direct deltaic deposition or of local reworking of the same (Map Identification Numbers 16, 20, 21, 22, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, and 36). Kame terraces probably have accounted for deposition at Map Identification Numbers 38 and 40.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF BROWNINGTON

Gile Mountain Formation - Gray quartz-muscovite phyllite or schist, interbedded & intergradational with gray micaceous quartzite, calcareous mica schist, and locally quartzose and micaceous crystalline limestone like that of the Waits River formation. The phyllite and schist commonly contain porphyroblasts of biotite, garnet, or staurolite, and locally, kyanite, andalusite, or sillimanite.

Waits River Formation (Barton River Member) - Interbedded siliceous crystalline limestone and sericite-quartz-chlorite phyllite in northern Vermont; diopsidic limestone and cordierite hornfels at contacts with granitic dikes and sills. The limestone commonly weathers in places to a brown earthy crust.

White Mountain Plutonic Series - Undifferentiated granitic rocks. Medium-to coarse-grained granitoid rocks including, besides granite, granodiorites and quartz monzonites.

GLOSSARY OF SELECTED GEOLOGIC TERMS

Argillaceous - Containing or consisting of clay.

Calcareous - Pertaining to or containing calcium carbonate.

Deltaic - Relating to predominantly alluvial deposition built out by a stream into the sea or other body of water. It usually is formed like the Greek letter delta.

Dike - A sheet-like body of igneous rock that fills a fissure in older rocks which it entered while in a molten condition. Varies from less than an inch in width and a few yards in length to thousands of feet in width and many miles in length. May radiate in groups from a center or occur singly and isolated from other igneous bodies.

Fissile - The tendency possessed by some rocks to split into thin sheets along either bedding planes or cleavage planes induced by fracture or flowage.

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.

Granite - A granular crystalline rock of predominantly interlocking texture and composed essentially of alkalic feldspars and quartz. Accessory minerals (chiefly micas, hornblende, or more rarely pyroxene) are commonly present.

Hornfels - A general term for very dense, dark-colored, hard, sugary-grained rocks that have been recrystallized by the heat of an adjacent igneous intrusion.

Ice Contact Deposits - Sediments having various topographic expressions that have accumulated in contact with wasting glacial ice. Included are eskers, kame terraces, kames, and features marked by numerous kettle holes.

Igneous Rock - Rock formed by solidification of hot mobile rock material.

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

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

Paludal - Pertaining to swamps or marshes.

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

Physiography - Broadly, it designates the study of the physical divisions of the globe - lands, seas, and atmosphere.

Piedmont - Lying or formed at the foot of mountains.

Porphyroblasts - Large crystals which have grown in place within the fine-grained groundmass of a metamorphic rock. They have been formed by action of heat, pressure, and infiltrating solutions occurring later than the rocks in which they form.

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.

Quartz-Monzonite - A rock of granitic texture intermediate in composition between granite and quartz-diorite, which contains quartz and about equal amounts of the alkali and soda-lime feldspars.

Schists - 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.

Till - Unsorted drift or mixture of rock fragments and fine materials left by melting glaciers.

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APPENDIX I

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 1, 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 (3½) 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

APPENDIX I
(cont'd.)

"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 Item 205-A	4"	100
	Fine-Graded Item 205-B	No. 4 1½"	25-50 95-100
		No. 4	30-60

"At least thirty percent (30%) by weight of the stone content of the crushed gravel, that is, the material retained on the No. 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 ($3\frac{1}{2}$) as determined by the colorimetric test described in the AASHO Method of Test, Designation T-21."

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 1

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							
						1½"	5/8"	#4	#100	#270											
1	1	1966	1-8.5	0-1	Yes	86.3	80.6	65.6	9.8	6.0	3½	---	Gran. Borrow (Grav.)	Owner: Harold Lyon. Area is field south of Brownington Pond with pit 0.26 mile east of Town Highway #5. Test #1 was in south face at west end of pit. Material is gravel with coarse sand and estimated 10% cobbles. It fails to meet grading requirements for Item 201 because (1) it has only 34.4% stone and (2) it has too great a fraction passing the #270 sieve. There was insufficient proper size stone for percent of wear test. It meets requirements for Item 105.							
						100	97.1	84.2	8.4	3.0 2.5*	1	---	Sand								
						86.1	77.1	63.5	12.0	4.0	1	---	Gran. Borrow (Grav.)								
*Percentage of Total Sample												Test #2 was in east face of pit. Top 3 feet is soil, silt, and rotten stones which were not tested. Intervals sampled were 1.5 feet of silty sand overlying 5 feet of very coarse pebbly sand. A fine silty or sandy gravel continued for 2.5 feet into the floor with water at 2.4 feet. Material meets requirements for Item 202.									
												Test #3 was dug 6 feet beyond east face of pit. This side of pit has many cobbles and boulders. Top 2 feet of hole was soil and silt. Two-four foot interval was a gravel with many +6 inch sub-angular									

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 2

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
						1½"	5/8"	#4	#100	#270				
4	1966	2.5-6.5	0-2.5	No		67.8	60.4	47.1	21.0	9.8	1½	---	Gran. Borrow (Grav.)	cobbles that are roughly stratified with varying amounts of coarse quartzose sand. A zone of angular stones comprise the 4-6 foot interval, and the 6-10.5 foot interval is mainly a gravelly sand, with possibly till below that. Material fails to meet requirements for Item 201 because it contains too little stone. There was insufficient proper size stone for percent of wear test. It meets requirements for Item 105. Test #4 was dug at a point in field S-35-E of Test #3. There is much silt and rotten stone with a few boulders in the top 2.5 feet. The remainder of the material consists of a 1.5 foot-thick lens of gray coarse pebbly sand with a few large rock fragments overlying 2.5 feet of coarse silty gravel. Test #4 bottomed in clay or silty clay. It failed to meet requirements for Item 201 because excessive material passes the #100 and #270 sieves. There was insufficient proper size stone for percent of wear test. It meets requirements for Item 105.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 3

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 4

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 5

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	
						1½"	5/8"	#4	#100	#270					
3	1966	2-8.5	0-2	No	61.3	52.0	36.4	24.0	11.0	1	---	---		high point of pasture 315' S-45-E of Test #1 and N-80-E of barn. Material consisting of silt to clay and cobble till was not sampled. Test #3 was located 200' N-65-W of Test #2 and 125' S-20-E of Test #1 at elevation about 5 feet below Test #2. Material consists of a silty gravel with many +6 inch cobbles, some rotten stones, tabular pieces, and many granitic cobbles. It shows rough stratification from varying amounts of coarse sand and vague orientation of stones. Most stones are sub-angular but a few are sub-rounded. Material is ill-sorted and little transported.	
4	1966	0-5	---	No	N	O	T	S	A	M	P	L	E	D	Test #4 was dug at point N-50-E of barn 315' N-85-W of Test #3 on low rounded ridge 30' from stone wall at lower side of field. Top 2 feet is boulders, cobbles, and soil overlying a light brown silt to clay. It was not sampled.
5	1966	2.5-9	0-2.5	No	80.9	68.0	46.9	18.0	8.0	1	31.0%	Gran. Borrow (Grav.)		Test #5 was located at a point 65' S-75-W of Test #1 and 20' N-15-W of Test #3. Material tested is a silty gravel with rotten stones, tabular pieces, fewer +6 inch cobbles than Test #3 had, and many minus 2-inch stones. It seems to	

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 6

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
						1½"	5/8"	#4	#100	#270				
														get cleaner below 6 feet and goes to a silt to clay at 9 feet. It fails to meet requirements for Item 201 because excessive material passes the #100 and #270 sieves. It is acceptable for Item 105.
4	1	1966	1.5-8.5	0-1.5	Yes	71.3	62.7	47.4	20.0	8.5	1	---	Gran. Borrow (Grav.)	Owner: Robert Dickinson. Area has several pits S-35-E of Brownington Pond immediately northwest of Town Highway #9. Test #1 was in southeast face of west pit. Material tested is 4 feet of silty gravel overlying 3 feet of clean gravel. There is a silt lens between. It fails to meet requirements for Item 201 because excessive material passes the #100 and #270 sieves. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105.
	2	1966	1.0-5.5	0-1.0	Yes	100	100	100	15.0	2.0*	1	---	Sand	Test #2 was in floor of west pit opposite Test #1. Material is fine sand which becomes silty with depth. Hole bottomed at 7.5 feet. It meets requirements for Item 202.
	3	1966	2-6.5	0-2	Yes	86.7	76.3	48.8	18.0	8.0	1	---	Gran. Borrow Gravel	Test #3 was in east face of west pit. Material sampled is 3.5 feet of dirty gravel and 1 foot of underlying clean

