SURVEY OF HIGHWAY CONSTRUCTION MATERIALS

IN THE TOWN OF WAITSFIELD, WASHINGTON COUNTY, VERMONT

prepared by

Engineering Geology Section, Materials Division

Vermont Department of Highways

in cooperation with

United States Department of Commerce

Bureau of Public Roads

Montpelier, Vermont

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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 materials 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 designatd 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.

Inclusures

Included in this folder are two surface-geology maps, one defining the location of tests conducted on bedrock sources, the other defining the location of tests conducted on granular materials. These maps are derived from 15-minute or 7½-minute quadrangles of the United States Geological Survey enlarged or reduced to 1:31250 or 1" = 2604'. Delineated on the Bedrock Map are the various rock types of the area. This information was obtained from numerous sources: 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 conducted by Professor D.P. Stewart of Miami University, Oxford, Ohio, who had been mapping the glacial features 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, the Surficial Geologic Map of Vermont, 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 the 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.

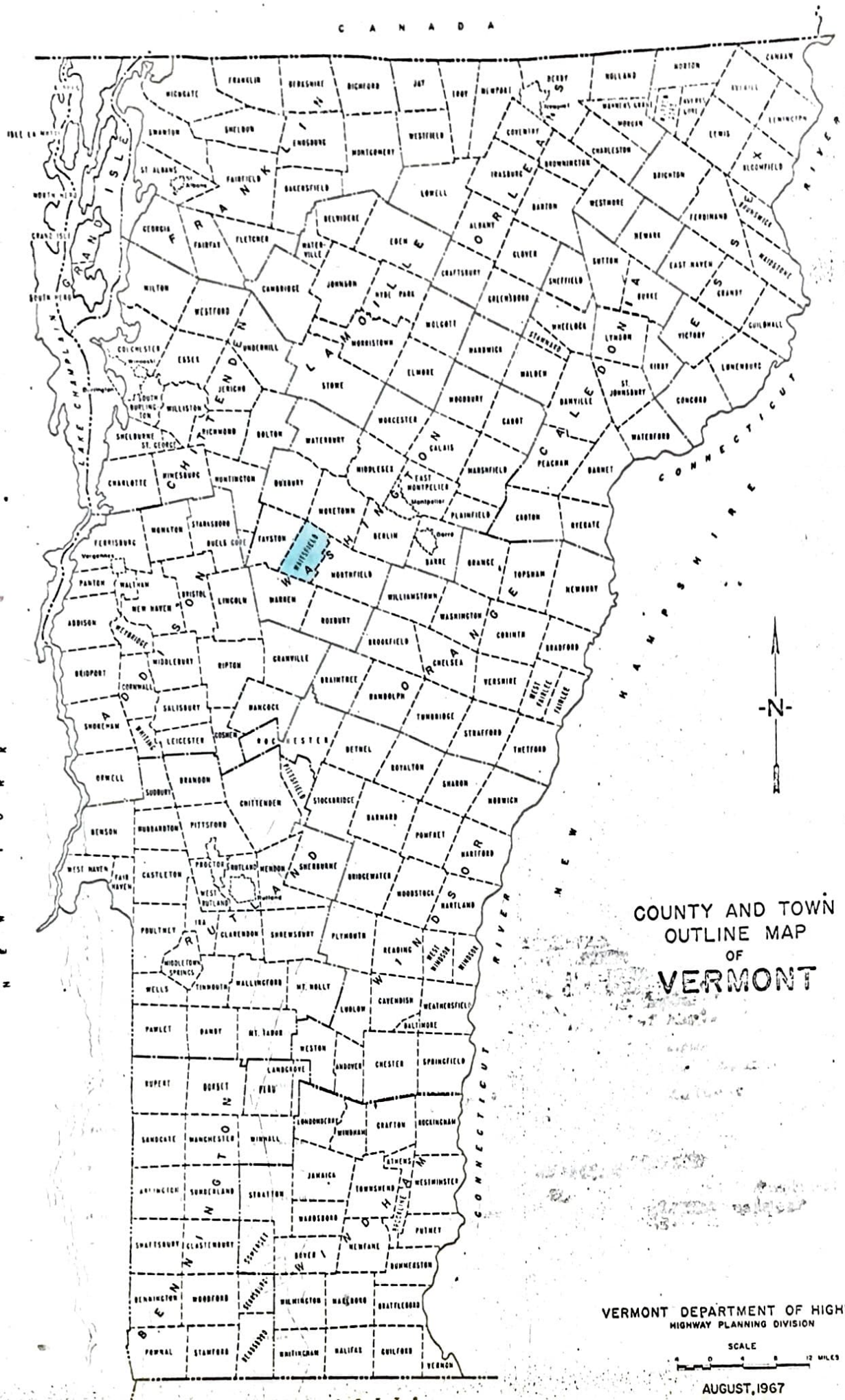
LOCATION

The town of Waitsfield is located in southwestern Washington County in the central part of the state. It is bounded on the north by Moretown, on the east by Northfield, on the south by Warren, and on the west by Fayston.

Waitsfield lies within the Vermont Piedmont and Green Mountains Physiographic Subdivisions of Vermont, the Mad River being roughly the division line. The valley of the Mad River narrows from north to south. At the Warren Town Line it is little more than 1,000 feet wide; near the Moretown Town Line a flood plain has developed that is up to 2,500 feet wide.

The Northfield Mountains, with summits ranging from 2,300 feet to 2,900 feet, occur along the Northfield Town Line. On the lower slopes of the Northfield Mountains, between the elevations of 1,000 feet and 1,200 feet, a gently westward sloping plateau has been severely dissected by streams. Waitsfield Common is probably typical of the pre-erosion topography.

Drainage in Waitsfield is northeasterly via the Mad River. Numerous tributaries from the Northfield Mountains and the Green Mountains enter the Mad River. Among these from south to north are: Charles Folsom Brook; Mill Brook, a large tributary from Fayston; High Bridge Brook; Pine Brook; and Shepard Brook, also from Fayston.


CANADA
NEW YORK
NEW HAMPSHIRE
CONNECTICUT RIVER
LAKE CHAMPLAIN
GRAND ISLE
FRANKLIN
LAMOILLE
ORLEANS
ESSEX
CALEDONIA
WASHINGTON
ORANGE
WINDSOR
WINDHAM
BENNINGTON
RUTLAND
ADDISON
CHITTENDEN
N
COUNTY AND TOWN
OUTLINE MAP
OF
VERMONT
VERMONT DEPARTMENT OF HIGHWAYS
HIGHWAY PLANNING DIVISION
SCALE
AUGUST, 1967

SURVEY OF ROCK SOURCES

Procedure for Rock Survey

The routine employed by the project in a survey of possible sources of rock for highway construction is divided into two main stages; office and field investigations.

The office investigation is conducted primarily during the winter months and comprises the mapping and description of rock types as indicated in various reference sources. Many different sources of information are utilized, as indicated in the bibliography. These references differ considerably in dependability due to new developments and studies that have contributed to the obsolescense of a number of reports. In addition, the results of samples taken by other individuals are analyzed, and the location at 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 field investigation is begun by making a cursory preliminary survey of the entire area. The information obtained in the preliminary survey, together with the information assimilated in the office investigation, is employed to determine the areas where testing and sampling will be concentrated. When a promising source has been determined by rock type, volume of material, accessibility, and adequate exposure and relief, chip samples are taken with a hammer across the strike or trend of the rock. The samples are submitted to the Material Testing Laboratory for abrasion testing both by the Deval Method (AASHO T-3) and the Los Angeles Method (AASHO T-96). It should be kept in mind that the samples taken by the chip method are often within the weathered zone of the outcrop and consequently may give a less satisfactory test result than fresh material deeper in the rock structure. When the material is uniform and acceptable abrasion tests result from the chip samples, the material source is included in this report 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 make up a major portion of the formations within the town of Waitsfield.

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.

Mapped bedrock in Waitsfield is predominantly schist or phyllite with interbedded quartzite. Greenstone occurs in widely separated areas. Serpentinite occurs in several places along the contact between the Ottauquechee and Pinney Hollow Formations.

Exposures with extent and relief sufficient for a crushed rock quarrying operation are lacking in the accessible portions of Waitsfield. Glacial till and stratified glacial deposits mantle the bedrock to varying depths. Examples of outwash deposits overlying the Pinney Hollow schist occur south of Irasville on the east side of the Mad River east of the Highway Bridge, and on the west edge of a terrace just north of Town Highway No. 30. (Refer to Granular Map Identification No.'s 35 and 34).

A large area of greenstone is mapped in the northeast corner of town. Access is via Town Highway No. 10, but this road becomes impassable approximately one mile north of Town Highway No. 16. No exposures were seen within a quarter-mile of Town Highway No. 10. Greater relief, and therefore, a possible site of greenstone exposures, occurs about one mile west of the road, above the east side of the

Mad River Valley.

A smaller area of greenstone is mapped on New Hill, in the southwest corner of town. This area lies partly within the Camels Hump State Forest, west of and above the road through the forest.

Serpentinite and steatite are exposed in a small quarry within the town of Fayston, about a mile west of Vermont Route 100. Access is via a field road leading from Route 100 in the vicinity of the Moretown Town Line. This rock is a continuation south of that exposed in the Duxbury quarry owned by the Vermont Marble Company. Four separate small bodies of these rock types are mapped to the south in Waitsfield on the west side of the Ottauquechee Formation outcrop area. None of these provide any appreciable relief that can be seen on the aerial photographs, and none of the outcrops were found in the field.

SURVEY OF SAND AND GRAVEL SOURCES

Procedure for Sand and Gravel Survey

The method employed by the project in a survey of possible sources of sand and gravel for highway construction is divided into two main stages; office and field investigations.

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 the recognition and location of physiographic features indicating glacial deposits and in the study of drainage patterns. In addition, the locations of existing pits are mapped when known. The locations in which samples were taken by other individuals are noted and mapped when possible.

The field investigation is begun by making a cursory preliminary survey of the entire town. All pits and other areas which show physiographic features that give evidence of glacial or fluvial deposition are noted. These locations are later investigated by obtaining samples of pit faces and other exposed materials. Tests pits, dug with a backhoe to a depth of approximately 11 feet, are also sampled. The samples are submitted to the Materials Testing Laboratory where they are tested for gradation and stone abrasion, the latter by the Deval Method (AASHO T-4).

Discussion of Sand and Gravel Deposits

Granular materials in Waitsfield are predominantly of outwash and deltaic origin, and are primarily gravels. Pebbly sand that D. P. Stewart mapped over a large area in the northwest part of town is actually gravel 8 or 10 feet thick that overlies fine and silty sands. His designated lake gravels are possibly deltas in which the characteristic foreset beds have not as yet been exposed. D. P. Stewart has also mapped several small kame terraces that occur in widely separated areas at elevations varying from 700 feet to 1,500 feet. Only two of these mapped areas were found that contained granular material. A large unmapped feature, probably of the same origin, was sampled in Map Identification No. 19. Sand and gravel, failing to meet highway specifications, were sampled. Sand failing to meet requirements for Item 202, Sub-base of Sand, was also sampled at Map Identification No.'s 18 and 20, in the two mapped areas. Important deposits of fluvial gravel acceptable for Item 201, Sub-base of Gravel, were sampled in Map Identification No.'s 34, 40, 41, and 42.

The outwash terraces occur between the elevations of 740 feet and 800 feet in the south part of town, and between the elevations of 660 feet and 720 feet in the north part of town. Irasville, at an elevation of 790 feet, is situated on the terrace west of the Mad River. Elsewhere the outwash occurs on the east side of the valley. Gravels acceptable for Item 201 were sampled in numerous areas within the outwash. Typically, the gravels are quite stony, clean, with hard stones, and are a maximum of 10 or 12 feet thick. They overlie fine sand to silty clay. The following Map Identification No.'s represent these outwash gravels: 1, 3, 13, 16, 17, 35, 38, and 39. No.'s 13, 38, and 39 have small pits; No. 17 is a large, nearly depleted pit having an extension into No. 16. The gravel in these two areas could be crushed to advantage since about 10% is in the 6-to 12-inch range..

