

**SURVEY OF HIGHWAY CONSTRUCTION MATERIALS  
IN THE TOWN OF SHAFTSBURY, BENNINGTON COUNTY, VERMONT**

**prepared by**

**Engineering Geology Section, Materials Division  
Vermont Department of Highways**

**in cooperation with**

**United States Department of Commerce  
Bureau of Public Roads**

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### Acknowledgments

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

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

### History

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

on material sources available beforehand. Prior knowledge of locations of suitable material is an important factor in planning future highways.

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

#### Inclosures

Included in this folder are two surface-geology maps, one defining the location of tests conducted on bedrock sources, the other defining the location of tests conducted on granular materials. These maps are derived from 15-minute or 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 being conducted by Professor D.P. Stewart of Miami University, Oxford, Ohio, who has been mapping the glacial features of the State of Vermont during the summer months since

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

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

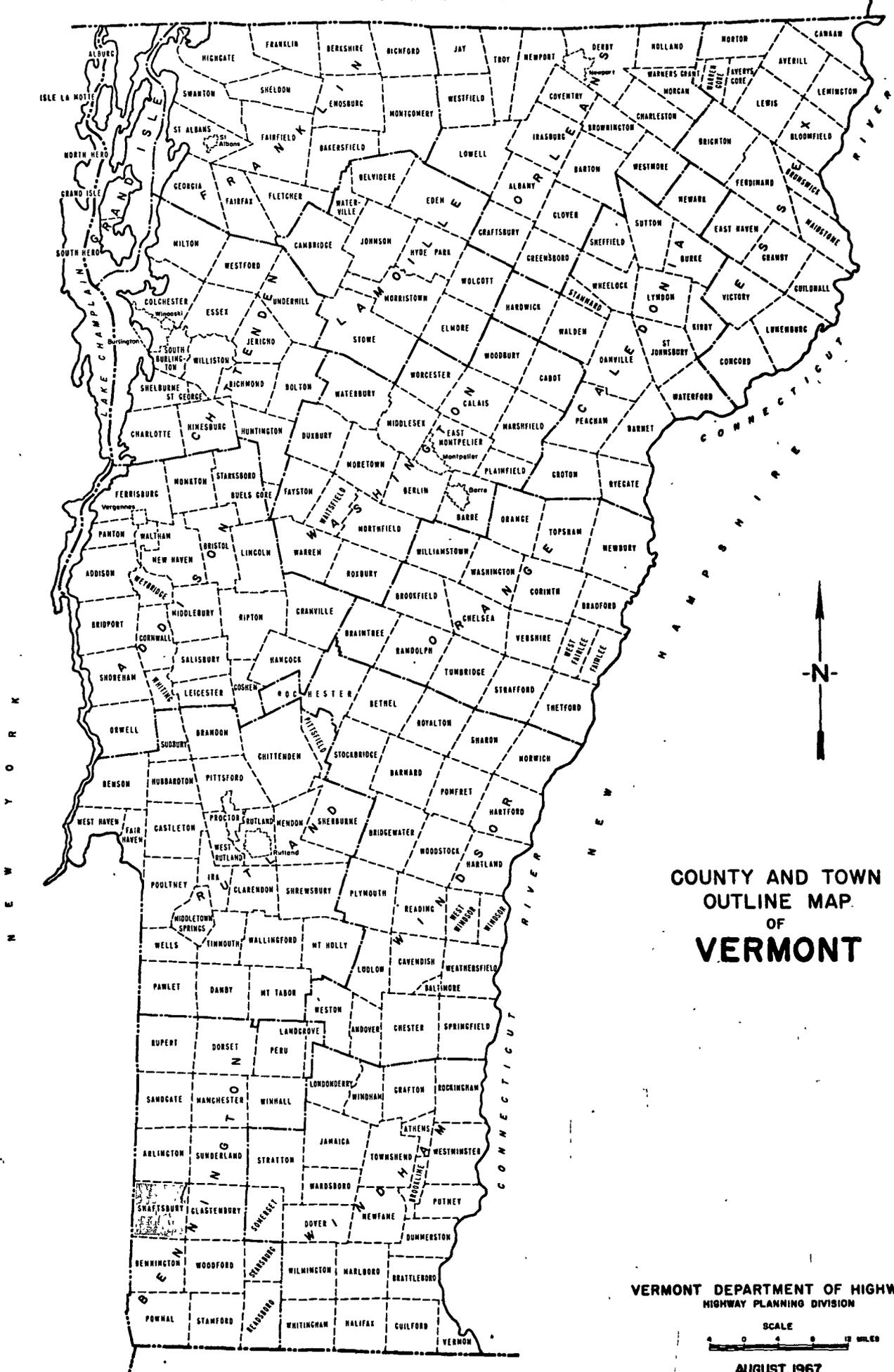
Work sheets contain more detailed information on each test and a detailed sketch of each Identification Number Area. The work sheets and laboratory reports are on file in the office headquarters of this Project.