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 7

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
						1½"	5/8"	#4	#100	#270				
4	1966	2.5-7.5	0-1.5	No	60.7	34.9	23.6	31.0	11.5	1	34.0%	---	gravel. Below 2.5 feet of silty sand was not tested. Excessive material passing the #100 and #270 sieves fails for Item 201, but it is acceptable for Item 105. There was insufficient proper size stone for percent of wear test. Test #4 was in field at foot of knoll 135' S-75-E of Test #3. Material tested is 5 feet of dirty coarse gravel overlain by 1 foot of sandy silt which was not tested.	
5A	1966	3-13	0-3	Yes	72.4	62.2	41.9	8.0	4.0	1	24.0%	Gravel	Tests #5A and #5B were in west face of smaller center pit 90' N-55-E of Test #3. Test #5A material is cobbley gravel which is acceptable for Item 201.	
5B	1966	13-22	See Test 5A	Yes	90.0	89.3	84.8	23.7	10.5 8.9*	1	---	---	Test #5B material, a pebbly medium sand below #5A, has excessive fines passing the #100 and #270 sieves.	
5C	1966	22-30	See Test 5B	Yes	100	100	100	22.8	7.0 6.9*	1	---	Gran. Borrow (Sand)	Test #5C was in floor of smaller center pit adjacent to #5B. Material is fine silty sand. Excessive fines pass the #100 and #270 sieves making it unacceptable for Item 202. It is acceptable for Item 105.	
6	1966	3-16	0-3	Yes	100	100	100	15.4	6.0 4.6*	1	---	Sand	Test #6 was in south face of smallest pit about 120' N-70-E of Test #5. Material tested is 3'-9' pebbly silty sand; 9'-12'	

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 8

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		
						1½"	5/8"	#4	#100	#270						
															coarse sand; 12'-13.5' hematite-limonite zone; 13.5'-16' coarse sand. Water table was encountered at 16 feet. Material is acceptable for Item 202.	
5	1	1966	0-6	Stripped	Yes	N	0	T	S	A	M	P	L	E	D	Owner: Ralph Swett. Area is north end of field east of Parker farm on Town Highway #7. Test #1 was in old pit area immediately north of field 90' east of Town Highway #7. Material is 6 feet of silt overlying a boulder till. Test #2 was at north edge of field 25' west of utility line pole. The 4 feet of pebbly sand and clean sand layers sampled met requirements for Item 202. Bottom was a silt and boulder till-not sampled. Test #3 was at west edge of field 145' S-10-W of Test #2 and 20' east of Town Highway #7. Material is silty gravel with boulders which overlies water table at 7.5 feet. It fails to meet the requirements for Item 201 because an excess passes the #270 sieve. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105.
	2	1966	2-6	0-2	No	100	95.2	89.1	5.2	3.0	1½	---			Sand	Test #4 at edge of woods 185' S-70-E of Test #2 is loamy
	3	1966	3.5-8	0-3.5	No	70.8	64.2	47.4	15.0	7.5	3	---			Gran. Borrow (Grav.)	
	4	1966	0-2.5	---	No	N	O	T	S	A	M	P	L	E	D	*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 9

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	
						1½"	5/8"	#4	#100	#270					
6	1	1966	1-7	0-1	No	N	O	T	S	A	M	P	L	E	D
7	1	1966	0-4	Stripped	Yes	N	O	T	S	A	M	P	L	E	D
	2	1966	1-3.5	0-1	No	N	O	T	S	A	M	P	L	E	D
	3	1966	1.5-8	0-1.5	No	79.9	71.5	47.4	20.0	10.0	1	---		Gran. Borrow (Grav.)	
8	1	1966	2-9.5	0-2	Yes	73.9	64.6	50.5	9.0	4.0	1	27.6%		Gran. Borrow (Grav.)	Owner: Lester Cleveland. Area is a meadow west of Town Highway #16 and east of pit
						*Percentage of Total Sample									

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 10

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
						1½"	5/8"	#4	#100	#270				
	2	1966	2-9	0-2	Yes	100	100	100	16.0	2.0*	1	---	Sand	near Coventry Town Line. Test #1 was at southwest edge of pit. Material, a cobbly gravel with silt and sand fails to meet requirements for Item 201 because of (1) a slight excess passing the #270 sieve and (2) slightly excessive wear. It meets requirements for Item 105. Test #2 was at point 130' northeast of Test #1 and 170' from Town Highway #16. Material tested is silty sand which is acceptable for Item 202.
	3	1966	1.5-7.5	0-1.5	No	57.0	51.7	38.8	25.0	11.3	3	30.0%	---	Test #3 was at point 75' S-10-E of Test #2 and 120' east of Test #1. Material tested is silty sand with cobbles. There is excessive material passing the #100 and #270 sieves.
9	1	1966	2-10	0-2	No	90.0	77.5	59.7	4.6	4.0 2.4*	1½	---	Gran. Borrow (Grav.)	Owner: Lester Cleveland. Area consists of southeast portion of cornfield intersected by Coventry Town Line. Test #1 was at edge of cornfield N-75-W of an abandoned house on Town Highway #16. Material is of ice-contact origin. A 2-foot interval of silty gravel and 6 feet of pebbly sand were sampled. Material is rejected for Item 201 because an excess passes

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 11

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
						1½"	5/8"	#4	#100	#270				
2	1966	3.5-10.5	0-2		No	88.0	81.0	57.1	11.0	5.0	1	---	Gran. Borrow (Grav.)	the #270 sieve. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105. Test #2 was at edge of cornfield N-85-W of house and 120' south of Test #1. Material tested was 7 feet of silty gravel with an occasional cobble below 1.5 feet of pebbly sand. There was insufficient proper size stone for percent of wear test.
3	1966	1.5-8.5	0-1.5		No	85.4	81.5	66.8	5.3	4.3 2.9*	1½	---	Gran. Borrow (Grav.)	Test #3 was at edge of cornfield S-85-W of house and 130' south of Test #2. Material tested was 7' of pebbly sand and gravel. Material gradation was between sand and gravel, hence unacceptable for Items 201 and 202. There was insufficient proper size stone for percent of wear test. It meets requirements for Item 105.
4	1966	1-10.5	0-1		No	74.7	68.5	53.6	20.0	6.0	1	---	Gran. Borrow (Grav.)	Test #4 was in northeast corner of cornfield 155' north of Test #1. Material tested is dirty coarse gravel and pebbly sand. Excessive portion passes the #100 and #270 sieves making it unacceptable for Item 201. It meets specifications for Item 105.
5	1966	1.5-11.0	0-1.5		No	100	100	97.2	31.0	6.5*	1½	---	Gran. Borrow	Test #5 was at south end of cornfield 110' west of its

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 12

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
						1½"	5/8"	#4	#100	#270				
	6	1966	2-8.5	0-2	No	100	95.1	85.7	4.3	2.0 1.7*	1½	---	Sand	east edge. Material sampled is fine sand with pebbles and silt seams. It is acceptable for Item 105. Test #6 was at edge of corn-field 350' north of south end and 160' south of Test #3. Material tested is medium to fine pebbly sand. It meets requirements for Item 202.
10	1A	1966	2-9.5	0-2	Yes	78.5	68.5	54.0	3.8	3.0	1	34.2%	Gran. Borrow (Grav.)	Owner: Willie Woodard. Area is pit located between NB stations 2590 and 2600 of Interstate I91. Test #1A was of upper east face of pit in gravel stratum. Material is coarse gravel which fails for Item 201 because of excessive wear. It meets requirements for Item 105.
	1B	1966	9.5-22	See Test 1A	Yes	100	79.7	68.0	3.4	2.5 1.7*	1	---	Gran. Borrow (Sand)	Test #1B was of middle and lower strata in face of pit. Material is coarse sand with pebbles and cobbles. It fails to meet requirements for Item 202 because insufficient material passes the #4 screen.
	2	1966	0.5-15	0-0.5	Yes	92.0	86.1	70.9	2.8	1.0 0.7*	1	---	Gran. Borrow (Sand)	Test #2 was of lift level at point 115' northeast of pit. Material is gravelly sand with cobbles. It fails to meet requirements for Item 202 because too much material failed to pass the 1½-inch screen. It meets requirements for Item