The greatest quantities of gravel and sand in Waitsfield occur in the lake and delta deposits. Materials meeting Highway Department specifications were sampled at the following Map Identification No.'s representing delta or lake deposits: 14 (gravel and sand pit), 23 (gravel), 26 (gravel pit and large extension), and 43 (sand pit).

The "pebble sand" area in the northwest part of town probably represents deposition in shoals that developed in the glacial lake that occupied the valley as it became filled with sands and silts. Currents in the shallow water would have made possible the deposition of gravels. The following Map Identification No.'s that represent this area gave gravels acceptable for Item 201: 4, 5, 6, 7, 8, and 10. Map Identification No. 10 also had sand that was acceptable for Item 202.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF WAITSFIELD

Stowe formation - Quartz-sericite-chlorite-albite schist and quartz-muscovite-chlorite-garnet schist, partly intergradational; segregations of granular white quartz are characteristic. Carbonaceous facies are locally interbedded.

Greenstone and Amphibolite - Thick members that grade by thin interlamination into the schist, chiefly parallel to the bedding. Epidote-albite-chlorite rocks that contain actinolite and hornblende where more metamorphosed.

Ottauquechee formation - Carbonaceous quartz-sericite phyllite that contains sharply defined massive interbeds of carbonaceous quartzite, criss-crossed by veins of white quartz, is characteristic. Also included are quartz-sericite-albite-chlorite phyllite or schist, sericitic quartzite, and locally greenstone.

Pinney Hollow formation - Pale green quartz-sericite (muscovite-paragonite)-chlorite phyllite and schist with abundant magnetite, chloritoid phyllite and schist, quartz-sericite-albite-chlorite schist, and rare beds of carbonaceous and schistose quartzite. Also greenstone.

Hazens Notch formation - Interbedded carbonaceous and non-carbonaceous quartz-sericite-albite-chlorite schist; grades to quartzite and gneiss that contain different proportions of the same minerals; also greenstone. Calcite marble is locally interbedded.

Serpentinite, Carbonate Rock, Talc-Carbonate Rock, Steatite - Hydrothermally metamorphosed ultramafic rocks that originally intruded the Ottauquechee Formation.

GLOSSARY OF SELECTED GEOLOGIC TERMS

Alluvial - Pertaining to material carried or laid down by running water.

Carbonaceous - Containing or composed of carbon.

Delta - A predominantly alluvial deposit built out by a stream into the sea or other body of water. Usually it has the typical form of the Greek letter Delta.

Esker - A long, narrow, winding ridge of mixed sand and gravel considered to have been deposited by a stream of meltwater flowing in a tunnel or crevasse in or on stagnant glacial ice.

Fluvial - Pertaining to streams or deposition by streams.

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

Gneiss - A foliated metamorphic rock with no specific composition implied, but having layers that are mineralogically unlike and consisting of interlocking mineral particles that are mostly visible to the eye. Usually gneiss displays an alternation of granular minerals and tabular or schistose minerals. The rock tends to split along the planes where tabular or schistose minerals predominate.

Greenstone - A field name for rocks that have been so metamorphosed or otherwise altered that they have assumed a distinctive color owing to the presence of chlorite, epidote, or actinolite.

Hydrothermal - Of or relating to hot water. A term used with reference to the action of heated waters in dissolving, redepositing, and otherwise causing mineral changes.

Ice-Contact - Refers to sediments which have accumulated in contact with stagnant or wasting glacial ice.

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

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

Outwash - Stratified drift that is stream-built beyond the glacier.

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 distinctive silvery appearance. The fracture is intermediate between the smooth, even cleavage of slate and the rather splintery fissility of schist; the rock is not as tough as slate.

Schist - A metamorphic crystalline rock having a closely foliated structure and a tendency to split along approximately parallel planes.

Serpentinite - A metamorphic rock consisting primarily of the mineral serpentine derived mainly from the alteration of igneous rocks containing olivine or other magnesium-rich minerals. The process whereby these minerals are changed to

serpentine is known as serpentinization.

Steatite - Also known as soapstone. It is essentially an impure, massive to schistose talc and may grade into talc schists. Its distinguishing characteristics are its softness (it can be cut with a knife), and its greasy or soapy feel.

Talc Carbonate Rocks - Metamorphic rocks containing the mineral talc and a magnesium carbonate mineral (dolomite or magnesite). They may grade to siliceous marbles on the one hand, and soapstones on the other. They are formed by the alteration of some to nearly all of the mineral constituents in the original rock to the mineral talc. This process is known as steatitization.

Ultramafic - Pertaining to igneous rocks that have a low percentage of silica (less than 45%), virtually no quartz and feldspar, and corresponding high percentage of iron magnesium, and calcium. These rocks may occur as individual units or in segregations in larger igneous bodies.

Till (Glacial Till) - An unsorted, unstratified, and unconsolidated heterogeneous mixture of clay, silt, sand, gravel, and boulders deposited directly by glacial ice.

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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 a complete list of specifications see Standard Specifications for Highway and Bridge Construction, approved and adopted by the Vermont Department of Highways in 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 (3½) 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-inch (9") 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 percent (40%) 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 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 (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

"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 and shall be 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 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
		No. 4	25-50
	Fine-Graded Item 205-B	1½"	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 that twenty (20) when tested by laboratory methods using Method AASHO T-4 or more than thirty-five 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."

Item 207, Sub-base of Dense Graded Crushed Rock

"Article 207.02 - materials. The crushed rock shall consist of granular fragments of hard, durable rock, of uniform quality throughout, reasonably free from thin or elongated pieces, soft or disintegrated rock, dirt or other objectionable matter."

"The rock shall meet the following requirements:

" The percent of wear shall be not 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."

"When tested by laboratory methods, using Method AASHO T-27, the material shall meet the requirements set up in the following table:

	Square Openings	Percent Passing
Grading	3"	100
	2"	80-100
	1¼"	50-75
	No. 4	30-55
	No. 100	3-10
	No. 270	0-6

"The dense graded rock shall be homogeneous and shall be produced and manipulated in such a manner as to prevent segregation before material is spread on the prepared subgrade, or at other locations."

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
1	1	1969	1.5-11	0-1.5	No	58.6	49.4	36.1	21.0	2.5	2	29.1%	Gran. Borrow (Gravel)	Owner: George Carpenter. This area is a large, flat to gently rolling field located on the west side of Town Highway No. 4 just south of the Moretown Town Line. The field has a gentle westerly slope and is on an outwash terrace mapped by D. P. Stewart on the east side of the Mad River valley. Test #1 was dug in the northeast corner of the field across the road from an old shed. The material is a cobbly gravel somewhat dirty-looking in the top 4.5' and cleaner from 4.5'-11'. The hole bottoms in sand. Test #2 was dug 225' N. 25° W. of Test #1 atop north slope of the terrace. The material is a cobbly and bouldery gravel, less coarse below 5'. Overall, it is a little cleaner than Test #1. The Test bottoms in gravel. Clay appears on the north slope about 12'-15' below the test elevation. Both Tests #1 and #2 have some tabular stones. An estimated 10% of the material in this part of
	2	1969	1.5-10.5	0-1.5	No	70.3	52.0	35.4	8.0	2.5	1½	28.6%	Gran. Borrow (Gravel)	

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 2

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4035	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	3A	1969	1-4	0-1	No	78.3	59.9	43.1	13.0	2.5	1½	20.4%	Gravel	the area exceeds 6". Test hole #3 was dug on the north side of the field, 275' N. 45° W. of Test #2, 140' from the northwest corner of the feature. From 1'-4' is fine gravel sampled as Test #3A.
	3B	1969	4-10.5	----	No	100	91.2	79.4	7.9	1.0 0.8*	1	-----	Gravel	Test #3B was dug from 4'-10.5' in beds of fine sand and pebbly sand. The test bottomed in fine sand. A composite sample of the test hole would not have contained stones enough for Item 201, Sub-base of Gravel. The test is 5'-6' below the elevation of Test #2.
	4	1969	1-4.5	0-1	No	94.7	75.7	49.2	3.0	1.0	3	20.6%	Gravel	Test #4 was dug about 295' WSW of Test #3 on the west edge of the terrace. A quite stony fine gravel overlies clay at 4.5',
	5	1969	1-8.5	0-1	No	100	98.4	87.1	1.7	0.5 0.4*	1½	----	Gravel	Test #5 was dug 550' south of Test #4 in the southwest corner of the field. From 1'-4.5' is gravelly sand overlying pebbly sand and lenses of medium or coarse sand. Silt to clay was hit at 8.5'.
	6	1969	1.5-8.5	0-1.5	No	100	92.6	74.3	3.0	1.0 0.7*	3	----	Sand	Test #6 was dug 275' southeast of Test #5 on the south side of the field. Beds of

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 3

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	7	1969	1-7	0-1	No	100	92.0	78.4	11.8	4.0 3.1*	1½	----	Sand	sand and pebbly sand were exposed. Moist, very fine or silty sand occurs at 8.5'. Test #7 was dug 295' east of Test #6 on the east side of a rounded gully that extends north into the field. This test is about 2' above Test #6. Log of Test: 0'-1', ovbdn.; 1'-4', gravelly sand; 4'-7', fine sand with pebbles; below 7' silt to clay occurs.
	8	1969	N O T S A M P L E									D		Test #8 was dug beside the town road in the southeast corner of the field. Silt to clay was exposed to 4' and no sample was taken.
	9	1969	N O T S A M P L E									D		Test #9 was dug on the roadside 240' north of Test #8. A very rubbly and bouldery unsorted material probably glacial till was exposed and not sampled. Test holes were allowed only around the sides of the field. This area would have gravels in the north part of the terrace. In the northwest corner they are fine and thin, in the northeast corner they

*Percentage of Total Sample

TABLE I

WAITSFIELD 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 % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														are very cobbly and are at least 11' thick.
2	1	1969	N O T S A M P L E									D		Owner: Dan Fisbee. This area is west-sloping pasture land on the west side of Town Highway No. 4, south across a wooded gully from Map Identification No. 1. The pasture is on a remnant of the outwash terrace mapped by D. P. Stewart on the east side of the valley. The feature varies from 240' N-S to 90' N-S and is about 475' E-W. Test #1 was dug on its east end near the roadside. The top 1' is stony and overlies at least 3' of silt to clay. No sample was taken.
	2	1969	1-10	0-1	No	100	98.0	86.2	15.5	2.3 2.0*	1	----	Sand	Test #2 was dug 320' west of Test #1 at point on terrace that is 90' wide. Test #2 is 8'-10' below Test #1. The material is sand with pebbles. It is fine in the top part and coarse and moist in the bottom part. Water entered at 10' in pebbly coarse sand. The owner would not be interested in developing this area.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 5

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
3	1A	1969	1-5	0-1	No	86.2	69.3	47.8	1.0	0.3	1	18.8%	Gravel	Owner: Dan Bisbee. This area is a small remnant of the outwash terrace along Town Highway No. 4. It is located about 0.75 mile south of the Moretown Town Line, just north of the Bisbee south property line. It is about 315' long by an average of 140' wide and has gentle, rounded sides. A wet area lies at its east side and drainage flows around its north end. Access is along the property line fence for about 325' west from the Town Highway. Test #1 was dug 135' from the property line near the center of the feature. From 1'-3.5' is a quite stony fine gravel over 1.5' of gravelly sand. From 1'-5' was sampled as Test #1A. From 5'-8', sampled as #1B, is coarse sand with pebbles. Silt to clay was hit at 8'. A composite sample of the test hole would have been a specification gravel. Test #2 was dug 130' northeast of Test #1, 85' from north end of the feature.
	1B	1969	5-8	-----	No	100	92.4	70.1	4.2	1.3 0.9*	1	----	Sand	
	2	1969	NOT SAMPLED											

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 6

Map Ident. No.	Field Test No1	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Siece Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														below 1.5' of overburden only 2.5' of gravel occurs. It bottoms in silt to clay. No sample was taken. This area would be available as a source of a small quantity of Sub-base of Gravel, Item 201 that is probably confined to the south one-half of the feature. The area was used as pasture when sampled.
4	1	1969	1-9.5	0-1	No	79.5	63.3	43.4	6.0	1.5	2½	31.0%	Gran. Borr. (Grav.)	Owner: Mrs. Gertrude Viens. This area is a clearing southwest of and above the junction of Vermont Route 100 and State Aid Highway No. 2. It is located northeast of the V. Estey property. The area is part of a terrace on the west side of the Mad River Valley mapped by D. P. Stewart as pebbly sand. Probably the deposits were laid down in shallow water over finer sediments that were deposited in the deep waters of a glacial lake that occupied the valley. Access to the clearing is either through an airstrip (Estey property) from the south or from the northeast through a wooded area, all on Viens property.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 7