## LOCATION

The town of Shaftsbury is located in Bennington County near the southwest corner of the State. The town is bounded on the west by New York State, on the north by Arlington, on the east by Glastenbury, and on the south by Bennington. (See County and Town Outline Map of Vermont on the following page.)

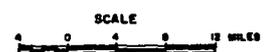
Shaftsbury extends from the western flank of the Green Mountains across the Vermont Valley into the Taconic Range. The Vermont Valley is comprised chiefly of metamorphosed carbonate rocks that were less resistant to erosion than the predominantly siliceous or argillaceous metamorphic rocks of the flanking mountains.

Elevations vary from less than 520 feet in the Walloomsac River valley at the New York line to 2,420 feet on West Mountain near the north-central boundary of the town. Drainage is mainly into the Walloomsac River either directly or via its White Creek tributary, but a minor portion of the town drains northward into the Batten Kill.



COUNTY AND TOWN  
 OUTLINE MAP  
 OF  
**VERMONT**

VERMONT DEPARTMENT OF HIGHWAYS  
 HIGHWAY PLANNING DIVISION



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 obsolescence 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 comprise the greatest portion of the formation within the town of Shaftsbury. Minor amounts of sedimentary rocks, particularly limestone and sandstone, also occur within the town.

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

In general, bedrock in the town of Shaftsbury suitable for Item 204, Sub-base of Crushed Rock, rarely occurs as a continuous surface exposure 150 feet or more in length. Most bedrock is covered by a mantle of granular material and vegetation that limits sampling to sporadic outcrops within the linearly measured interval. However, on several prominences in the southeast corner of the town (namely Bucks Cobble, Hale Mountain, and Harrington Cobble) there are fairly continuous surface exposures for the required 150 feet. These localities, within the Shelburne Formation and the Clarendon Springs and Winooski dolomites, are excellent future sources of material. (See Map Identification Numbers 2, 3, 4, and 5 for locations.) Additionally, in the southwest corner of the town, the Bascom Formation was tested in an open field where outcrops are sporadic at Map Identification Number 6 and at the sites of two old marble quarries. (See Map Identification Numbers 7 and 8.)

## 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 (AASHTO T-4).

### Discussion of Sand and Gravel Deposits

Available materials within the town of Shaftsbury are largely restricted to elevations below the 1,200 foot level. In general, usable materials for Sub-base of Gravel, Item 201, Sub-base of Sand, Item 202, and Granular Borrow, Item 105 are mostly the products of glaciofluvial deposition. Much lesser amounts may be the results of glaciolacustrine deposition.

According to Dr. D. P. Stewart, glaciofluvial deposition in Shaftsbury took the forms of eskers, fluvial gravels, kames, kame moraines, a kame terrace, and outwash that were emplaced adjacent to Paran Creek, Shaftsbury Hollow, and Furnace Brook. The results of this inventory generally substantiated his conclusions wherever undisturbed material was tested. In places, particularly on William E. Daily, Inc. holdings east of the Rutland Railroad, extensive prior excavations have made some of the original features difficult to evaluate. Stewart determined the glaciolacustrine deposition to be lake sand. It was deposited mainly in the vicinity of Shaftsbury Village, but negligibly small remnants were located elsewhere.

This survey found that the best potential source of Sub-base of Gravel, Item 201 was outwash on the Harry Bahan farm, namely at Map Identification Numbers 35, 36, 37, and 39. Tests taken block out at least 90,000 cubic yards in ten acres of field south of Town Highway No. 30. It should be noted that other tests in this outwash terrace between U. S. Route 7 and Town Highway No. 8 largely failed the requirements for Sub-base of Gravel, Item 201 (Map Identification Numbers 32, 33, 34, 38, 40, 45, 46, 47, and 48). Field reconnaissance as well as information regarding previous negative tests by the Rutland Railroad precluded testing an additional outwash terrace southwest of South Shaftsbury Village.