*Percentage of Total Sample

TABLE I

BROWNINGTON 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 % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks	
						1½"	5/8"	#4	#100	#270					
11	1	1966	1-6	0-1	No	N	O	T	S	A	M	P	L	E	D
11	2	1966	2-5	0-2	No	N	O	T	S	A	M	P	L	E	D
	3	1966	2.5-10	0-2.5	No	82.0	75.7	62.5	11.0	6.0	1	24.0%		Gran. Borrow (Grav.)	Owner: Harry Thompson. Area is a hayfield south of Town Highway #17 and west of barn. Test #1 was 240' N-57-W of barn and 120' from Town Highway #17. Because an old pail was dug up at 6 feet in dirty gravel, it was not sampled.
	4	1966	3.5-8.5	0-1.5	No	100	90.4	82.4	11.6	5.0 4.1*	1	---		Sand	Test #3 was at northwest corner of field. Material is fine gravel with silt becoming finer with depth. It fails to meet requirements for Item 201 because an excess passes the #4 screen and the #270 sieve. It is acceptable for Item 105. Test #4 was in field S-70-E of Test #3 and 25' from telephone pole. Material is 1.5'-3.5' dirty gravel; 3.5'-8.5' clean sand becoming silty with depth and with gravel pockets; 8.5'-10' gravel. The sand meets requirements for Item 202.
	5	1966	1.5-10	0-1.5	No	69.2	61.8	50.8	12.0	5.5	1	---		Gran. Borrow (Grav.)	Test #5 was dug 100' N-85-W of Test #4 about 8' below its elevation and 11' above Test #3. Top 1.5 feet of material is overburden going to a silty gravel with soft stones. Below 3.5 feet gravel is cleaner
	*Percentage of Total Sample														

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 14

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	
						1½"	5/8"	#4	#100	#270					
6	1966	0-6	---	No	N O T S A M P L E D										with only a few +6 inch sub-rounded cobbles. A sand lens at 5 to 6 feet grades into gravelly sand along its margins. Gravelly sand occurs from 6-10 feet. Material fails specifications for Item 201 because excessive material passes the #270 sieve for its stone content. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105. Test #6 was 150' S-25-W from Test #5 and 200' S-10-E from Test #3. Top 6 feet is soil over a silty and bouldery poorly sorted material with many rotten stones. It was not sampled.
7	1966	3-10	0-3	No	85.9 85.9 75.8 7.6 5.0 3.8*					1	---		Gran. Borrow (Sand)		Test #7 was S-70-W of barn at a point 150' S-65-E of Test #6 and due south of Test #4 on low rounded ridge. Material sampled consists of 3 feet of sandy gravel overlying 4 feet of coarse clean sand. It fails to meet requirements for Item 202 because excessive material is coarser than the 1½-inch screen. It is acceptable for Item 105.
8	1966	3-10	0-2	No	96.8 89.3 75.0 7.5 3.5 2.6*					1	19.8%		Sand		Test #8 was S-50-W of barn at a point 335' S-15-E of Test #7. Material tested consists of 3.5 feet of sand - gravel

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 15

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
						1½"	5/8"	#4	#100	#270				
12	9	1966	4-10.5	0-4	No	88.7	85.2	81.3	4.9	2.0 1.6*	2½	---	Gran. Borrow (Sand)	overlying 3.5 feet of medium sand. It meets the requirements for Item 202. Test #9 was S-45-W of barn at edge of field 90' S-50-E of Test #8. Material tested is silty sand with stones. It fails to meet requirements for Item 202 because excessive material is coarser than the 1½-inch screen. It meets the specifications for Item 105. Test #10 was S-40-W of barn and 150' due east of Test #9. Material is too fine to be acceptable for Item 105.
	10	1966	2-7.5	0-2	No	100	100	84.2	53.0	23.0 19.4*	1½	---	---	
13	1	1966	2-6	0-2	No	100	100	100	42.0	4.0*	1½	---	Gran. Borrow (Sand)	Owner: Willie Woodard. Area is hayfield south of house. Test #1 was S-10-E of barn at far edge of field. Material is silty medium-fine sand. An excess of material passes the #100 sieve failing it for Item 202. It is acceptable for Item 105. A foot of saturated clay lies below sample.
	2	1966	2.5-6	0-2.5	No	100	99.0	97.5	9.7	1.5*	2½	---	Sand	Test #2 was in field near house about 520' N-5-E of Test #1. Material tested is pebbly clean medium sand. It meets requirements for Item 202. Saturated clay also underlies sample.
	1	1966	1-8	0-1	No	100	100	95.0	6.6	3.0 2.9*	3	---	Sand	Owner: Irving Prue. Area is large hayfield on terrace in southwest corner of township.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 16

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
						1½"	5/8"	#4	#100	#270				
2	1966	0.5-6	0-0.5	No	100	100	92.4	14.8	3.3 3.0*	2	---	Sand		Test #1 was at point south of gully and west of old buildings 300' west of proposed I-91 southbound lane. Material is a medium to fine-grained clean pebbly sand. It meets requirements for Item 202. Saturated clay was encountered at 8 feet.
3	1966	2.5-7.5	0-1	No	93.6	84.0	82.7	8.2	2.5 2.1*	1½	---	Gran. Borrow (Sand)		Test #2 was in extension of field at extreme northeast corner. Material is clean sand with gravel lens at bottom. It meets requirements for Item 202. It is underlain by saturated clay.
4	1966	2-8	0-2	No	100	96.7	90.0	4.5	1.5 1.4*	1	---	Sand		Test #3 was near south edge of field at point 165' west of Benchmark A.P. 5. Material is clean sand with occasional pebbles and cobbles. Too much material is retained by the 1½-inch screen to be acceptable for Item 202. It is acceptable for Item 105.
5	1966	1-5	0-1	No	100	94.1	92.1	5.5	1.8 1.7*	2	---	Sand		Test #4 was in west-center of field 325' S-50-W of Test #1 and 180' N-50-E of Test #3. Material is similar to that of Test #3. It meets the requirements for Item 202.
														Test #5 was at west end of field 350' N-5-W of Test #4. Material is mainly pebbly sand, but there was a white clay lens at west end of hole. It

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 17

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
						1½"	5/8"	#4	#100	#270				
14	1	1966	1-8	0-1	No	100	100	100	4.0	2.3*	2½	---	Sand	meets requirements for Item 202. Clay is encountered at 5 feet.
	2	1966	2-10	0-2	No	100	100	90.7	3.6	1.3 1.2*	1½	---	Sand	Owner: Carl Ticehurst. Area is open meadow in woods N-15-W of house and due north of new schoolhouse. Test #1 was at north end of meadow. Material is coarse clean sand. It is acceptable for Item 202. Test #2 was on knoll in center of meadow 240' S-25-W of Test #1. Material is coarse clean sand acceptable for Item 202.
	3	1966	2-5	0-2	No	N	O	T	S	A	M	P	L	E D
15	1	1966	2.5-8	0-1	No	100	100	91.2	4.6	2.0 1.8*	2	---	Sand	Owner: Carl Ticehurst. Area is clearing in heavy woods at point N-5-W of Robinson's house. Test #1 was on high point in wet meadow with a few trees. Sampled stratum was a clean pebbly sand. It is overlain by 1.5 feet of fine dirty gravel and underlain by 1.5 feet of wet silty clay. It meets the requirements for Item 202.
16	1A	1966	2-5	0-2	Yes	84.1	73.5	53.9	13.0	6.0	2	---	Gran. Borrow (Grav.)	Owner: Albert Robillard. Area includes pit south of bend in Town Highway #15 at point about 0.25 mile east