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														Test #1 was dug in northeast corner of the clearing, 130' northeast of the Estey-Viens property line. The material is fine gravel with a few cobbles to about 6'. From 6'-9.5' is gravelly sand. Silt was hit at 9.5'. The gravel is flat-bedded. Most stones are sub-round to sub-angular.
	2	1969	1-10	0-1	No	92.4	73.8	55.3	3	0.5	1	24.9%	Gravel	Test #2 was dug 115' N. 30° W. of Test #1 at north side of clearing. The more-or-less flat, wooded surface of the terrace continues north for about 180' to the north slope of the feature that stands above State Aid Highway No. 2. The material in Test #2 is flat-bedded, very fine gravel, pebbly coarse sand and gravelly sand. Overall, it is quite clean. The test bottomed in fine sand at 10'.
	3	1969	1-7	0-1	No	78.6	63.0	44.1	5	1.3	1	24.0%	Gravel	Test #3 was dug 160' N. 30° W. of Test #2, 75' east of Estey property line, and 80' south of north side of the feature. The material is gravel with an occasional small cobble. It bottoms in fine sand at 7'.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 8

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				This area would be a good source of gravel with a probable maximum depth of 10'. The araa represents north and east extensions of 2 pits on the Estey property (Map Identification No.'s 5 and 6).
5	1	1969	1-6	0-1	Yes	56.8	50.4	37.4	4.0	1.3	3	21.2%	Gravel	Owner: Vaughn Estey. This area is a small pit and vicinity located north of the airstrip north of Town Highway No. 6. The pit is on the pebbly sand terrace immediately west of Map Identification No. 4. Access is by a field road through the airstrip for about 0.25 mile from the Town Highway. The pit is shallow with 5- to 7-foot faces. It is 125' long x 100' wide. Its extensions from the northeast around to the west are wooded. Strippings are atop northwest and southeast faces. Test #1 was a handsample on 6-foot northwest face. Log of Test: 0'-1'; ovbdn. (below the strippings); 1'-5', hard-packed gravel with some tabular stones and cobbles; 5'-6',

*Percentage of Total Sample

TABLE I

WAITSFIELD 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 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abfasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1969	0-11.5	----	Yes	100	100	94.3	21.7	3.3 3.1*	1	----	Gran. Borrow (Sand)	pebbly sand. The face bottoms in coarse sand. Test #2 was dug in floor below Test #1. Beds of coarse to fine sand with pebbles were exposed and sampled. Below 6' are silt seams. Silty sand was hit at 11.5'.
	3	1969	0.5-6.5	0-0.5	Yes	70.9	52.1	34.8	8.0	2.3	1	30.4%	Gran. Borrow (Gravel)	Test #3 was a handsample of the north face. The material is gravel with occasional cobbles that bottoms in sand at 6.5' near the floor level. The sample failed to meet abrasion requirements for Item 201, Sub-base of gravel.
	4	1969	0.5-6.5	0-0.5	No	80.1	65.9	51.5	6.0	1.0	1	22.6%	Gravel	Test #4 was dug 65' southeast of southeast corner of pit. The test represents an east extension into the Veins property. The material is fine gravel with a few cobbles. There was one thin lens of gravelly sand. Fine sand occurs at 6.5'. The contact has a slight northeasterly dip.
	5	1969	1.5-8	0-1.5	No	72.8	54.7	38.7	6.0	2.3	3	27.3%	Gran. Borrow (Gravel)	Test #5 was dug 120' northeast of Test #4, 55' east of the pit's northeast corner. The material is a fairly good looking gravel with some cobbles and many sub-angular to sub-round stones. There

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 10

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														are also a few tabular stones. Fine sand occurs at 8'. The pit lies between 135' and 150' west of the Viens property. A northeast to north extension is only brush and could be easily stripped. There is about 100' of extension north to the north slope of the terrace. A south extension of the pit is respresented by tests in Map Identification No. 6. Gravel from this pit was used on the Route 100 relocation project.
6	1	1969	0.5-7	0-0.5	No	94.2	83.1	67.4	12.7	3.0 2.0*	3	21.5%	Gran. Borrow (Sand)	Owner: Vaughn Estey. This area is the smoothed-over site of a large pit from which material for the Route 100 relocation project was taken. It is located in the northeast and north part of the property north of the air-strip and lies south of Map Identification No.'s 4 and 5. Test #1 was dug atop former northeast face, 105' east of Estey-Viens property corner. The material is statified gravel, sand and gravelly sand overlying fine sand at 7'. The sample has too many pebbles for Item 202, Sub-base of

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 11

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1969	1-9	0-1	No	90.9	74.9	49.8	4.0	0.8	1	22.8%	Gravel	Sand. Test #2 was also dug on former northeast face, 240' east-southeast of Test #1. The material is similar to but more stony than Test #1. Fine sand was hit at 9'. Tests #1 and #2 represent a possible extension into Viens property.
	3	1969	0.5-4.5	0-0.5	No	100	100	100	76.0	16.0*	1	-----	-----	Test #3 was dug in the floor of the pit, 130' from the Viens property line, and 145' from an eroded gully at the east side of the terrace. (Silty sands to silts are exposed in the gully.) The material is very fine to silty sand, too fine for Granular Borrow, Item 105.
	4	1969	0.5-7	0-0.5	No	83.0	71.8	53.8	2.0	0.3	1	21.9%	Gravel	Test #4 was dug 190' west of Test #3 atop former west face of the pit. The test is on a spur or neck between the former northwest and southwest lobes of the pit. The material is a fine gravel with a few cobbles and 1 or 2 small boulders. The gravel is well-graded and flat-bedded. It bottoms in tan fine sand at 7'.
	5A	1969	0.5-7.5	0-0.5	No	76.0	56.2	39.3	7.0	1.5	1½	25.2%	Gran. Borr. (Grav.)	Test hole #5 was dug 275' N. 20° W. of Test #4, 200'

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 12

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	5B	1969	7.5-11	-----	No	100	94.4	88.8	44.4	8.8 7.8*	1	----	Gran. Borr. (Sand)	south of the pit at Map Identification No. 5. The test is beside the pit access road, and is 130' east of woods. From 0.5'-7.5' was gravel with cobbles, sampled as Test #5A. Test #5B was sampled from 7.5'-11; in tan fine sand. The test bottoms in silty sand. A composite sample taken from 0.5'-11' would have had enough stone for a specification gravel, but would have had excess material passing the #100 and #270 screens for Item 201. Tests in this area substantiate that the Viens property would be a source of specification gravel, and that a west to northwest extension (the south extension of Map Identification No. 5) could be worked for gravels some of which would meet Item 201 specifications.
7	1	1969	1-9.5	0-1	No	92.6	77.8	58.7	2.0	0.3	1	22.7%	Gravel	Owner: Vaughn Estey. This area is south to west of the smoothed-over pit and comprises a large portion of the terrace along the northeast side of the air strip, and southwest of it.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 14

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														A water line runs along the southwest edge of the airstrip. The material is a flat-bedded, fairly fine gravel overlying coarse sand at 8.5'. Water entered at 10' in coarse sand.
	5A	1969	1-5.5	0-1	No	73.4	56.4	39.3	6.0	1.0	11	21.5%	Gravel	Test hole #5 was dug 525' southeast of Test #4, 105' northeast of Town Highway No. 6, and 140' southwest of the airstrip. Test #5A was sampled from 1'-5.5' in a well-graded gravel.
	5B	1969	5.5-9.5	---	No	100	100	91.4	11.9	1.3 1.2*	1	----	Sand	Test #5B was sampled from 5.5'-9.5' in a medium or coarse sand. Fine sand occurs below 9.5'. The grouped Tests #1, #2, and #3 represent a large area of gravels with an estimated maximum thickness of 11'. Tests #4 and 5A represent another large gravel area. Possibly the existence of the private airstrip would prevent a pit being opened in these areas. Possibly the woods north and northeast of Tests #1, 2, and #3 could be cleared and a pit opened there. In that location there will be

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 15

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	6	1969	1-8.5	0-1	No	97.6	75.6	53.5	16.0	6.0	2	24.4%	Gran. Borr. (Grav.)	no interference with activity on the airstrip. Test #6 was dug south of smoothed-over pit, northeast across the runway from the old hangar. The test is 185' from the east end of the terrace. The test represents a south extension of the smoothed-over pit, but it is probably too close to the runway to be worked. The material is a fine gravel with 2 silty sand seams that bottoms in fine sand at 8.5.
8	1	1969	1-7.5	0-1	No	61.1	49.7	34.5	8.0	3.0	3½	23.4%	Gravel	Owner: Vaughn Estey. This area is extreme northwest end of the airstrip on the pebbly sand terrace northeast of Town Highway No. 6. Test #1 was dug on the northeast side of the runway about 0.4 mile from the entrance into the southeast side of the airstrip. The terrain in the woods northeast of the test continues flat to the north side of the terrace. The material in Test #1 is a cobbly gravel with some tabular stones. Bedding is indistinct but seems to be flat. The gravel appears somewhat

*Percentage of Total Sample

TABLE I

WAITSFIELD 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	1969	2-9.5	0-2	No	57.9	44.1	25.8	8.0	3.0	2	21.3%	Gravel	dirty. About 5% of stones exceed 6". Sand was hit at 7.5'. Test #2 was dug 525' N. 30° W. of Test #1, and 425' from the northwest end of the runway. At the northwest corner of the cleared area the edge of the terrace slopes down toward the north. The material in Test #2 is a hard-packed bouldery and cobbly gravel with about 10% exceeding 6". The hole bottoms at 9.5' in the same material. No sorting or bedding was evident in this test. Possibly the material either had been transported only a very short distance from its source before being deposited; or it represents deposition with little sorting directly from stagnant ice blocks lying near the side of the valley.
9	1A	1969	1-3	0-1	Yes	86.9	66.4	45.4	7.0	2.0	2½	24.1%	Gravel	Owner: Vaughn Estey. This area is a small pit located southwest across Town Highway No. 6 from the private airstrip. The pit is 265' along the road and is 190' deep. The faces vary

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 17

Pap Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														from 5'-9', and their tops are wooded. The extension of the pit from northwest to south is limited to 20'-30' because the terrain drops into a gully occupied by an intermittent, southeast-flowing brook. Test #1A was a handsample from 1'-3' on the southwest face. The material is fine gravel.
	1B	1969	3-8	---	Yes	100	100	98.2	53.0	18.0 17.7*	1½	---	---	Test #1B was a handsample of beds of fine sand and seams of silt to clay on the bottom 5' of the southwest face. A composite material on this face would be marginal for Granular Borrow, Item 105 due to a high percentage passing the #270 screen.
	2	1969	0.5-5	0-0.5	Yes	100	100	99.4	81.0	17.0	1	---	---	Test #2 was dug on southwest side of pit floor. From 0.5'-5' is silty sand too fine for Granular Borrow. The material is moist. Silt occurs at 5', the elevation of the pit floor is about 10' below that of the airstrip across the road.
	3	1969	2-7	0-2	No	98.7	96.7	92.3	12.0	0.8 0.7*	1	---	Sand	Test #3 was dug 120' southeast of the pit in an area that appears to have been stripped and worked in the

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 16

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														past. Below 2' of silt and pebbles is a pebbly coarse sand, that bottoms in silt at 7'. The south to southeast extension of the pit seems to offer the best potential for granular material in this area. A lobe or spur of the pebbly sand terrace on which this area and the preceeding five Map Identification No.'s are located is about 75'-100' wide and extends southeast about 100' from Test #3. Drainage gullies have begun to encroach upon the margins of the terrace south and southeast of this area.
10	1	1969	1.5-3.5	0-1.5	No	90.5	82.3	67.6	3.4	1.0 0.7*	2½	---	Gran. Borrow (Sand)	Owner: Vaughn Estey. This area is hummocky-surfaced portion of the pebbly sand terrace that lies west to south across a shallow gully from Map Identification No. 9. The area is wooded to brushy and has many irregular clearings. Access is by a woods road leading from Town Highway No. 6 at a point about 0.1 mile northwest of Map Ident. No. 9. Test #1 was dug on the