Probably the second best source of Sub-base of Gravel, Item 201 is within the "Waite's" holdings at the south end of an extensive kame moraine east of

the Rutland Railroad. Map Identification Number 43 locates between 8 and 12 yards of gravel thickness in a terrace remnant and adjacent pit which would be an excellent source. However, complaints by neighboring landowners that exploitation was ruining the scenic values of their properties have hindered development by William E. Daily, Inc.

It would appear that the north end of the same kame moraine is largely not suitable for Sub-base of Gravel, Item 201 because excessive fractions finer than the No. 100 mesh sieve were found in most of the samples tested. The areas involved (Map Identification Numbers 22, 25, 26, and 29) within the "Green's Pits" holdings of William E. Daily, Inc. are good sources for Granular Borrow, Item 105. They are overlain by eskers which will be discussed later in this report.

The south end of a large kame moraine across the Rutland Railroad from "Green's Pits" and "Waite's" holdings was tested at Map Identification Number 31. It appears to be a poor source of material as it fails to meet the specifications for Granular Borrow, Item 105. Field reconnaissance of the same feature was done a mile to the north on property owned by William H. Morse, Bennington contractor. There, a largely wooded area east of Shaftsbury Center, it was determined that heavy overlays of cobbles and boulders in addition to inaccessibility made backhoe testing impracticable. Similar conditions of another large moraine that is situated along U. S. Route 7 near the Arlington Town Line made testing unwarranted although two pits proved to have a small amount of material usable for Granular Borrow, Item 105 (Map Identification Numbers 8 and 9).

This survey did not obtain permission to test a kame moraine east of Map Identification Number 6 that has been withheld from sampling by E. F. Jones because of its real estate potential. Mr. Jones allowed one hand sample in a pit at Map Identification Number 6 which is located in an esker

east of his house, but he denied permission for any sampling with the backhoe.

Eskers overlying kame moraine in the "Green Pits" holdings have material comparable to that of the kame moraine (Map Identification Numbers 23, 24, 27, and 28). Northward continuation of these eskers was tested at Map Identification Numbers 10, 11, 12, and 13. All of these areas are of small extent and only Number 13 would be a likely source of Sub-base of Gravel, Item 201. An isolated esker at Map Identification Number 53 would appear to be a good potential source of Sub-base of Sand, Item 202. At the location a large pit is being systematically developed eastward from State Aid Highway No. 5.

Another good source of Sub-base of Sand, Item 202, would be the large pit at Map Identification Number 44, at the south end of "Waite's" holdings. Development there, however, depends upon the effect it has on scenic views from neighboring farms.

Property belonging to William Hall west of U. S. Route 7 is within a feature designated as a kame terrace by Dr. Stewart. Materials meet the requirements for Sub-base of Gravel, Item 201, but the feature appears to be very limited in extent (Map Identification Number 15).

Isolated kames were tested at Map Identification Numbers 1, 5, 50, 51, and 52. About one-third of the tests proved to be of material suitable for Sub-base of Gravel, Item 201, one-third for Granular Borrow, Item 105, and the remainder failed because of excessive fractions that passed the Number 270 mesh sieve.

Also for consideration are the fluvial gravels that were so designated by Stewart in Shaftsbury Hollow. The slate gravels sampled there meet the gradational requirements for Sub-base of Gravel, Item 201, but are marginal with regard to abrasion requirements for this item.

Only the south end of the principal lacustrine feature was tested. On the Charles Myers farm there is a fair to poor source of Sub-base of Sand, Item 202. Most of the tests for this item failed because of excessive fractions finer than the Number 100 mesh sieve. (Map Identification Numbers 16, 17, and 18.) However, they would be a good source of Granular Borrow, Item 105. Map Identification Number 14 represents an area unacceptable for Granular Borrow, Item 105.

## SUMMARY OF ROCK FORMATIONS IN THE TOWN OF SHAFTSBURY

Hortonville Formation - Black, carbonaceous, and pyritic slate and phyllite, locally sandy; brown-weathered limy beds are common near base.

Bascom Formation - Interbedded dolomite, limestone or marble, calcareous sandstone, quartzite, and limestone breccia; irregular dolomitic layers, thin sandy laminae, and slaty or phyllitic partings characterize limestone and marble of lower, middle and upper parts of the Bascom, respectively; south of West Rutland it includes some of the Chipman Formation.

Shelburne Formation - Chiefly a white marble or gray limestone characterized by raised reticulate lines of gray dolomite on the weathered surface, includes Columbian marble of the marble quarries.

Clarendon Springs Dolomite - Fairly uniform, massive, smooth-weathered gray dolomite characterized by numerous geodes and knots of white quartz; quartz sandstone and irregular masses of chert are near the top.