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 18

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
						1½"	5/8"	#4	#100	#270				
	1B	1966	5-12	See Test 1A	Yes	97.6	96.4	89.8	4.5	2.3 2.1*	1	---	Sand	of Robillard's house. Test #1 was in west center of face. Test #1A was of a coarse gravel with 6-inch silt seam. It fails to meet requirements for Item 201 because excessive material passes the #270 sieve. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105.
	2	1966	1-9		Yes	87.6	75.8	58.5	15.0	7.0	1	---	Gran. Borrow (Grav.)	Test #1B was a medium clean sand with pebbles. It meets requirements for Item 202. Test #2 was on top of minor ridge 165' S-75-W of Test #1. Material is a coarse cobbly gravel with an occasional boulder. Too much material passes the #270 sieve for it to qualify for Item 201. There was insufficient proper size stone for percent of wear test. It meets requirements for Item 105.
17	1	1966	1.5-6.5	0-1	No	100	100	95.9	3.8	1.0*	1½	---	Sand	Owner: Carl Ticehurst. Area is a pasture north of the west end of a longitudinal ridge N-60-W of house. Test #1 was on top of low knoll 35' west of rock wall. Material tested is clean pebbly sand. It is acceptable for Item 202.
18	1	1966	2-10	0-2	No	100	95.3	82.6	8.3	1.0 0.8*	1½	---	Sand	Owner: Carl Ticehurst. Area is a terrace in the field N-15-E of barn. Test #1 was on

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 19

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
						1½"	5/8"	#4	#100	#270				
19	1	1966	6-11	0-6	No	100	100	96.8	25.2	6.8 6.6*	2	---	Gran. Borrow (Sand)	top of terrace 110' west of Town Highway #12. Material is silty fine sand which meets requirements for Item 202.
	2	1966	0.5-11.5	0-0.5	No	100	100	100	35.0	6.0*	1	---	Gran. Borrow (Sand)	Owner: Carl Ticehurst. Area is a long ridge trending N-40-W from Town Highway #6. Test #1 was at east end of ridge 55' from Town Highway #6. Material is clean sand. It fails to meet the requirements for Item 202 because excess material passes the #100 and #270 sieves. It is acceptable for Item 105. Test #2 was dug on top of ridge 60' from Test #1 in stripped area. Top 0.5' is a pebbly soil that grades into a fine tan sand which has thin silty laminae. It bottoms in very coarse white sand with pebbles. Because an excess of material passes the #100 and #270 sieves it fails Item 202 specifications. It meets requirements for Item 105.
	3	1966	1-10	0-1	No	100	100	89.6	4.5	1.8 1.6*	1½	---	Sand	Test #3 was in high saddle on ridge 0.07 mile northwest of Tests #1 and #2. Material is a clean gravelly sand. It meets requirements for Item 202.
	4	1966	2-12	0-2	Yes	100	100	82.4	9.9	4.0 3.3*	1	---	Sand	Test #4 was in center of south face of pit located 0.07 mile west of Test #3 on ridge. Ma-

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 20

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			
						1½"	5/8"	#4	#100							
	5	1966	1.5-9.5	0-1.5	No	N	O	T	S	A	M	P	L	E	D	Material is clean pebbly sand which meets requirements for Item 202. Test #5 was at northwest end of ridge 250' west of pit. Material is fine red sand grading into silty clay at shallow depth. It was not tested.
20	1A	1966	2-17	0-2	Yes	66.5	55.7	38.9	11.0	6.5	1	29.6%	Gran. Borrow (Grav.)	Owner: Albert Robillard. Area consists of field with large pit S-60-W of house and barn. Test #1 was in southwest face of pit. Test #1A material is sandy gravel with cobbles. It fails to meet the grading requirements for Item 201 because an excess of material passes the #270 sieve. It meets specifications for Item 105.		
	1B	1966	17-22.5	See Test 1A	Yes	80.6	75.3	63.4	3.0	1.3	1	---	Gran. Borrow (Grav.)	Test #1B material is bedded sand with pebbles and a few cobbles below Test #1A. It did not contain enough stone to be acceptable for Item 201 but meets requirements for Item 105. There was insufficient proper size stone for percent of wear test.		
	2	1966	1-10.5	0-1	Yes	100	95.5	83.6	8.4	3.0	1	---	Sand	Test #2 was in floor adjacent to Test #1. Material below 1 foot of loamy gravel is clean granite sand with cobbles. It is acceptable for Item 202.		
	3A	1966	3.5-6	0-1	Yes	92.7	88.7	65.3	14.0	6.0	1	---	Gran. Borrow (Grav.)	Test #3 was at north edge of terrace east of pit. A 2.5-		
						*Percentage of Total Sample										

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 21

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	
						1½"	5/8"	#4	#100	#270					
															foot interval of coarse dirty gravel with boulders was not sampled. Test #3A was of a medium gravel which has an excess of material passing the #270 sieve and too little stone content to be classified as Item 201. There was insufficient proper size stone for percent of wear test. It meets the requirements for Item 105.
3B	1966	6-10		See Test 3A	Yes	100	100	85.6	12.0	5.0 4.3*	1	---	Sand	Test #3B was of clean sand and silt layers underlying Test #3A. It meets the requirements for Item 202.	
4	1966	1-9		0-1	No	59.6	52.1	37.6	10.0	5.0	1	29.6%	Gran. Borrow (Grav.)	Test #4 was on a small knoll S-50-W of barn at point 220' northeast of Test #3. Material tested is sandy gravel with cobbles. It fails abrasion requirements for Item 201 but is acceptable for Item 105.	
5	1966	2.5-10		0-2.5	No	58.5	57.5	50.4	4.0	1.9*	1	---	Gran. Borrow (Grav.)	Test #5 was in side of northwest terrace due west of barn, due north of Test #3 and 7' from trace of old road. Material apparently met requirements for Item 201, but there was insufficient proper size stone for percent of wear test. It meets the requirements for Item 105.	
6	1966	2-10.5		0-2	No	100	100	95.9	13.4	5.0 4.8*	1	---	Sand	Test #6 was at west end of northwest terrace at point 350' N-80-W of Test #5. Ma-	

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 22

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
						1½"	5/8"	#4	#100	#270				
	7	1966	1.5-10	0-1.5	No	74.9	67.3	57.0	11.0	4.0	1	---	Gran. Borrow (Grav.)	Material tested consists of 2'-4.5' dirty gravelly sand; 4.5'-8' silt; 8'-10.5' clean white sand. It meets the requirements for Item 202. Test #7 was 215' southwest of barn on edge of terrace. Material tested consists of 1.5'-4.5' dirty cobbly gravel; 4.5'-6' clean pebbly sand; 6'-10' clean coarse gravel. It meets the grading requirements for Item 201 but there was insufficient proper size stone for percent of wear test.
21	1	1966	2-14	0-2	Yes	100	100	88.6	10.6	2.8 2.5*	1	---	Sand	Owner: Steve Pudvah. Area is terrace situated west of Town Highway #6, opposite Lyle Bullock's house and northeast of Pudvah pit. Test #1 was in extreme northeast face of pit. Material tested is a clean pebbly sand which is acceptable for Item 202.
22	1	1966	4-20	0-4	Yes	100	100	96.4	2.9	1.3*	1	---	Sand	Owner: Steve Pudvah. Area is western part of pit area near Brownington Center. Test #1 was in west center of face. Material tested is overlain by 4 feet of dirty cobbly gravel. Tested interval consists of 15 feet of pebbly sand with a 1-foot layer of clean fine sand in the middle. It is acceptable for Item 202.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 23

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 24

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	
						1½"	5/8"	#4	#100	#270					
	3	1966	2-(?)	0-2	N O T S A M P L E D										north of schoolhouse. Material tested is a dirty cobbly gravel that bottoms in clay. It fails to meet grading requirements for Item 201 because an excess passes the #270 sieve. It is acceptable for Item 105. Test #3 was dug east of house at east edge of a possible old stream bed. Top 2 feet is soil and stones going to a moist silt to clay with stones.
24	1	1966	3-7.5	0-2	No	100	98.2	84.0	5.9	3.5 2.9*	2	---	Sand	Owner: Harry Stevens. Area is a high terrace north of house. Test #1 was in northeast corner of field. Material tested is a clean pebbly sand. This is overlain by 1 foot of silty sand and underlain by 2 feet of cobbles. Material is acceptable for Item 202.	
	2	1966	1.5-9.5	0-1.5	No	100	100	97.0	46.6	23.0 22.3*	1	---	---	Test #2 was at southwest corner of terrace 210' S-50-W of Test #1. Material is silty fine sand, too fine to be acceptable for Item 105.	
25	1	1966	1.5-10	0-1.5	No	84.0	73.2	54.2	11.0	4.3	1	43.8%	Gran. Borrow (Grav.)	Owner: Steve Pudvah. Area is field east of schoolhouse and north of State Aid Highway #2. Test #1 was on rise in southwest corner of terrace 90' south of hedgerow. Material is sandy silt and gravel which becomes sandier with depth.	