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. #19

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														woods road about 420' south-southeast of the Town Highway. From 1.5'-3' is a reddish stony sand overlying 2' of fine gravel. From 5'-8.5' is stony sand. Water entered at 8.5' is fine gravel or stony sand. The material has too many pebbles to meet Item 202 specifications.
	2	1969	1.5-9.5	0-1.5	No	100	95.2	84.9	29.7	9.0 7.6*	3½	---	Gran. Borrow (Sand)	Test #2 was dug bedide the woods road 255' S. 20° E. of Test #1, 55' from the edge of the shallow gully, and about 175'-200' southwest of the pit at Map Ident. No. 9. Log of Test: 0-1.5', ovbdn.; 1.5'-4', gravelly sand; 4'-9.5', fine and coarse sands. The test hole bottoms in fine sand.
	3A	1969	1-4	0-1	No	92.6	77.2	59.8	6.0	1.0	1	24.4%	Gravel	Test hole #3 was dug on flat, thinly wooded area 245' S. 60° E. of Test #2. The gully between this area and the pit has become deeper and quite steep-sided. From 1'-4' in this test is fine gravel sampled as Test #3A.
	3B	1969	4-9	---	No	100	100	97.0	43.7	4.5 4.4*	1	---	Gran. Borrow (Sand)	Test #3B was sampled from 4'-9' in fine or very fine sand. A composite sample of the material in this test would not have met specific-

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 20

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														ations for either Item 201 or 202, but would have been satisfactory for Item 105. The woods south and west of where tests were dug prevented further testing.
11	1	1969	1-6.5	0-1	No	88.1	85.8	71.6	17.9	3.0 2.1*	1½	---	Sand	Owner: Vaughn Estey. This area is a small flat pasture terrace west of and above Vt. Rte. 100 behind the owner's barn. The pasture is south across a wooded gully from Map Ident. No. 10. Bedrock is exposed in a neighboring property a short distance southwest of this area. Test #1 was dug 60' from east side of terrace under a utility line. From 1'-4' is gravelly sand. It is underlain by 2.5' of sand. The test bottomed in clay. The pasture is about 300' E-W x 140' N-S. Its west end narrows and does not appear to be granular.
12	1	1969	1-7.5	0-1	No	79.2	71.2	61.5	16.0	7.0	1½	20.9%	Gran. Borrow (Grav.)	Owner: Paul Hartshorn. This area is pasture southwest of owner's barn, and west of Vt. Rte. 100. A small terrace located at the foot of a pasture slope was sampled with Test #1. This

*Percentage of Total Sample

TABLE I WAITSFIELD GRANULAR DATA SHEET NO. 21

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec	Remarks
														terrace is 310' N-S, and averages 60' E-W. The test was near its north end. The material is a fine, somewhat dirty gravel above large rock fragments at 7' and silt to clay at 8'. Tests #2 and #3 were dug on top of pasture west of and above the terrace. The material was silt to clay for at least 3' and no samples were taken.
	4	1969	N O T S A M P L E D											Test #4 was dug on more-or-less flat area in pasture north of Test #1 and about 200' west of the owner's barn. From 1.5'-3' is silty gravel overlying 3' of rocky silt. No sample was taken. Although pasture north and west of the small terrace is also included within a pebbly sand terrace, the material is not granular, but appears to be glacial till. The granular material in the small terrace would probably be available for construction purposes.
13	1A	1969	0.5-12	0-0.5	Yes	85.6	71.0	50.7	4.0	1.0	1½	24.0%	Gravel	Owner: Elwin Neill. This area is a small pit at the west edge of Town

*Percentage of Total Sample

TABLE I

WAITSFIELD GANULAR DATA SHEET NO. 22

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	1D	1969	12-21.5	---	Yes	100	100	96.3	46.2	12.0 11.6*	1	---	---	

*Percentage of Total Sample

Highway No. 8.

The pit is an exposure of material in the outwash terrace along the east side of the valley. The terrace ends in the vicinity of the pit. It is 90'-100' wide west of the road and its south edge crosses the road just north of the pit. The terrace lies mainly east of the road north of the pit. A flat cornfield and the owner's buildings are located on its surface.

The pit is 75' long by a maximum of 28' high. It had been opened by the owner for fill.

The top 7' is gravel and is underlain by 5' of gravelly sand. The face from 0.5'-12', sampled as Test #1A, met requirements for Sub-base of Gravel.

Test #1D was a handsample from 12'-21.5' in beds of fine to silty sand. The bottom 6.5' of the face is silt to clay.

Very little material could be obtained from the pit's west extension. Probably a better source could be opened northeast across the road

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 23

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														from the pit in the south edge of the terrace. Probably gravel would continue in that portion of the terrace and might be 10'-12' thick. The owner would allow no further testing.
14	1A	1969	1-7.5	0-1	Yes	69.8	58.3	43.4	8.0	1.3	2½	21.7%	Gravel	Owner: Mrs. E. S. Wallis. This area is a large, irregular pit and vicinity located about 0.12 mile east of Town Highway No. 4 and 0.35 mile north of Town Highway No. 15. The pit is located north of the access road and Pine Brook. It is within the mapped outline of a portion of outwash terrace. Although the surrounding terrain suggests a delta, no inclined bedding was noted. Possibly only the top, flat beds of the deposit are exposed by the pit. If this is the case, possibly the material would be designated a lake gravel. Test #1A was a handsample of beds of fine gravel with a few cobbles taken from 1'-7.5' on the west face of the pit near the southwest corner.
	1B	1969	7.5-17	---	Yes	74.4	65.3	47.3	12.0	2.0	1	23.6%	Gravel	Test #1B was sampled from a layer of red fine sand and beds of gravelly sand and cobbly gravel on the bottom

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 24

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2A	1969	0.5-4.5	0-0.5	Yes	100	88.7	77.4	4.6	0.8 0.6*	1	---	Sand	9.5' of the face. Much slough occurs at the foot of the face. Test hole #2 was dug near center of pit floor (110' north of access road and 95' from the pit's north face). From 0.5'-4.5', sampled as Test #2A, was interbedded fine sand and pebbly sand.
	2B	1969	4.5-8	---	Yes	96.6	89.5	64.8	3.0	0.3	1	---	Gran. Borrow (Grav.)	Test #2B was sampled from 4.5'-8' in a pebbly gravel or gravelly sand. Water enters at 8'. Sand occurs below about 10'. The sample had too few stones for Item 201. A composite sample would have met requirements for Item 202.
	3	1969	1-15	0-1	Yes	82.0	57.2	42.0	3.0	0.5	1	17.6%	Gravel	Test #3 was sampled on 15-foot north face in open space between clumps of brush and trees. Strippings from atop the north face are in a long, low pile about 15' north of the face. Material on face is a fine gravel with only a few cobbles and small boulders. From 6'-9' it is hard-packed with much apparent silty clay binder. At 10' is a thin silty sand seam. East-west dimension of pit is 160'. There are clumps of brush and

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 25

Tap 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	1969	3-10.5	0-3	No	85.1	71.1	53.8	11.0	1.5	2	18.5%	Gravel	trees on the east face, and in the northeast, northwest, and southwest corners of the pit. Test #4 was dug in the clearing east of and above the pit, 125' east of its southeast corner, and 45' north of the road. The top 3' is silty and organic. From 3' to at least 10.5' is hard-packed gravel with dirty looking fines and mainly sub-angular stones.
	5	1969	1.5-14	0-1.5	Yes	100	89.5	79.0	9.4	0.5 0.4*	1	---	Sand	Test #5 was dug on 14-foot face of a small pit or bank in the west slope of a knoll, about 110' southeast of Test #4. The material on the face is fine to coarse sands with pebbles and an occasional cobble. A clay bed was hit at the bottom of the face. North of the knoll there is a shallow, old pit grown in with trees and brush. The top of the knoll and the east extension of the old pit are wooded and are inaccessible to the backhoe. The clay bottom hit in Test #5 may indicate the base of the granular material. Probably it lies deeper toward

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 26

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	6	1969	2-11	0-2	No	91.0	84.4	65.0	10.4	4.0 2.6*	1½	---	Gran. Borrow (Sand)	the west. Test #6 was dug 145' . . . northeast of Test #4 and 150' east-southeast of the pit, in the clearing representing the pit extension to the east. Below 2' is a dirty-looking gravelly sand that becomes fairly clean from 5.5'-8'. From 8'-11' is a pebbly sand. The material is excessively pebbly for Item 202.
	7	1969	0.5-10.5	0-0.5	Yes	96.1	90.5	72.8	11.6	3.0 2.2*	1	12.3%	Sand	Test #7 was dug atop . . . northeast corner of pit. The material is a stony sand to 7.5', underlain by gravelly sand with a few cobbles.
	8	1969	1-11	0-1	No	89.1	73.2	63.9	18.0	2.5	1	---	Gran. Borrow (Grav.)	Test #8 was dug 145' north of Test #7, 80' east of Test #3. The material is a stony sand with a cobbly zone at 6.5'-8.5'. It is underlain by sand to at least 11'.
	9	1969	1-10.5	0-1	No	66.8	56.9	41.9	9.0	1.8	1	19.0%	Gravel	Test #9 was dug 100' northeast of Test #3 on a 90-foot wide terrace lobe that extends for about 175-200' northeast of the pit. This lobe is separated by a wooded gully from the west extension represented by Tests #1A-#1B. The material in Test #9 is a cobbly gravel with some small boulders.

*Percentage of Total Sample

TABLE I

WAITSFIELD 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				Bedding is indistinct but seems to be flat. The cobbly gravel gives to stony sand at 10.5'. Of two preliminary samples from this pit taken by the resident engineer for the Route 100 relocation project, one met Item 201 specifications. Area would be good source of gravel. A north extension is limited to 90' by a gully. The west extension was inaccessible for testing by the backhoe. An east extension has less stony material.
15	1	1969	1.5-8	0-1.5	No	71.5	57.6	41.3	14.0	5.0	1	27.3%	Gran. Borrow (Grav.)	Owner: Mrs. E. S. Wallis. This area is the vicinity of an old, shallow, wooded pit southeast of Map Ident. No. 14. The pit lies just north of the small bank where Test #5 of that Map Ident. No. was sampled. Test #1 was dug 25' north of the pit, in the woods 130' east of the clearing. The material is a moist, dirty-looking cobbly gravel. Bedding is very vague. Large blocks, and boulders were hit at 8'. Much clearing would be needed in order to work

*Percentage of Total Sample

TABLE I

WAITSFIELD 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* 1½"	5/8"	#48	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
26	1	1969	1.5-10.5	0-1.5	No	64.8	55.2	37.1	11.0	4.0	1	15.6%	Gravel	any of the pit's extension. Owner: Albert Lavanway, Jr. This area lies between the dump access road and the Town pit, at the junction of Town Highways No. 4, and No. 15. The area is within a portion of an outwash terrace that occurs north of the junction. It is about 230' NE-SW x 350' NW-SE; and is the northeast extension of the Town pit. Test #1 was dug 70' northeast of the Town pit, and 90' southeast of the dump property. The material to 5.5' is a cobbly gravel with about 5% of the stones estimated to exceed 6". The stones are sub-angular. From 5.5' - 10' the material is less coarse, and below 10' is gravelly sand.
	2	1969	S-N	O	T	S	A	M	P	L	E	D		Test #2 was dug 225' S. 30° E. of Test #1 in a brushy area about 7' below the general level of the terrace. The material is nested cobbles and boulders. No sample was taken.
	3	1969	1-7.5	0-1	No	49.5	35.9	23.4	12.0	3.0	2	20.7%	Gravel	Test #3 was dug 100' due south of Test #2 on the terrace, about 75' west of Town

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 29

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														Highway No. 4. The material is a cobbly gravel with tabular to sub-angular stones. An estimated 15%-20% exceeds 6". There is some silty clay coating, but the minus 4-inch portion looks fairly good. Difficult digging prevented going below 7.5'.
17	1	1969	0.5-8	0-0.5	Yes	54.7	45.8	33.4	10.0	2.5	1½	16.6%	Gravel	Owner: Town of Waitsfield. Area is a large, shallow pit at the junction of Town Highways No. 4 and No. 15. Its south and southeast extension is on Town property. A northeast extension is on Lavanway property. The pit is about 460' NW-SE by a maximum of 220' NE-SW. Its northwest portion is used by the Town as a collection site for dead elms, stumps and old equipment. The north corner has an extension into the dump. Two small, shallow sub-floors show sand. Test #1 was a handsample on face in the southeast corner. The material is cobbly tabular gravel with a few small boulders. Bedding is indistinct. The pit shows

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 30

p dent. No.	Field Test No.	Year Sampled	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T44-35	Passes VHD Spec.	Remarks
														many tabular stones and many boulders including some of greenstone, primarily along the northeast face. Test #1 represents an area of 100'-125' N-S x about 150'-175' E-W.
	2	1969	0.5-14	0-0.5	Yes	63.2	53.4	41.5	12.0	1.5	1	19.3%	Gravel	Test #2 was a handsample on northeast face about 120' north of Test #1, just north of a jog or corner of the face. The test represents material in a northeast extension into Lavanway property. The test is at the north corner of a triangular area of gravelly material on Town property measuring about 225' N-S x 150'-175' east west. Log of Test #2: 0-0.5', ovbdn.; 0.5'-9', cobbly gravel; 9'-12', gravelly sand; 12'-14', sand. Silt occurs at 14'. Overall, about 10% of face material exceeds 6", and includes a few boulders.
	3	1969	0.5-10	0-0.5	Yes	80.4	63.7	43.7	9.0	2.0	1	16.1%	Gravel	Test #3 was dug at north end of northeast face and represents an extension toward the dump. From 0.5' to 8' is a fairly fine gravel with a few cobbles. From 8'

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 31

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	4	1969	0.5-7.5	0-0.5	Yes	100	92.9	83.1	19.1	4.0 3.2*	1½	---	Gran. Borrow (Sand)	is a fairly fine gravel with a few cobbles. From 8' to below floor level is fine sand. Test #4 was dug on face and in floor of small lower level in the southwest side of the pit. From 0.5'-1.5' is a dirty pebbly sand; 1.5'-5.5', pebbly sand; 5.5'-7.5', fine sand. Silt over plastic clay occurs below 7.5'.
	5	1969	N O T S A M P L E D											Test #5 was dug in pit floor, 155' southeast of Test #4. The test is east of the access road from Town Highway No. 15, and is 70' from the south end of the pit floor. About 2.5' of sand overlies clay. No sample was taken.
8	1	1969	1-10	0-1	Yes	90.4	82.9	76.2	10.7	2.5 1.9*	1½	---	Gran. Borrow (Sand)	Owner: Unknown. The area is a small pit on the east side of Town Highway No. 19, about 0.15 mile north of Town Highway No. 16. It is in the west end of an elongate knoll or ridge extending west from a west-sloping field. The ridge is 80'-100' wide and merges with the field about 150' east of the pit. Test #1 was a handsample

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 32

Map Ident. No.	Field Test No.	Year Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion ASSHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				on upper part of 18-foot face. The material is gravel, fine sand, and pebbly sand. Below 10' is coarse sand concealed by slough. The pit is in a kame terrace as mapped by D. P. Stewart. The feature is above the south side of Pine Brook which, together with its tributaries, drain a large area in the east part of town.
19	1	1969	1-14	0-1	Yes	97.5	96.1	89.7	26.9	7.0 6.3*	1½	---	Gran. Borrow (Sand)	Owner: Town of Waitsfield. Area is a five-acre field above the south side of Pine Brook, northwest of the end of Town Highway No. 19. The field has a gentle westerly slope that continues into the woods to the west. The field's north slope down to the brook is wooded and very steep. South of the field there is a gully, occupied by an intermittent stream. The field is probably on a kame terrace. Two pits had been opened at the west end. The south pit lies 95' from the southwest corner, and is 230' long by a maximum of 80' wide. Test #1 was a handsample on its east face near the south end. From 1.5'-2.5' is pebbly

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 33

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1969	0.5-10.5	0-0.5	Yes	100	97.7	95.4	56.3	14.0 13.4*	1	---	---	sand underlain by beds of medium and fine sand and a few thin, silty sand seams. Fine sand occurs at floor level. Test #2 was dug in floor of south pit at its south end. The material is fine to silty sand with thin silt seams and a few small pebbles. Silt occurs at 10.5'. The south pit exposes sands except for a 50-foot x 50-foot excavation atop its east side where a thin layer of gravelly sand is exposed.
	3	1969	2.5-13	0-2.5	Yes	91.6	74.7	58.1	24.0	8.0	1½	15.0%	Gran. Borrow (Grav.)	Test #3 was a handsample on west face of north pit. The test represents a west extension into the woods. Log of Test: 0-2.5', ovbdn.; 2.5'-4.5', gravelly sand; 4.5'-7', silty sand; 7'-13', fine gravel. The beds have a slight westerly dip. Overburden on the west face varies from 2'-3' and has many roots. North pit is 110' long and a maximum of 70' wide. It is 65' from the north side of the terrace.
	4	1969	0.5-11	0-0.5	Yes	100	100	92.9	18.6	3.0 2.0*	1	---	Gran. Borrow (Sand)	Test #4 was dug in north end of floor of north pit.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 34

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion ASSHO T-4-35	Passes VHD Spec.	Remarks
	5	1969	1-11	0-1	No	90.0	83.8	77.6	19.4	4.0 3.1*	1½	---	Gran. Borrow (Sand)	The material is a fairly uniform fine to medium sand with a few small pebbles. Gravelly sand was hit at 11'. Test #5 was dug 100' east of north pit in west end of old stockpile area. The material is interbedded sand and gravelly sand, bottoming in gravelly sand.
	6	1969	1-12	0-1	No	89.8	80.6	59.5	19.0	7.0	1	20.9%	Gran. Borrow (Grav.)	Test #6 was dug about 460' southeast of Test #5, beside the pit access road, about 100' from the north edge of the field. Log of Test: 0-1', ovbdn.; 1'-7', flat-bedded fine gravel; 7'-8.5', silty sand; 8.5'-12', gravelly sand. The test bottoms in gravelly sand.
	7	1969	1-11	0-1	No	93.2	83.4	67.8	10.9	2.0 1.4*	1	18.5%	Gran. Borrow (Sand)	Test #7 was dug 220' from the east corner of the field at its south side. The material is flat-bedded fine gravel and pebbly sand. The test bottoms in stony and silty sand at 11'.. Gravelly material in this area predominates on north side and west end. Also, east end would probably be more gravelly than the southwest part. The gravels samp-

*Percentage of Total Sample

TABLE I

WAITSFIELD 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 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														led had excess material passing the #100 and #270 screens for Item 201. The sands were either too stony or had an excessive fine fraction for Item 202.
20	1	1969	1-5.5	0-1	No	100	100	97.0	36.9	10.0 9.2*	2	---	Gran. Borrow (Sand)	Owner: Harry Smith. Area is an old pasture at the west side of Town Highway No. 4, with two low, broad ridges that trend a little east of north. The general slope of the pasture is gentle to the north or northeast. D. P. Stewart has mapped the vicinity as kame terrace. Test #1 was dug on the low ridge 25' west of the road. The material is stratified pebbly sand, fine sand and silty sand to 5.5'. The test bottoms in silt.
	2	1969	1-10	0-1	No	100	100	96.9	47.5	10.0 9.7*	1	---	Gran. Borrow (Sand)	Test #2 was dug near the north end of the more westerly ridge, about 275' west of the road. Ridge is 8'-14' high, and about 110' wide at its base. The material to 3' is medium sand with a few small pebbles. From 3'-10' is fine sand with silt layers. The ridges probably represent very localized de-

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 36

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														position in contact with glacial ice.
21	1	1969	1-7.5	0-1	No	100	98.5	91.2	50.0	26.0 23.7*	1	---	---	Owner: Harry Smith. Area is ridge that extends to the west from a large flat field west of Waitsfield Common (the intersection of Town Highways No. 4 and No. 16). Access is by a field road for about 0.12 mile. This feature is included in a mapped lake gravel deposit as designated by D. P. Stewart. About 300' west of the field the ridge drops down the slope of the valley. Test #1 was near the lower end of the ridge, boulders show at the surface. Sandy silt with a few rock fragments encountered. Test #2 was dug on flat top of ridge, 200' west of the field. The material is unsorted silt or silty sand with rock fragments. It looks like glacial till. The owner would not allow testing in any portion of the flat fields east of this area.
	2	1969	1-7.5	0-1	No	100	100	88.3	62.0	32.0 28.1*	1	---	---	
22	1	1969	1-9.5	0-1	No	88.1	73.3	58.0	25.0	12.0	1	25.4%	---	Owner: J. Edgar Tremblay. This area is a pasture with knolls located south of

*Percentage of Total Sample

TABLE I

WAITSFIELD 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 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														and above Town Highway No. 15, east of and above the Mad River. D. P. Stewart had not included the area within his granular outlines. It may be an outwash feature. It is a rolling pasture that drops off to the south into a drainage gully. The surfaces of the high spots appear stony. Test #1 was dug on a prominent knoll near the east side of the pasture. The material is a hard-packed stony sand or gravel. The stones are sub-angular to sub-round. There are quite a few cobbles. There is only the vaguest hint of stratification. The fines are dirty-looking. Access is by a pasture drive leading up from Town Highway No. 15.
23	1	1969	1-7.5	0-1	No	81.1	71.4	52.2	16.0	8.0	4	29.1%	---	Owner: Ernest Tucker. This area is a pasture on a terrace about 0.2 mile west of Vt. Rte. 100, beyond the end of Town Highway No. 11. Access is by a private road. The terrace is above the north side of an east-flowing stream and is mapped by D. P. Stewart as a lake gravel. A

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 38

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														water line crosses the west side of the pasture. A utility line crosses the south part of the pasture.
	2	1969	1-7	0-1	No	77.4	63.0	43.2	5.0	1.0	3½	20.0%	Gravel	Test #1 was dug at the south edge of the pasture, 60' east of the road onto the terrace. The material is a reddish fine gravel to 3.5', underlain by gray fine gravel that bottoms in clay at 8'. Water enters at 7.5'.
	3	1969	1.5-8.5	0-1.5	No	75.3	60.2	43.2	6.0	1.0	2	31.3%	Gran. Borrow (Grav.)	Test #2 was dug at the west side of the pasture, 65' from its southwest corner, and 115' west of Test #1. The material is a fairly fine gravel with a few cobbles. The top 2.5' is silty. Clay occurs at 7'. Test #3 was dug about 175' north of Test #2 at the west side of the pasture. There is only 60'-70' of material between the water line and the edge of the terrace. The material is a cobbly gravel with some tabular stones and a few small boulders. Below 5' the gravel is less coarse. Clay occurs at 8.5'. This sample failed to meet abrasion requirements for Item 201.