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 25

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	
						1½"	5/8"	#4	#100	#270					
	2	1966	2-8	0-2	No	N	O	T	S	A	M	P	L	E	D
26	1A	1966	2.5-11	0-2.5	Yes	69.7	61.0	40.4	14.0	5.8	1	26.0%	Gran. Borrow (Grav.)	Brownington Town Pits. Area is smaller pit south of Town Highway #30. Test #1 was below high point of east face. Test #1A material is 2.5'-5.5' silty pebbly gravel; 5.5'-7' fine sand, 7'-11' dirty grading into clean fine gravel. Material fails to meet requirements for Item 201 because an excess passes the #270 sieve. It meets requirements for Item 105.	
	1B	1966	11-21.5	See Test 1A	Yes	100	100	75.6	11.3	3.0 2.3*	1	---	Sand		
27	1	1966	4-10	0-1.5	No	55.3	50.6	38.6	15.0	7.0	1	---	Gran. Borrow (Grav.)	Owner: John Gillette. Area is a terrace south of the Brownington branch of Willoughby River and north of Wells Brook. A 2.5-foot thickness of sandy silt with cobbles and boulders overlies tested section which is rotten cobble gravel with a sand lens. Material fails to meet requirements for Item 201 because an excess passes the #270 sieve.	

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 26

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	Abras ion AASHO T-4-35	Passes VHD Spec.	Remarks	
						1½"	5/8"	#4	#100	#270					
	2	1966	1.5-9	0-1.5	No	100	95.3	93.4	28.0	12.5 11.7*	3	---	---	There was insufficient proper size stone for percent of wear test. It meets requirements for Item 105. Test #2 was at edge of spruce trees 435' north of Test #1. Material, a sandy silt with a few pebbles, has an excess passing the #100 and #270 sieves which makes it unacceptable for Item 105.	
	3	1966	1.5-5	0-1.5	No	N	0	T	S	A	M	P	L	E D	Test #3 was near the south edge of the terrace 200' east of Test #1. Material is sandy silt which was not sampled.
28	1	1966	2.5-10	0-1	No	100	100	100	23.0	6.0*	1½	---	Gran. Borrow (Sand)	Owner: John Guillette. Area is the west end of a field that lies east of Brownington town pits (Map Identification #26 and #29). Test #1 was 70' east of smaller pit in northwest corner of field on terrace tongue. Sampled material is overlain by 1.5 feet of pebbly sand. Material tested is a clean fine sand with silt seams and a pebbly sand lens. Because excessive material passes the #100 and #270 sieves, it is not acceptable for Item 202. It is acceptable for Item 105.	
	2	1966	2-10	0-2	No	87.8	81.2	75.1	4.5	2.5 1.9*	1	---	Gran. Borrow (Sand)	Test #2 was at west end of field 25' east of pit and 250' S-30-W of Test #1. Material is interbedded sandy gravel	

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 27

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
						1½"	5/8"	#4	#100	#270				
	3	1966	2.5-10	0-2.5	No	76.6	69.8	59.1	7.0	3.0	2	20.6%	Gravel	and fine sand beds. It fails to meet requirements for Item 202 because too much material is retained on the 1½-inch screen. It meets requirements for Item 105. Test #3 was in southwest corner of field 155' south of Test #2. Material is bedded gravel and silty sand which passes requirements for Item 201.
29	1A	1966	3.5-18	0-3.5	Yes	88.0	82.5	66.5	11.0	5.0	2	---	Gran. Borrow (Grav.)	Brownington Town Pit. Area is large pit east of new schoolhouse at intersection of State Aid Highway #2 and Town Highway #30. Test #1 was in center of southeast face. Test #1A material was interbedded fine gravel and pebbly sand with one boulder and soft stones. Because too much material passes the #4 screen, it is unacceptable for Item 201. There was insufficient proper size stone for percent of wear test. It met requirements for Item 105.
	1B	1966	18-40	See Test 1A	Yes	100	96.8	79.1	7.1	2.0 1.6*	1	---	Sand	Test #1B consisted of interbedded coarse and fine sands with pebbles and silt seams. It is material acceptable for Item 202.
	1C	1966	40-60		Yes	95.2	90.4	75.3	6.0	3.0 2.3*	1	---	Sand	Test #1C was of similar material to Test #1B with a boulder at the bottom. It also

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 28

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
						1½"	5/8"	#4	#100	#270				
	2	1966	3-44	0-3	Yes	87.2	80.4	65.9	6.6	2.0*	1	---	Gran. Borrow	met requirements for Item 202. Test #2 was of southwest face. Material is 3'-9' very fine silty gravel; 9'-15' gravel; 15'-44' interbedded fine to coarse pebbly sands with silty sand seams. At about 18 feet and at 6 feet above floor are coarse gravel lenses. It fails to meet requirements for Item 201 because too much passes the #4 screen. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105.
30	1	1966	2-11	0-1	No	100	95.2	90.0	5.4	2.3 2.1*	3	---	Sand	Owner: Harley Blake. Area is a high bluff southeast of the Brownington branch of the Willoughby River. Test #1 was on top of south end of bluff 3 feet north of a fence. Material tested is a clean pebbly sand acceptable for Item 202 that underlies 1 foot of fine dirty gravel.
	2	1966	2-26	0-2	No	100	98.3	96.6	2.8	1.8 1.7*	1	---	Sand	Test #2 was below Test #1 on bluff face. Material is interbedded fine to coarse and pebbly sand with some wet sand near the base. It is acceptable for Item 202.
	3	1966	3.5-10	0-1	No	89.8	85.4	69.3	6.0	3.0	1	21.2%	Gran. Borrow (Grav.)	Test #3 was next to fence at point 136' S-40-E of Test #1. Material tested is overlain by 1.5 feet of fine dirty gra-

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 29

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
						1½"	5/8"	#4	#100	#270				
4	1966	3.5-15	0-1		Yes	100	97.7	94.8	7.6	2.3 2.2*	1	---	Sand	vel and 1-foot clay seam. Tested interval consists of clean sand with increasing pebbles to depth. It does not have enough stone to meet specifications for Item 201, but it does pass Item 105 requirements.
5	1966	1-10	0-1		Yes	100	100	96.1	3.8	2.0 1.9*	1	---	Sand	Test #4 was in face of a pit excavated in bluff northwest of depression in field. A 2.5-foot interval of dirty fine gravel was not sampled at top of section. The underlying 11.5 feet of fine to coarse and pebbly sand meets requirements for Item 202. Test #5 was in floor of pit. Material is steeply dipping fine to coarse pebbly sands that are acceptable for Item 202.
6	1966	6-13	0-1		Yes	100	100	96.1	9.6	1.8 1.7*	1	---	Sand	Test #6 was in face of pit at north end of bluff. Two feet of yellow sand and 3 feet of dirty fine gravel overlie sampled section. It consists of a fine to medium clean pebbly sand which is acceptable for Item 202.
7	1966	2-9	0-2		No	100	100	100	50.0	13.0*	2	---	---	Test #7 was on east edge of terrace N-30-E of Test #3 and 335' S-5-E of Test #6. Material is a silty fine sand unacceptable for Item 105.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 30

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 31

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
						1½"	5/8"	#4	#100	#270				
33	1	1966	2.5-10	0-2.5	No	100	95.5	83.0	7.4	2.3 1.9*	1	---	Sand	Owner: Francis Davignon. Area is an east-west trending ridge in a meadow surrounded by cedar and spruce trees located about 400' south of the Brownington town pits. Test #1 was at high point near west end of ridge. Material sampled is interbedded fine and pebbly sand layers. It meets requirements for Item 202. Test #2 was at east end of ridge. Material sampled is interbedded fine and pebbly sand layers with an occasional cobble. It barely fails to meet requirements for Item 202 because a slight excess passes the #100 sieve. It meets requirements for Item 105. A 1.5-foot thickness of loamy sand overlies sampled interval.
	2	1966	2.5-10	0-1	No	100	98.4	91.9	19.2	5.0 4.6*	1	---	Gran. Borrow (Sand)	
34	1	1966	1-5	0-1	No	100	100	99.0	40.6	8.0 7.9*	2	---	Gran. Borrow (Sand)	Owner: Francis Davignon. Area is hilltop in field north of barn and old garage at end of Town Highway #29. Test #1 was east of fence near fox hole.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 32