*Percentage of Total Sample

TABLE I

WAITSFIELD 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				
	4	1969	1.5-7	0-1.5	No	75.9	60.7	44.4	14.0	7.0	4	28.8%	---	Test #4 was dug 115' east of Test #3, 205' north of Test #1. The material is a dirty-looking cobbly gravel. The top 3' is especially dirty. The gravel has some tabular stones. Clay was hit at 7'. A high organic content, probably from the top 3', failed this sample for Item 105, granular borrow. Test #1 failed for the same reason. Probably the material in this area would not be available because of the water line. The east part of the pasture does not appear as granular as the west edge.
24	1	1969	0-5.5	---	Yes	100	100	88.5	50.0	24.0	1½	---	---	Owner: Ernest Tucker. Area is a pit in the southeast end of a wooded ridge about 0.36 mile northwest of Vt. Rte. 100. Access is via Town Highway No. 11 and a pasture road. The ridge is a lobe of a feature designated by D. P. Stewart as lake gravel. It is located on the northeast side of a small stream and is west of Map Ident. No. 23. Test #1 was dug on north side of pit floor that meas-

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 40

ap Ident. o.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Cklor AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1969	1.5-12	0-1.5	Yes	68.6	55.4	40.1	5.0	2.0	1½	30.5%	Gran. Borrow (Grav.)	ures 165' x 65'. From 0-2" is silt that overlies pebbly sand and silty sand. Clay occurs at 5.5'. Test #2 was a handsample on 13-foot pit face. The material is a coarse, tabular gravel with a few interbeds of finer gravel. The northeast end of the face (northeast of Test #1) is fine gravel with gravelly sand interbeds. Gravelly sand occurs at the bottom of the face.
	3	1969	2-12	0-2	No	94.1	81.3	65.6	7.2	1.0 0.7*	1	---	Gran. Borrow (Sand)	Test #3 was sampled on bottom part of the northeast slope of the feature. The slope is wooded. There seems to be about 2' or 2.5' of top on the material. A 12-foot section was exposed and sampled. From 2'-4' is gravelly sand; 4'-12', interbedded fine sand and pebbly sand. Silt to clay occurs about 2' below the bottom of the test. Apparently fairly coarse gravels occur in the southwest portion of the feature. The northeast part seems to be gravelly or pebbly sand. E. L. Jones of Moretown

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 41

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														had gravel rights in this area. The owner stated that a pine plantation about 175'-200' northwest of the pit would limit the development of this source. The ridge or lobe has a maximum NE-SW dimension of 100'-125'.
25	1	1969	1-8	0-1	Yes	88.7	67.5	53.5	10.0	2.5	1	29.2%	Gran. Borrow (Grav.)	Owner: George Brightenback. Area is pit in a knoll west of Town Highway No. 14. The pit may be partly in the town of Fayston, as the town line location is not known. Access is by a log road and pasture road leading about 0.22 mile west from Town Highway No. 14. The pit is in two levels. The lower, westerly level has a face 85' E-W and 24'-26 high. The upper 16' is overall a fine gravel in beds of cobbly gravel and gravelly sand, The bottom 8'-10' is silty clay seams and fine sand. The east side of the pit has an 8-foot face and is above the silt beds. Test #1 was a handsample on this face. The material is a fine gravel with many tabular stones. This face bottoms in fine sand.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 42

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2A	1969	1-16	0-1	Yes	82.8	76.5	62.4	8.0	2.0	1½	---	Gran. Borrow (Grav.)	Test #2A was a handsample on upper high face in west part of pit. Log of Test: 0-1', ovbdn.; 1'-6', gravelly sand; 6'-16', gravel and gravelly sand beds. This sample had too few stones for Item 201.
	2B	1969	16'-26'	---	Yes	100	100	74.5	44.5	11.0 8.3*	1	---	---	Test #2B was a handsample below Test #2A. From 16'-19' is gravelly sand; from 19'-26' are seams of silty clay and beds of fine sand. The pit is an exposure of a knoll at the southeast end of a broad ridge. The knoll is 120' wide (E-W). The ridge narrows gradually to 10'-15' wide at a point about 100' northwest of the pit. Beyond this point the ridge merges with the non-granular hillside. The feature is part of a deposit mapped by D. P. Stewart as lake gravel. The granular material appears to extend eastward down slope from the pit as a broad ridge. Permission could not be obtained to sample it, however.
26	1	1969	1-13	0-1	Yes	83.1	76.0	58.2	24.0	5.0	1½	18.8%	Gran. Borrow (Grav.)	Owner: Robert Schreiner. (formerly Moriarty).

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 43

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1969	0.5-7	0-0.5	Yes	85.7	62.5	62.5	42.0	7.0	1	---	Gran. Borrow (Grav.)	This area is a large, northwest-sloping meadow with a roadside pit located on the northeast side of Town Highway No. 26. The area is within delta gravels as mapped by D. P. Stewart. The pit is 70' x 90' with faces varying from 10'-13' high. There is some sloughing. Test #1 was a handsample of a backhoe exposure on the northeast face. From 1'-11' is a fairly fine gravel with a few cobbles. From 11'-13' is fine sand bottoming in silt to clay. Some tabular stones, a few of which are cobble-size, show around the pit. Test #2 was dug in the north side of the pit floor, 35' west of Test #1. Log of Test: 0-0.5', ovbdn.; 0.5'-2', dirty fine gravel; 2'-3', silt seam; 3'-4', gravelly sand seam; 4'-7', pebbly sand; silt to clay at 7.5' or 8'. Water entered at 7'. The silt to clay layer that occurs at 13' on the face and at 8' below the floor 35' to the west indicates a local west-

*Percentage of Total Sample

TABLE I

WAITSFIELD 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 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	3	1969	1.5-10.5	0-1.5	No	78.9	63.1	45.3	11.0	2.5	3	21.3%	Gravel	erly dip of the base of the granular material. Test #3 was dug 110' north of Test #1 near the northwest (lower) end of the meadow. The top 2.5' of material is reddish in color, cobbly, and silty. From 2.5' to below the depth of test is a fairly fine gravel with a few cobbles.
	4	1969	1.5-11	0-1.5	No	84.4	68.1	50.9	20.0	5.0	3½	25.4%	Gran. Borrow (Grav.)	Test #4 was dug on northeast side of meadow, 110' from the north corner. There is a high, steep, wooded slope at this side of the meadow that drops down to a tributary of High Bridge Brook. The material in this test is a hard-packed gravel with a few cobbles, and is a little finer that that of Test #3. Like the gravel in Test #3 it contains a few tabular and sub-angular stones.
	5	1969	1.5-10	0-1.5	No	85.1	62.6	40.6	14.0	3.0	2½	20.3%	Gravel	Test #5 was dug 220' due south of Test #4, near the middle of the meadow 140' east of the pit. The material is a fairly fine gravel with a few cobbles and 1 or 2 boulders. A fine or silty sand seam occurs at 8.5'-9'.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 45

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	6	1969	1.5-9.5	0-1.5	No	58.6	49.2	37.2	18.0	4.0	2	21.6%	Gran. Borrow (Grav.)	Test #6 was dug 240' due east of Test #5, 50' from the northeast side of the meadow. The top 3' of the hole was very silty with blocks, boulders, and cobbles. From 3' to below the depth tested is a fairly clean gravel with few stones exceeding 4". The material is quite stony. Bedding is indistinct but appears to be flat. The owner would probably sell material from the meadow provided that it is levelled and smoothed after the material has been removed. The meadow is about 500' long x 300' - 325' wide.
27	1	1969	N O T S A M P L E D											Owner: Joseph Moriarty. This area is a knoll above the southeast (upper) end of the Schreiner meadow. It was tested to determine if the deltaic deposit would extend eastward to this elevation as mapped. A test hole encountered only silt to clay with a few stones in the top 3.5' or 4'.
28	1	1969	0.5-9	0-0.5	Yes	67.6	54.5	40.5	18.0	4.0	2	24.7%	Gran. Borrow (Grav.)	Owner: Ralph Joslin. (property has been sold to a Mr. Higgings. Mervin Kingsbury has gravel rights until

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 46

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														July, 1970). Area is a pit below the southwest side of Town Highway No. 26, across the road from Map Ident. No. 26. The pit was active when sampled, but very little extension from the south around to the northwest end and north side remained. There was a small extension to the southeast. The pit was opened in a ridge that stood above the level of gullies or depressions that now limit the extension. The area is included within an extensive delta gravel deposit. At the time of the survey the pit was being badly managed. Clearing and stripping was not being done. Trees merely toppled into the pit when the gravel beneath them was removed. Test #1 was sampled on upper face at the southeast end of the pit where the town was loading material. The face is 80'-85' long and 12'-13' high. The top 9.5' is gravel. It bottoms in stony silt to clay. The floor of the main pit is about 12'

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 47

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1969	1-8	0-1	No	68.8	57.3	41.6	19.0	5.0	2	20.0%	Gran. Borrow (Grav.)	below the bottom of Test #1 so the base of the gravels must have dropped in elevation toward the northwest. The ridge is 140' wide at Test #1. At Test #2, 85' to the southeast, it is 30'-40' wide. The material in Test #2 is a gravel with a few cobbles and 1 or 2 boulders. By July 1, 1970 the pit will be about depleted.
29	1A	1969	1-10	0-1	No	100	96.9	88.8	44.4	13.0 11.5*	1½	---	---	Owner: Ralph Joslin. (sold to Mr. Higgings). This area is a ridge on the west side of Town Highway No. 26, north of Map Ident. No. 28. A narrow clearing along the top of the ridge was sampled in 2 locations, and a clearing in the west part of a flat area was also sampled. Test #1A was sampled on bank of exposed sand near the south end of the ridge, a short distance in from the road. This bank is 85' northeast across a wooded gully from the pit at Map Ident. No. 28. A near-surface layer of material is stony. Below that is interbedded fine and silty sand.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 48

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	1B	1969	10-17.5	---	No	100	87.5	68.0	14.2	4.0 2.7*	1½	---	Gran. Borrow (Sand)	Test #1B was dug in the floor below #1A. The material is fine sand with a few pebbles. There are 1 or 2 silty layers. The material goes to silt at 7.5' below the floor. This test was dug under a utility line.
	2	1969	1-10.5	0-1	No	87.5	70.3	53.6	20.0	4.0	2	12.4%	Gran. Borrow (Grav.)	Test #2 was dug on ridge near utility pole, 150' northwest of Test #1. Beds of fine gravel and gravelly sand and a few thin silty sand seams were exposed and sampled. A few cobbles were scattered through the gravels. From 9' to below the depth tested is gravelly sand.
	3	1969	1-10	0-1	No	87.9	77.6	66.5	31.0	10.0	1	---	Gran. Borrow (Grav.)	Test #3 was dug 100' N. 60° W. of Test #2 in small clearing atop the steep southwest slope of a wooded flat area. This area is 80'-90' wide (east-west), and continues to the north and northwest for about 100' from Test #3 before dropping off. The flat area is thickly wooded. The material in the test hole is very fine gravel from 1'-4', and is underlain by fine sand and gravelly sand beds. A seam of silty sand occurs at 8.5'-9', and

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 49

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														gravelly sand occurs in the bottom of the test. This area probably consists of gravelly material, both from the ridge and the flat woods, that has an excess passing the #100 and #270 screens for Item 201. It is not known whether the new owner will sell material. Owner: Everett Palmer.
30	1	1969	N O T S A M P L E D											This area is a large field east of State Aid Highway No. 1. It is located west across a tributary of High Bridge Brook from Map Ident. No.'s 28 and 29, and is included in the delta gravel deposit that occurs southeast of and above Waitsfield Village. The test holes were dug near the east and north edges of the field, on gentle slopes above the steep wooded slopes of the drainage gullies. Test #1, dug in the southeast corner, encountered silt and stones to 4'. A few boulders occur near the bottom. No sample was taken.
	2	1969	1-6.5	0-1	No	100	100	87.6	43.0	24.0 2.0	7	---	---	Test #2 was dug 400' north-northeast of Test #1, on the east edge of the field. The material is silty sand to

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 50

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	3	1969	1-9	0-1	No	100	100	74.8	60.0	32.0	2	---	---	silt with a few small stones. It was sampled only to 6.5' and was too fine for Granular Borrow, Item 105. Test #3 was dug 305' north of Test #2, 100' west of the northeast corner. The material is unsorted and consists of silt and stones with minor sand.
	4	1969	1-7	0-1	No	100	100	85.1	50.0	30.0	3	---	---	Test #4 was dug 250' west of Test #3. The material is silt and silty sand with a few small stones. This area is probably on a glacial till surface and should not be included in the water-sorted deposits to the east.
31	1	1969	1-8	0-1	No	100	100	70.1	63.0	11.0	2.0	---	---	Owner: Everett Palmer. This area is pasture south of Map Ident. No. 30. Apparently erosion has produced a rounded topography, which, except for a large knoll, lies below the elevation of the field to the north. Test #1 was dug near the northeast corner of the pasture. The material is a silty sand with a few large, angular cobbles (not sampled) in the top 3' and a few small stones through out.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 51