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	
						1½"	5/8"	#4	#100	#270					
35	1	1966	3.5-11.5	0-1.5	Yes	83.2	79.8	68.6	5.0	3.0	1	---	Gran. Borrow (Grav.)	Material is silty fine sand which has an excess passing the #100 and #270 sieves, thus failing it for Item 202. It meets requirements for Item 105.	
	2	1966	0-3.5	--	Yes	N	O	T	S	A	M	P	L	E D	Owner: Harry Jensen. Area is field with pit south of State Aid Highway #1 and east of house. Test #1 was in far southwest face of pit. Material tested is overlain by 2 feet of rotten cobbly gravel. It bottoms on hardpan (pebbly clay). It fails to meet requirements for Item 201 because an excess of material passes the #4 screen. There was insufficient proper size stone for percent of wear test. It is a cobbly gravel acceptable for Item 105.
	3	1966	3.5-10	0-1.5	Yes	74.4	69.0	54.3	12.0	5.5	1	32.8%	Gran. Borrow (Grav.)	Test #2 was in floor near Test #1. Material is hardpan. Test #3 was in north face 90' north of Test #1. Stratification in hole was similar to that of Test #1. Material fails to meet grading requirements for Item 201 because an excess passes the #270 sieve. It meets requirements for Item 105.	
	4	1966	1-3	0-1	No	N	O	T	S	A	M	P	L	E D	Test #4 was 270' west of Test #1 near end of field. Material is bouldery till.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 33

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
						1½"	5/8"	#4	#100	#270				
36	5	1966	2-10	0-2	No	61.1	52.1	38.6	13.0	5.0	1	22.6%	Gravel	Test #5 was 235' S-70-W of Test #1 and 75' S-40-E of Test #4. Material is a coarse silty gravel which is acceptable for Item 201.
	6	1966	2-7.5	0-2	No	100	100	97.0	32.0	16.0 15.5*	1	---	---	Test #6 was at far north corner of field next to State Aid Highway #1. Material is a medium sand with a few pebbles. An excess passes the #100 and #270 sieves making it unacceptable for Item 105. Water was encountered at 7.5 feet and clay below that.
36	1	1966	3-9	0-1	No	60.9	58.9	55.2	5.0	2.3	1½	---	Gravel	Owner: Marjorie Moore. Area consists of end of field between deep wash on south and woods on north about 1000' northwest of barn. Test #1 was on slope 9' from edge of wash at northeast corner. Material is 1'-3' silt (not sampled) 3'-6' sand; and 6'-9' cobbley gravel, which combined meet the grading requirements for Item 201. There was insufficient proper size stone for percent of wear test.
	2	1966	2-13.5	0-2	No	55.9	49.5	41.5	9.0	3.8	1	23.1%	Gravel	Test #2 was in center of upper north face of wash. Material tested consists of 2'-7' pebbly sand; and 7'-13.5' clean cobbley gravel. It meets requirements for Item 201. From 13.5' to 31.5' there is silty gravel that was not tested.

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 34

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	
						1½"	5/8"	#4	#100	#270					
37	3	1966	1-10	0-1	No	100	100	100	33.0	8.0*	1	---	Gran. Borrow (Sand)	Test #3 was next to woods on top of terrace 165' N-20-E of Test #2. Material is a silty fine sand which meets requirements for Item 105 but has an excess passing the #100 and #270 sieves that makes it unacceptable or Item 202.	
	4	1966	1-6	0-1	No	N	O	T	S	A	M	P	L	E D	Test #4 was at point 300' N-10-E of Test #3. Material is silt to clay.
	5	1966	3-9	0-1	No	69.2	57.3	44.8	7.0	3.3	1	20.0%	Gravel	Test #5 was in corner of field 300' N-10-E of Test #4. Two feet of silt overlying and one foot of pebbly sand underlying sampled interval were not tested. Material tested is a fine sandy gravel which meets requirements for Item 201.	
38	1	1966	1-10	0-1	No	100	100	100	71.0	34.0*	1	---	---	Owner: Marjorie Moore. Area is a ridge at the edge of woods N-15-W of house. Test #1 was on knoll at northwest end of ridge. Material is a silty fine sand unacceptable for Item 105.	
	2	1966	1-10	0-1	No	100	100	100	69.0	31.0*	1	---	---	Test #2 was on knoll at southeast end of ridge 300' S-25-E of Test #1 and 120' from woods. Material is same as for Test #1, unacceptable for Item 105.	
38	1	1966	3.5-11.5	0-1	Yes	88.6	82.5	67.7	6.0	2.3	3½	---	Gran. Borrow (Grav.)	Owner: Charles Chase. Area is open field with pits west of Chase's house on State Aid Highway #2. Test #1 was in	

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 35

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
						1½"	5/8"	#4	#100	#270				
2	1966	1-6.5	0-1	No	92.2	76.8	55.9	13.0	5.0	1½	---	Gran. Borrow (Grav.)		west face of center pit. Tested material is coarse gravel with a few cobbles. It meets requirements for Item 105, but too much material is finer than the #4 screen for Item 201 classification. There was insufficient proper size stone for percent of wear test. It is underlain by boulder till and overlain by 2.5 feet of interbedded sand and silt. Test #2 was on north-trending ridge 225' north of western-most pit and 10' east of fence. Material tested is a dirty cobbly gravel with an excess passing the #270 sieve. There was insufficient proper size stone for percent of wear test. Although it fails for Item 201, it is acceptable for Item 105. It is underlain by at least 3.5 feet of pebbly medium to fine sand.
39	1	1966	1-8	0-1	No	100	94.2	93.4	70.1	52.0 48.6*	1	---	---	Owner: Marjorie Moore. Area is an east-west trending ridge southwest of barn. Material is a silty sand which has too much material passing the #100 and #270 sieves to qualify for Item 105. Test #1 was at west end of ridge S-85-W of barn and 30' north of fence.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 36

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
						1½"	5/8"	#4	#100	#270				
40	1	1966	11-22	0-11	Yes	58.5	43.3	27.3	15.0	6.0	1	23.0%	Gravel	Owner: Charles Chase. Area is wooded and contains several pits located southeast of Chase's house and west of State Aid Highway #2. Test #1 was in northeast face of center pit. Material tested is a cobbly gravel which underlies 11 feet of sandy silt. It meets requirements for Item 201.
	2	1966	2.5-9.5	0-2.5		76.6	59.0	37.0	23.0	10.8	1	22.2%	---	Test #2 was in the center of the north face of the west pit. Because an excessive portion of this cobbly gravel passes the #270 sieve, it fails the requirements for Item 105.
	3	1966	1-5.5	0-1		87.4	78.3	59.4	13.0	5.5	1	---	Gran. Borrow (Grav.)	Test #3 was in possible eastward extension of pit area 200' east of access road. Material is a cobbly gravel with an excess passing the #270 sieve. There was insufficient proper size stone for percent of wear test. It is not acceptable for Item 201, but meets the requirements for Item 105.
41	1	1966	1-8	0-1	Yes	100	100	100	5.0	3.0*	1	---	Sand	Owner: Harry Roberge. Area is a wooded hill at edge of field due north of house and barn. Test #1 was in old sand pit at west edge of hill. Material is 1'-4.5' yellow

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 37

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		
						1½"	5/8"	#4	#100						
													sand; 4.5-5' clay seam; 5'-8' fine sand. It meets specifications for Item 202. It is underlain by 2 feet of clay.		
42	1	1966	1-5	0-1	No	N	O	T	S	A	M	P	L	E D	Owner: Harry Roberge. Area is field on bluff above Vt. Rte. 58 S-70-W of house. Test #1 was next to fence at west end of field 200' south of corner. Material is silt to clay overlying boulder till.
43	1	1966	0-8	Stripped	Yes	100	94.8	87.5	14.0	2.3 2.0*	1	---	Sand	Owner: Leo Brouillard. Area has pits west of the East Cemetery on Town Highway #30. Test #1 was in center of southeast lift face. Material consists of clean and pebbly interbedded sands which meets the requirements for Item 202. Test #2 was in sand mound at east end of pit 150' from Test #1. Material tested is a medium to fine pebbly sand that underlies 1 foot of silt. It barely fails to meet requirements for Item 202 because an excess is retained on the 1½-inch screen. It is acceptable for Item 105.	
	2	1966	3-16	0-2	Yes	94.1	93.1	87.6	9.6	3.0 2.6*	1	---	Gran. Borrow (Sand)	Test #3 was dug 75' west of Test #2 at south side of pit. Test #3A material is a silty sand that is unacceptable for Item 105.	
3A	1966	0.5-9	0-0.5	Yes	100	100	100	46.0	15.5*	1	---	---			

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 38

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
						1½"	5/8"	#4	#100	#270				
	3B	1966	9-12.5	See Test 3A	Yes	100	99.0	94.8	3.8	1.0 0.9*	1	---	Sand	Test #3B consists of 1 foot of gravelly sand overlying 2.5 feet of pebbly medium sand. This material meets requirements for Item 202.
	4	1966	2.5-11	0-2.5	Yes	100	100	99.0	32.0	5.0*	1	---	Gran. Borrow (Sand)	Test #4 was dug 45' west of south part of pit and 130' west of Test #1 just beyond stripped area. Upper 5.5 feet of material was a vaguely interbedded series of fine to medium sands with few pebbles and many silt laminae. Lower 3 feet is a fine light-gray sand continuing to depth. It fails to meet requirements for Item 202 because an excess passes the #100 sieve. It meets requirements for Item 105.
44	1	1966	0-10	Stripped	Yes	83.1	72.3	55.8	12.0	3.8	1½	21.6%	Gran. Borrow (Grav.)	Owner: Hestor Gilfillan. Area is a large gravel pit and field south of house on Town Highway #30. Test #1 was in remnant of lift level at far south end of pit. Material is a coarse gravel with included sand. It barely fails to meet requirements for Item 201 because a slight excess passes the #270 sieve. It is acceptable for Item 105.
	2	1966	3-22.5	0-1	Yes	81.4	76.5	64.6	2.6	1.3	1	18.6%	Gran. Borrow (Grav.)	Test #2 was in upper face at southeast end of pit. Tested interval was overlain by 2

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 39

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
						1½"	5/8"	#4	#100	#270				
3	1966	1-8	0-1		Yes	85.7	77.0	60.3	3.0	2.3	1	---	Gran. Borrow (Grav.)	feet of cobbly silt. Material tested is a bedded deposition of sand and gravel with scattered cobbles. It fails to meet requirements for Item 201 because insufficient stone is held by the #4 screen. It is acceptable for Item 105. Test #3 was in lift level 65' northwest of Test #2. Material sampled is medium to fine pebbly sand with a few cobbles. It barely fails to meet grading requirements for Item 201 because of slightly insufficient stone. There was insufficient proper size stone for percent of wear test. It meets the requirements for Item 105.
4	1966	2-17	0-2		Yes	66.1	58.0	43.1	9.0	5.0	1	23.7%	Gran. Borrow (Grav.)	Test #4 was at northwest end of pit 160' west of Test #3. Material tested was mainly silty to sandy coarse gravel. It barely fails to meet requirements for Item 201 because a slight excess passes the #270 sieve. It meets requirements for Item 105.
5	1966	1-10	0-1		Yes	84.7	78.3	65.9	7.0	1.8	1	---	Gran. Borrow (Grav.)	Test #5 was in floor 27' northwest of Test #1. Material tested is a cobbly sand that bottoms in medium sand. It fails to meet specifications for Item 201 because it contains only 34.1% stone. There

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 40

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
						1½"	5/8"	#4	#100	#270				
	6	1966	2-9	0-2	No	85.4	78.4	59.5	14.0	7.0	1	---	Gran. Borrow (Grav.)	was insufficient proper size stone for percent of wear test. It is acceptable for Item 105. Test #6 was in field 85' north of fence and N-5-W of Test #4. Material is a silty coarse gravel with boulders. It fails to meet requirements for Item 201 because an excess passes the #270 sieve. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105. It should be noted that deposition at bottom of southeast face dips evenly 29° south.
45	1A	1966	0.5-10.5	0-0.5	Yes	100	98.1	90.8	10.0	3.8 3.5*	1	---	Sand	Owner: Leo Brouillard. Area is an old pit southeast of the East Cemetery on Town Highway #30. Test #1 was in stripped part of west face. Test #1A is a pebbly sand which meets the requirements for Item 202.
	1B	1966	10.5-15.5	See Test 1A	Yes	100	85.4	73.5	3.7	2.0 1.5*	1	---	Sand	Test #1B is a gravelly sand with silt which also is acceptable for Item 202.
	2	1966	0.5-10	0-0.5	Yes	100	87.7	68.5	2.6	1.3 0.9*	1	---	Gran. Borrow (Sand)	Test #2 was in floor east of Test #1. Material, which dips west, is a medium pebbly sand with a silty sand layer. It fails to meet requirements for Item 202 because too little passes the #4 screen. It is

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 41

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
						1½"	5/8"	#4	#100	#270				
46	1	1966	2-9	0-2	No	100	98.4	90.9	18.9	14.0 12.6*	1	---	---	acceptable for Item 105.
	2	1966	2-7	0-2	No	N	O	T	S	A	M	P	L	E
47	1	1966	1-10	0-1	No	100	100	100	53.0	15.0*	2	---	---	Owner: Leo Brouillard. Area consists of rounded hill in open field just north of Vt. Rte. 58 and far hill due north across swale from same. Test #1 was 60' from center line of Vt. Rte. 58. Material is fine sand grading into silt at depth. It fails to meet requirements for Item 105.
	2	1966	2-10	0-2	No	100	93.2	81.1	3.2	2.3 1.9*	1½	---	Sand	Test #2 was on crest of near hill 150' N-25-W of Test #1. Material is pebbly sand in layers. It is acceptable for Item 202.
	3	1966	2-10	0-2	No	100	78.6	73.3	4.4	2.0 1.5*	2	---	Sand	Test #3 was on crest of far

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 42

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
						1½"	5/8"	#4	#100	#270				
														hill about 450' north of Test #2 and 100' east of tamarack tree. Material tested is 1 foot of stony sand overlying 7 feet of clean fine sand. It is acceptable for Item 202.
48	1	1966	2-10	0-2	No	91.9	87.7	70.0	4.9	2.8 2.0*	1	23.6%	Gran. Borrow	Owner: Leo Brouillard. Area is a large field north of the Coapland house on Vt. Rte. 58. Test #1 was on rise in field N-10-E of house. Material tested consists of 2'-3' cross-bedded sand; 3'-10' gravelly sand. It fails to meet requirements for Item 202 because too much is held by the 1½-inch screen. It is acceptable for Item 105.
49	1	1966	1-10	0-1	No	100	92.7	82.1	10.7	3.8 3.1*	1	---	Sand	Owner: Leo Brouillard. Area is an open field on wooded hillside north of Vt. Rte. 58 about 0.25 mile east of Coapland's house. Test #1 was at top of hill next to spruce woods. Material tested is pebbly sand with cobbles. It meets requirements for Item 202.
	2	1966	2-10	0-1	No	100	100	94.6	11.4	2.5 2.4*	2	---	Sand	Test #2 was on side of field 150' S-15-E of Test #1. Material tested is medium to fine clean sand. It is overlain by 1 foot of limonitic sand that was not tested. It meets requirements for Item 202.