Tap 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	1969	0.5-9	0-0.5	No	100	100	99.2	78.0	29.0	1½	---	---	Test #2 was dug on top of the large knoll 250' south of Test #1. The material is silty sand to silt that bottoms in silt to clay.
32	1	1969	1-11	0-1	Yes	72.2	52.0	31.7	25.0	3.0	2½	33.3%	Gran. Borrow (Grav.)	Owner: Everett Palmer. This area is two pits in the east slope of a small terrace located on the west side of State Aid Highway No. 1. The material is probably of deltaic origin as shown by inclined beds. The northerly pit is about 60' long (north-south) and has a 12-to-14-foot face. The width of the terrace west of the pit is about 130', and it abuts on a wooded hillside where bedrock is exposed. About 3' of flat-bedded fine tabular gravel overlies ... southeast-dipping beds of somewhat finer gravel. Test #1 was a handsample midway along the face. From 1'-4', flat-bedded gravel occurs; from 4'-10' are beds of fine gravel and gravelly sand. Below 10' is a hard-packed stony sand. The face stands very well. The gravel is somewhat tabular and appears to have some silt to

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 52

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1969	1-8	0-1	Yes	83.4	63.7	38.8	10.0	2.0	2	34.5%	Gran. Borrow (Grav.)	clay as binder. Test #2 was a handsample on face of smaller pit, 260' south of the north pit. The face of the south pit is 8'-9.5' high. The material is tabular fine gravel in nearly flat beds. Below 8' is stony, hard-packed sand. The pit floor is about 7' above an intermittent stream. The meadow northwest of this pit is 175' wide. The owner stated he would use much of the gravel himself. Any that remained would be available. The gravel in this area failed to meet abrasion requirements for Item 201. The pits are less than 300' west of the State Aid Highway.
33	1	1969	2.5-7	0-2.5	No	62.6	53.7	47.0	14.0	4.0	2½	---	Gran. Borrow (Grav.)	Owner: Andrew Baird. This area is a narrow meadow on the west side of the Mad River below the east side of the shopping center at Irasville. The area in question is used to pile slabs from the owner's sawmill. It is upwards of 400' long and 80' wide. Test #1 was dug in south part of area. About 2.5' of

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 53

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														silt to clay overlies a thin sand bed.) The bottom part of the hole is nested cobbles and boulders with minor gravel. Water enters at 7'. The sample met grading requirements, but a wear test could not be performed to determine its suitability for Item 201. It would not be feasible to develope this as a source because of the boulders and water. About 10%-15% of the material is estimated to be boulder-size.
34	1	1969	1.5-7.5	0-1.5	No	69.8	54.4	39.7	3.0	1.0	1½	26.4%	Gran. Borrow (Grav.)	Owner: Johnson Lee. This area is a meadow east of a bend in the Mad River. Just south of point where it is joined by Mill Brook. Access is via a ford of the Mad River from Vt. Rte. 100 at "Beckridge" guest home. This area was mapped as alluvium by D. P. Stewart. Test #1 was dug 165' northeast of the ford on the most northwesterly of three northeast-trending, very low ridges or rolls that may be deposits marking successive positions of the river. These ridges are at most 2' or 3' high. The material

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 54

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1969	2.5-8	0-2.5	No	63.3	50.0	33.9	14.0	4.0	1½	19.0%	Gravel	in Test #1 was a good-looking, clean gravel with some tabular stones, a few small boulders and a log. Water entered at 8' in fine gravel. Test hole was dug to only 7.5' because the gravel caved very readily. Test #2 was dug 225' north-northwest of Test #1, beside the river. The top 2.5' is silt. It overlies a cobbly gravel to at least 8'. The gravel was wet at 7'. The meadow may be a fluvial gravel. A small, low terrace is at its east side, against the hillside.
35	1	1969	1-6.5	0-1	No	82.4	68.8	49.4	7.0	3.0	3	20.4%	Gravel	Owner: Johnson Lee. This area is a large flat field above the east side of Vt. Rte. 100, behind Norms Restaurant. It is the site of the old fair-grounds. The field is mapped as an outwash terrace. Access is by a field road leading in past the chapel. Test #1 was dug at the west edge of the field, 150' north of the access road. The material is a somewhat dirty-looking gravel with few cobbles. It bottoms in silt

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 55

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	1969	1-7	0-1	No	82.0	70.9	55.8	13.0	5.0	2	21.3%	Gran. Borrow (Grav.)	to clay at 6.5'. Test #2 was dug 300' north of Test #1 at the west edge of the field. The material is a fairly fine gravel with a few cobbles and small boulders. It bottoms in silt to clay at 7'.
	3	1969	1-8	0-1	No	90.3	70.2	35.9	4.0	1.5	3½	23.9%	Gravel	Test #3 was dug about 400' north of Test #2, and about 150' from the northwest corner of the terrace. The material is a quite stony, fine gravel from 1'-6', and overlies 2' of sand. Silt to clay occurs at 8'.
	4	1969	1-6.5	0-1	No	74.7	56.7	39.0	5.0	2.0	3	20.8%	Gravel	Test #4 was dug at the north end of the field, 330' northeast of Test #3. The gravel is a little coarser than in the previous tests. Water enters at 6.5'.
	5	1969	1-5.5	0-1	No	90.7	70.4	49.3	5.0	2.5	3½	22.0%	Gravel	Test #5 was dug 310' east of Test #4 at the north end of the field. The material is gravel with a few cobbles. It is dirty above 3.5', and clean from 3.5'-5.5' where clay was encountered. Water entered at 4.5'.
	6	1969	1.5-6.5	0-1.5	No	90.1	70.5	53.4	12.0	4.0	4	22.2%	----	Test #6 was dug 310' south of Test #5, 175' from the east side of the field. From

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 56

Tap Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														1.5'-3' is a dirty pebbly sand. From 3'-5' is sand and gravelly sand. Gravel with cobbles occurs from 5'-6.5'. The hole bottoms in clay. A high organic content failed this sample for Item 105.
	7	1969	1.5-9	0-1.5	No	75.2	63.8	49.7	17.0	4.0	2	21.9%	Gran. Borrow (Grav.)	Test #7 was dug 365' south of Test #6, 195' from the southeast corner of the field. From 1.5'-3' is sand and gravelly sand. A tabular gravel with cobbles occurs from 3'-9'. Water entered at 8'. The test bottomed in silt to clay. This area has thin gravels, wet in the bottom. It is not known if the owner would sell any material.
36	1	1969	1-4	0-1	No	62.7	41.4	28.0	32.0	16.0	3½	22.9%	---	Owner: Richard Bullwinkel. This area is located between the Mad River and Vt. Rte. 100, across from the church. A low knoll stands on a rolling meadow that is about 10' above the river. Test #1 was dug on river bank just west of the knoll. About 3.5' of tabular sandy gravel overlies a thin sand layer and silt to clay.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 57

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				
														The material had excess passing the #270 screen for Item 105.
	2	1969	2.5-10.5	0-2.5	No	75.8	46.7	26.4	30.0	12.0	1½	15.6%	---	Test #2 was dug on the low knoll, 100' east of and 8' above Test #1. The material is a very stony gravel with fairly well-rounded stones. The overburden varies from 2.5'-3' thick. About a half-foot of it, a dirty sand, was included in the sample. Overall, the material has an excess of the fine fraction (minus #270) to meet requirements for Item 105. The knoll in this area may be an eroded and rounded remnant of a fluvial gravel terrace. A higher terrace east of Rte. 100 is mapped as outwash.
57	1	1969	1-6.5	0-1	Yes	57.7	44.5	30.3	20.0	8.2	1	25.0%	Gran. Borrow (Grav.)	Owner: Howard Neill. This area is a pasture knoll and pit below the west side of State Aid Highway No. 1. Access is by a pasture road. For about 0.5 mile. The pit is in the north or northwest side of the knoll, and is about 150' long. Its face varies from 8' to 11' high. Some boulders are exposed on the knoll. Others

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 58

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				occur within poorly sorted and stratified silty gravel with cobbles and a little sand near the top of the pit face. Some pockets of very stony gravel within a predominant hard-packed silty material with stones occur on the lower face. Quite a bit of material had been removed from the pit as shown by 150- x 75-foot floor. Test #1 was dug on 8-foot face 25' from its east end. The material is hard-packed, poorly sorted and stratified. It has much apparent silty clay and a minor sand portion. There are some soft stones. About 5% of the material exceeds 6". In a few pockets there are 20%-25% boulder-size stones.
2	1969	1.5-8.5	0-1.5	Yes	72.1	61.7	40.8	19.0	8.0	2½	20.0%	Gran. Borrow (Grav.)	Test #2 was dug on face of pit, 90' from the east end. From 1.5'-5.5' is gravelly sand; from 5.5'-8.5' is a very stony gravel with little sand and much apparent silty clay. The bottom 2.5' of the face is slough. North and west of the pit is a narrow swamp beyond which is bedrock.	

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 59

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	3	1969	1.5-9.5	0-1.5	No	60.1	54.9	44.9	28.0	13.0	1½	30.3%	---	Test #3 was dug on the pasture knoll, 100' south of the pit. The material is a bouldery gravel, the minus 6-inch portion also being quite coarse. It is dirty, and has excess passing the #270 sieve for Item 105, Granular Borrow.
38	1	1969	1-6	0-1	Yes	87.1	63.9	36.4	7.0	3.0	3½	18.7%	Gravel	Owner: Warren Ketcham. This area is a small pit in which material is exposed that probably is similar to that of a 3-acre field to the south. The pit is small and overgrown. It is located about 500' east of Vt. Rte. 100. An access road would have to be constructed. The pit is 80' long and has faces 4'-7' high. One handsample was taken. The material is mainly a fine gravel with an occasional cobble. At 5.5'-6' a bed of pebbles was hit. The ground surface 8' below the level of the pit floor, north of the pit, was wet. The field is not used. It is growing to hay and weeds. The area is part of an outwash terrace mapped by D. P. Stewart on the east side of the Mad River Valley.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 60

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
39	1	1969	1.5-9	0-1.5	Yes	100	98.1	90.6	34.4	9.0 8.2*	1½	---	Gran. Borrow (Sand)	Owner: Howard Munn. This area is a small pit and vicinity west of Vt. Rte. 100, north of Town Highway No. 30. The pit is located in the west side of a flat meadow mapped as outwash. Test #1 was dug 305' north of the town highway at the edge of the pit. About 1.5' of gravel overlies beds of silty sand and medium sand with pebbles.
	2	1969	0.5-4.5	0-0.5	Yes	69.2	52.9	37.6	6.0	2.0	3	22.0%	Gravel	Test #2 was handsampled on low north face of 75-x 70-foot pit. The material is a hard-packed fine gravel with a few tabular stones. It bottoms in material similar to Test #1.
	3	1969	1.5-8	0-1.5	No	64.1	51.9	35.3	7.0	1.5	3½	22.9%	Gravel	Test #3 was dug at the west edge of the meadow atop its west slope. The test is 220' north of the pit and 130' from the meadow's northwest corner. The material is a good-looking gravel with cobbles. It bottoms in bedrock at 8'. Probably the west 150' of the meadow in the pit's vicinity would be an available source of Item 201.
40	1	1966	3.5-12.5	0-3.5	No	59.0	37.5	19.4	8.0	4.0	1½	24.2%	Gravel	Owner: E. Pratt.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 61

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1966	3-11.5	0-3	No	66.3	48.0	25.7	4.0	1.5	1	25.2%	Gran. Borrow (Grav.)	(formerly Mervin Kingsbury). Area is now a pit. When sampled in 1966 it was a meadow. It is located below the west side of Vt. Rte. 100, and south of and below Town Highway No. 30. The meadow is below the outwash terrace and is probably underlain by fluvial gravel.
	3	1966	4.5-11.5	0-4.5	No	60.2	44.5	31.0	8.0	2.5	1	21.2%	Gravel	Test #1 - #4 were dug in the south half of the meadow.
	4	1966	5-12.5	0-5	No	61.1	43.4	25.1	4.0	1.0	1	23.0%	Gravel	Test #3 had a gravel bottom; the other tests bottomed in fine sand which was wet in Tests #1 and #2. The overburden varied from 3' - 5'. Its thickness was substantiated when the pit was opened in 1968.
	5	1966	2.5-12	0-2.5	No	59.5	35.5	18.3	7.0	2.5	1	20.4%	Gravel	Tests #5 - #8 were dug in the north part of the meadow.
	6	1966	2.5-11	0-2.5	No	54.9	41.3	24.0	6.0	2.3	1	23.2%	Gravel	All tests had gravel bottoms.
	7	1966	3-11	0-3	No	77.3	52.8	33.7	2.0	1.0	1	19.7%	Gravel	The most northerly tests (#7 and #8) had thick overburden.
	8	1966	5-10.5	0-5	No	66.3	39.7	22.0	18.0	7.5	1½	24.0%	Gran. Borrow (Grav.)	
	9	1968	---	--	Yes	92.8	67.7	49.3	2.0	1.0	1½	18.2%	Gravel	Test #9 was sampled at an unnoted location in the pit opened in 1968. It was sampled by the resident engineer. On the whole, the

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 62

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				material in this area is a very stony, quite clean gravel.
41	1	1969	1.5-7	0-1.5	Yes	72.4	58.9	42.8	9.0	2.5	3½	22.0%	Gravel	Owner: David Slingluff (formerly Cass-Warner). This is a large, pretty well depleted pit below the west side of Vermont Route 100, and south of Map Ident. No. 40. Access is north from Rte. 100 past The 'Dormez Vous' Ski Dorm. In the pit there are a few low faces that expose the material in small separated areas. There are many 'islands' or areas of trees, strippings, boulders, etc. Test #1 was dug at the east side of the pit about 120' from its south end. The test is near the middle of an area of gravel 80' E-W x 120' N-S which is exposed on a 4-foot face at the west side. The material is a cobbly and bouldery gravel with an estimated 10% exceeding 6". It bottoms in clay and water at 7'. Test #2 was dug 195' northeast of Test #1 on east side of pit, 50' east of pit road.
	2	1969	0.5-7	0-0.5	Yes	---	---	---	---	---	---	---	---	

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 63

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	3	1969	1-8	0-1	Yes	62.6	42.0	25.0	7.0	2.5	2	18.6%	Gravel	The test is 10' east of a 5-foot gravel exposure, and probably is representative of a gravelly area 180' NE-SW x 50' NW-SE. The material sampled was a fair-looking gravel with less than 5% stones over 6". The sample was lost in transit. Clay occurs at 7'. Test #3 was dug about 200' north of Test #2 in floor of pit above a small lobe or lower level. The test is 115' from the steep bank below Rte. 100 at the east side of the pit, and is 230' from the north property line. The material is a quite cobbly gravel with some tabular stones. It has a few boulders. An iron oxide-stained layer occurs at 6'. Water entered at 6.5'. From 6.5' to at least 8' is exclusively stones. A buried log or post was found at 7'.
	4	1969	7-16	0-7	Yes	67.3	47.2	32.5	37.0	9.0	2.0	20.8%	Gran. Borrow (Grav.)	Test #4 was dug on face of narrow ridge of material at west side of pit, 370' from its south end. The test was continued in floor for 6'. The top 7' of the ridge is stony silt and silty sand.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 64

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														From 7'-16' is a quite cobbly gravel. Reddish gravel occurs at the floor level. Water entered at 3' below the floor. Sandy silt occurs at 6' below the floor. This test is 370' from the south end of the pit.
42	1	1969	0.5-11	0-0.5	Yes	59.6	45.7	31.2	3.0	1.0	1½	---	Gran. Borrow (Grav.)	Owner: David Slingluff (formerly Alasdair Munro). This area is a narrow, long meadow with a pit near its south end. The meadow is located on the west side of the Mad River, south of Town Highway No. 29. It is probably an area of fluvial gravel. The pit was about 225' long x 130' wide before it was smoothed over. Water occurred in the floor. The meadow is a maximum of 225' east-west. In places along its west side at the foot of a wooded slope (the valley wall) it was wet. Test #1 was dug atop west face of pit. The material is a very cobbly, clean gravel with about 10% exceeding 6", and with many tabular stones. The material is iron oxide-stained and was wet below 11'.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 65

Tap Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1969	N O T S A M P L E D											Test #2 was dug in floor near the south end of the old pit. About 3' of silt overlies a cobbly, very stony gravel and the water table. Floor is 8'-9' below top of Test #1. The gravel was not sampled because the water would wash out all fines and result in an unrepresentative sample.
	3A	1969	2-6	0-2	No	100	100	100	38.0	11.0*	1½	---	---	Test hole #3 was dug 580' north of Test #1, and 160' south of the town highway. From 2'-6' is very fine or silty sand, sampled as Test #3A.
	3B	1969	6-10.5	---	No	51.5	36.0	24.8	13.0	5.0	1½	13.6%	Gravel	Test #3B was sampled below 6' in a cobbly, quite stony gravel with many tabular stones. The test bottomed in cobbly gravel. Material from 4.5'-6' in this test could have been mixed with the cobbly gravel section without failing it for Item 201. There would be, however, 4.5' of overburden on the gravel.
43	1	1969	0-7.5	---	Yes	100	100	81.0	16.0	4.0 3.2*	1	---	Sand	Owner: Robert Rose. This is an abandoned pit on the north side of Town Highway No. 31 in a feature included within a delta deposit as mapped by D. P.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 66

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
9														Stewart. Originally the feature was a long, narrow ridge, standing higher than the road and parallel to it. The upper, east pit is 245' long x 90' wide and there is little material remaining at its sides. An older, lower pit to the west has a west extension of perhaps 75', and an east extension into the floor of the upper pit. The lower pit is used as a dump and has grown to trees and brush. The west end of the upper pit has been filled with stumps.
	2	1969	1-8.5	0-1	Yes	93.6	77.7	61.0	7.0	2.0	2½	22.7%	Gran. Borrow (Grav.)	Test #1 was a handsample of a 4-foot face 50' from the west end of the upper pit. The test was continued 3.5' into the floor. Fine and coarse sands, both with a few pebbles occur in the top 4'. Very pebbly sand, bottoming in fine sand occurs from 4'-7.5'. A few cobbles and many pebbles show in places around the pit, but no doubt the original material was not stony enough for specification gravel. Test #2 was a handsample of west face of lower pit.

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 67

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														Since the slope of the ridge is steeper for 75' west of the pit than is the slope of the old ground along the upper pit, it would seem that the granular material is limited in its west extension. The sample was of fine gravel with a few cobbles, tabular stones, and interbeds of pebbly sand. Overall, the sample had too few stones for Item 201. The bottom 3.5' of the face had excessive slough to dig into. Permission was not obtained to take backhoe samples of the pit. The owner stated he was interested in the material for his own use.
44	1	1969	1-5	0-1	Yes	100	100	96.9	20.3	5.0 4.8*	1½	---	Gran. Borrow	Owner: Wendell Fulsum Area is a small pit in a small, low knoll in a pasture above the east side of State Aid Highway No. 1, about 0.3 mile north of the Warren Town Line. A 4.5-foot face was sampled. The material is fine sand with a few pebbles that occur at 2.5'. Very fine sand occurs from 4' to below depth of test. The knoll is no more than 100' in its largest

*Percentage of Total Sample

TABLE I

WAITSFIELD GRANULAR DATA SHEET NO. 68

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				
														dimension, and stands no more that 12' above the gentle, westerly slope of the pasture. Possibly the deposit is ice-contact in origin, but of a local nature. The owner has used the material for fill. It would not be available for other uses.

TABLE I
Supplement

WAITSFIELD PROPERTY OWNERS - GRANULAR

	Map Ident. No.
Baird, Andrew	33
Bisbee, Dan	2, 3
Brightenback, George	25
Bullwinkel, Richard	36
Carpenter, George	1
Estey, Vaughn SOLD TO QUENTIN PEARSON	5, 6, 7, 8, 9, 10, 11
Folsum, Wendell	44
Hartshorn, Paul	12
Joslin, Ralph	28, 29
Ketcham, Warren	30
Lavanway, Albert Jr.	16
Lee, Johnson	34, 35
Moriarty, Joseph	27
Munn, Howard	39
Neill, Elwin	13
Neill, Howard	37
Palmer, Everett	30, 31, 32
Pratt, E.	40
Rose, Robert	43
Schreiner, Robert	26
Slingluff, David	41, 42
Smith, Harry	20, 21
Tucker, Ernest	23, 24
Tremblay, J. Edgar	22
Unknown	18
Viens, Mrs. Gertrude	4
Waitsfield, Town of	17, 19
Wallis, Mrs. E. S.	14, 15

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)

WAITSFIELD

SCALE 1:31,250

CONTOUR INTERVAL 20 FEET

1970

GRANULAR MATERIALS MAP

BY

VERMONT DEPARTMENT OF HIGHWAYS

IN COOPERATION WITH

U.S. BUREAU OF PUBLIC ROADS

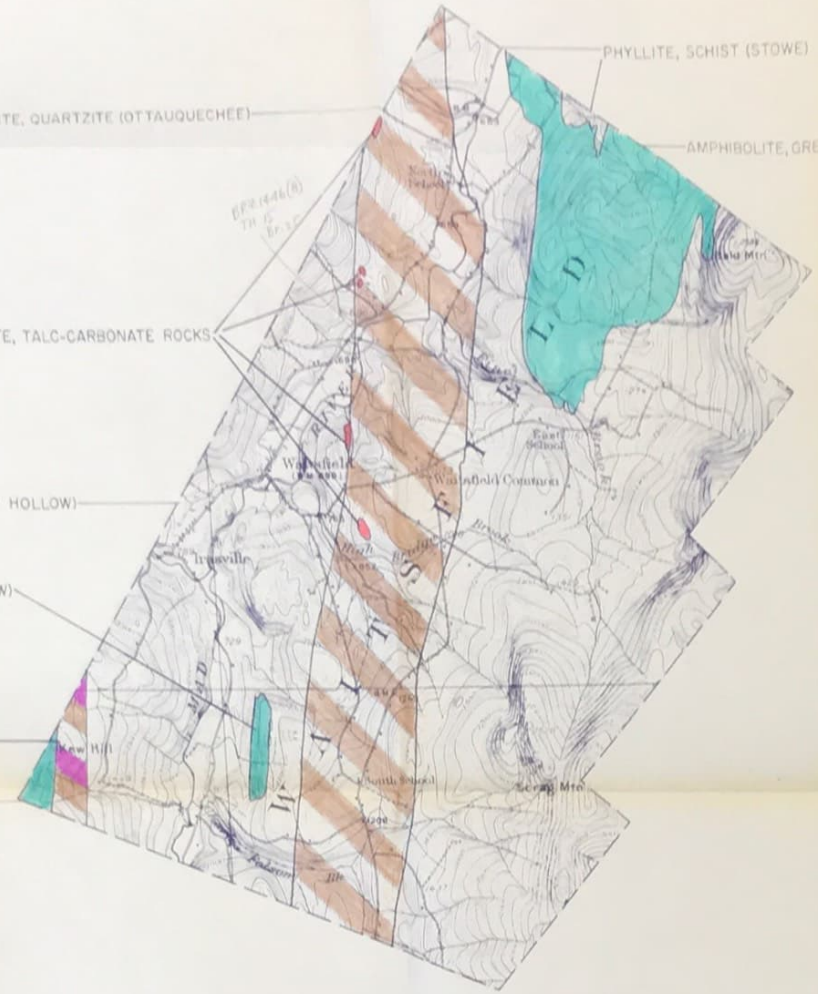
NOTE BASED ON U.S.G.S. TOPOGRAPHIC MAPS

WASHINGTON COUNTY VT. HWY. DISTRICT NO. 6

REVISIONS

DATE						
BY						

PLATE 1 GRANULAR



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 rock)
- PERIDOTITE, PYROXENITE, SERPENTINITE (ultra-basic igneous rocks)
- GNEISS
- QUARTZITE
- DOLOMITE
- MARBLE, LIMESTONE
- SCHISTS, SLATES, PHYLLITES, SHALES, CONGLOMERATES
- 3 IDENTIFICATION NUMBER (refer to data sheets)

WAITSFIELD

SCALE 1:31,250

CONTOUR INTERVAL 20 FEET

1970

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

PLATE II ROCK

WASHINGTON COUNTY VT. HWY. DISTRICT NO. 6

REVISIONS

DATE						
BY						