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 43

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	
						1½"	5/8"	#4	#100	#270					
	3	1966	2-6.5	0-1	No	100	100	95.5	17.2	7.0 6.7*	2	---	Gran. Borrow (Sand)	Test #3 was at southwest end of field 165' S-80-W of Test #2. Material tested is a silty fine sand which barely fails to meet the requirements for Item 202 because a slight excess passes the #270 sieve. It meets requirements for Item 105.	
50	1	1966	2-23	0-2	Yes	100	96.8	89.1	12.5	3.0 2.7*	1½	---	Sand	Owner: Walter Leland. Area consists of an overgrown pit with extension possibilities to the east located north of Vt. Rte. 58 about 0.25 mile west of Leland's house. Test #1 was in south-central part of face. Material is a medium pebbly sand with silt seams approximately 15 feet below the top. It meets requirements for Item 202.	
	2	1966	1-5.5	0-1	Yes	N	O	T	S	A	M	P	L	E D	Test #2 was in floor west of Test #1. About 2.5 feet of pebbly sand overlying saturated blue clay was not sampled.
	3	1966	2.5-10	0-2.5	No	100	99.1	90.8	7.3	2.5 2.3*	1	---	Sand	Test #3 was at high point on ridge 80' N-70-E of Test #1. Material tested is a pebbly sand which is acceptable for Item 202.	
	4	1966	2.5-9	0-2.5	No	76.9	69.8	59.4	25.0	8.0	1	---	Gran. Borrow (Grav.)	Test #4 was at edge of field 200' S-55-E of Test #3. Material is a cobble gravel with an excessive amount passing the #100 and #270 sieves. There was insufficient proper	

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 44

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
						1½"	5/8"	#4	#100	#270				
51	1	1966	3.5-22.5	0-1	Yes	93.9	81.3	71.0	5.0	1.8 1.3*	1	---	Gran. Borrow (Sand)	size stone for percent of wear test. It is acceptable for Item 105. There was a rapid inflow of water at 8.5 feet.
	2	1966	0.5-10	0-0.5	Yes	81.8	71.3	65.2	7.2	2.0 1.3*	1	---	Gran. Borrow (Sand)	Owner: Walter Leland. Area is pit south of Vt. Rte. 58 about 0.2 mile west of Leland's house. Test #1 was below highest point on southeast face. Overlying test was 2.5 feet of inaccessible silty pebbly sand. Section sampled consisted of 3.5'-6' pebbly sand; 6'-6.5' coarse gravel; and 6.5'-22.5' pebbly medium sand. Material fails to meet the requirements for Item 202 because a slight excess is retained on the 1½-inch screen. It meets requirements for Item 105. Test #2 was in floor at south end of pit. Material is a pebbly sand with cobbles retained on the 3-inch screen that make it unacceptable for Item 202. It meets the requirements for Item 105. Beds in this pit generally dip southwest. There is evidence of cross-bedding and an occasional cobble in place.
52	1	1966	3.5-10.5	0-1	No	78.5	74.3	63.3	8.0	3.5	1	---	Gran. Borrow (Grav.)	Owner: Walter Leland. Area is an open field with north-west-trending ridge located west of house. Test #1 was on

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 45

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
						1½"	5/8"	#4	#100	#270				
53	2	1966	1.5-8	0-1.5	No	100	98.1	85.6	21.4	10.0 8.6*	1	---	Gran. Borrow (Sand)	high point at southeast end of ridge. Material is a cobbly silty gravel, coarsening at depth, of which upper 2 feet was not sampled. It fails to meet grading requirements for Item 201 because insufficient stone is retained by the #4 screen. There was insufficient proper size stone for percent of wear test. It is acceptable for Item 105.
														Test #2 was at edge of field 240' N-30-W of Test #1 near Vt. Rte. 58. Material is a stony coarse sand that overlies clay where water occurred at 8 feet. It fails to meet requirements for Item 202 because excessive material passes the #100 and #270 sieves. It meets specifications for Item 105.
														Test #3 was in swale northeast of ridge 90' north of Test #1. Material is 4 feet of fine gravel overlying 3.5 feet of silty sand which collectively meets the requirements for Item 202. From 8.5' to 9.5' it is a clay. Water was encountered at 9 feet.
53	1	1966	2-10	0-2	No	100	97.7	93.6	4.7	2.0 1.9*	1	---	Sand	Owner: Walter Leland. Area is a large field south and southwest of house and barn. Test #1 was on far knoll due

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 46

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		
						1½"	5/8"	#4	#100	#270						
54	2	1966	2.5-10	0-2.5	No	100	100	96.8	6.8	2.5 2.4*	1½	---	Sand	south of barn. Material is a fine pebbly sand which meets the requirements for Item 202. Test #2 was on top of hill 340' west of Test #1 and 300' south of Test #3 knoll. Material is a pebbly sand with silt layers which is acceptable for Item 202.		
	3	1966	---	Stripped	No	N	O	T	S	A	M	P	L	E	D	Test #3 knoll crossed by fence S-65-W of barn is a burial ground for cattle. It was not sampled. On the surface ringing the knoll are a number of depressions and excavated places. Overturned material appears to be a stony silty sand.
	4	1966	2.5-10	0-2.5	No	100	98.1	84.1	19.3	8.0 6.7*	1	---	Gran. Borrow (Sand)	Test #4 was on hilltop southwest of barn and south of house. Material is a pebbly fine sand which is unacceptable for Item 202 because excessive material passes the #100 and #270 sieves. It is acceptable for Item 105.		
54	1	1966	2-10	0-2	No	100	98.4	95.1	4.8	2.0 1.9*	1½	---	Sand	Owner: Nye Gilfillan. Area is a long ridge at far north end of field east of Vt. Rte. 5A. Test #1 was at high point on ridge. Material is a fine pebbly sand with silt near the bottom which is acceptable for Item 202.		

*Percentage of Total Sample

TABLE I

BROWNINGTON GRANULAR DATA SHEET NO. 47

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		
						1½"	5/8"	#4	#100	#270						
55	1	1966	---	0-2	No	N	O	T	S	A	M	P	L	E	D	Owner: Walter Parenteau. Area is a pasture east of woods, southwest of rock wall and S-65-W of Gilfillan's house on Vt. Rte. 5A. Phyllite ledge underlying 2 feet of sandy loam makes this location un- acceptable as a source of gran- ular materials.

*Percentage of Total Sample

TABLE I
Supplement

BROWNINGTON PROPERTY OWNERS - GRANULAR	Map Ident. No.
Blake, Harley	30
Brouillard, Leo	43, 45, 47, 48, 49
Brownington, Town of	26, 29
Bullock, Lyle	23
Chase, Charles	38, 40
Cleveland, Lester	8, 9
Davignon, Francis	33, 34
Dickinson, Robert	3, 4
Gilfillan, Hestor	44
Gilfillan, Nye	54
Guillette, John	27, 28, 31, 32
Jensen, Harry	35
Kittredge, A. A.	7
Leland, Walter	50, 51, 52, 53
Lyon, Harold	1
Moore, Marjorie	36, 37, 39
Parenteau, Walter	55
Prue, Irving	13
Pudvah, Steve	21, 22, 25
Roberge, Harry	41, 42
Robillard, Albert	16, 20
Stevens, Harry	24
Swett, Ralph	2, 5, 6
Thompson, Harry	11
Ticehurst, Carl	14, 15, 17, 18, 19
Wilcox, W.	46
Woodard, Willie	10, 12

TABLE II

BROWNINGTON 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	1966	Granite	No	Chip	4.0%	Owner: Quentin Elliot. Area consists of a wooded slope north of a springhouse that belongs to Roland Beauregard east of Town Highway No. 4. There are definite granite outcrops along with displaced blocks extending for 150' north from springhouse. About 50' of material in Beauregard's field was not sampled. Access is through barway on Town Highway No. 4 at point about 0.21 mile south of intersection with Town Highway No. 40. Material meets abrasion requirements for Sub-base of Crushed Rock, Item 204.
2	1	1966	Phyllite	No	Chip	4.6%	Owner: Emanuel Robillard. Area consists of pasture lands and woods about 600' east of farmhouse on Town Highway No. 12. There are scattered outcrops of ledge on a gently sloping hillside which has a thin covering of glacial till. Material is uniform in texture with a few sulfide zones. It has poorly developed cleavage and is difficult to break with a sledge hammer. It meets the abrasion requirements for Sub-base of Crushed Rock, Item 204.
3	1	1966	Phyllite	Yes	Chip	3.8%	Owner: Bernard Gray. Area is an old whetstone quarry on Town Highway No. 36. Test was of waste crossed by the town road at the north end of quarry. Material sampled is a very uniform gray quartzose phyllite with poorly developed cleavage planes and with a tendency toward conchoidal fracture. A 200-foot waste pile was sampled, 125' of which was west of the town road with the remainder east of it. Material meets the abrasion requirements for Sub-base of Crushed Rock, Item 204.

TABLE II
Supplement

BROWNINGTON PTOPERTY OWNERS - ROCK	Map Ident. No.
Beauregard, Roland	1
Elliott, Quentin	1
Gray, Bernard	3
Robillard, Emanuel	2