Winooski Dolomite - Buff-weathered, pink, buff, and gray dolomite; beds 4 inches to 1 foot thick separated by thin, protruding, red, pink, green, and black siliceous partings.

Monkton Quartzite - Distinctively red quartzite interbedded with lesser buff and white quartzite and relatively thick sections of dolomite like that of the Winooski; the quartzites thin to the east, and they become gray and phyllitic to the east and south.

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

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

St. Catherine Formation - Purple, gray-green, and variegated slate and phyllite containing minor interbeds of white to green quartzite; locally albitic.

Breeze Formation - Dark gray to black phyllite with beds of blue-gray marble, dark gray dolomite, sandy dolomite, and dolomitic sandstone, in upper part; beds of massive quartzite as much as 20 feet thick occur locally and in places contain pebbles of blue quartz. Phyllites are locally highly albitic.

## GLOSSARY OF SELECTED GEOLOGIC TERMS

Argillaceous - Containing or consisting of clay. Commonly used to indicate the presence of clay as argillaceous sandstone.

Carbonate Rock - Products of a product of chemical decomposition by which carbon dioxide contained in water combined with the oxides of calcium, magnesium, potassium, sodium, and iron. As a result of this union, carbonates or bicarbonates of these metals are produced, including dolomite, siderite, calcite, and other less plentiful minerals.

Dolomite - As used in this report it applies to rocks approximating the mineral dolomite in composition or consisting predominantly of the mineral dolomite. Mineralogically, dolomite is a mineral of definite chemical composition,  $\text{CaMg}(\text{CO}_3)_2$ : carbon dioxide 57.7%, lime 30.4%, and magnesia 21.9%.

Esker - A relatively long, narrow, winding ridge of mixed sand and gravel. In longitudinal profile their crests are seen to be sinuous. They are considered to have been deposited by streams of meltwater flowing through crevasses and tunnels in stagnant ice sheets.

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

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

Kame - A conical hill of generally poorly stratified drift deposited in contact with glacial ice by streams flowing in or on the ice.

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

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

Limestone - A bedded sedimentary deposit consisting chiefly of calcium carbonate. The most important and widely distributed of the carbonate rocks. The percentage of calcium carbonate ranges from 40% to more than 98%. Common impurities are clay and sand.

Marble - A soft, white rock being the metamorphic form of limestone in which the calcium carbonate (calcite) is recrystallized and the calcite crystals are overgrown and interlocked with additional calcite. Commercially it is a trade name applied to any carbonate rock of good color and texture and hard enough to take a polish.

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

Outwash - Stratified drift that is stream built beyond the glacier; laid down by meltwater streams issuing from the face of the glacial ice.

Phyllite - A fine-grained foliated metamorphic rock intermediate between the mica-schists and slates, into which it may grade. The cleavage is made possible by the development of a large amount of the potash mica, sericite, which gives the rock a distinctive silvery appearance. Between the cleavage planes minerals other than mica usually predominate and garnet and pyrite may occur in visible crystals. Phyllite is usually light in color, but various darker shades, even black, are found. Practically all phyllites are derived from fine-grained sedimentary rocks by mechanical deformation and recrystallization. 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.

Quartzite - A firm, compact rock composed of grains of quartz so firmly united that fracture takes place across the grains instead of around them. A metamorphosed sandstone.

Sandstone - A consolidated rock composed of sand grains that are visible to the unaided eye. Sandstone fractures around the grains rather than through them.

Sedimentary Rocks - Rocks composed of sediment; mechanical, chemical, or organic. They are formed through the agency of water, wind, glacial ice, or organisms and are deposited at the surface of the earth at ordinary temperatures. The materials from which they are made must originally have come from the disintegration and decomposition of older rocks, chiefly igneous.

Siliceous - Containing or pertaining to silica (silicon dioxide,  $\text{SiO}_2$ ) or partaking of its nature.

Slate - A homogeneous metamorphic rock, so fine-grained that no mineral grains can be seen. Slate splits with a foliation so perfect that it yields slabs having plane smooth surfaces.

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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 ( $3\frac{1}{2}$ ) as determined by the colorimetric test described in AASHTO 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 AASHTO 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	100
	Item 205-A	25-50
	Fine-Graded	95-100
	Item 205-B	30-60

"At least thirty percent (30%) by weight of the stone content of the crushed gravel, that is, the material retained on the No. 4 screen, shall have a minimum of one (1) fractured face as determined by actual count from the sample submitted to the laboratory.

"The percent of wear shall not be more than twenty (20) when tested by laboratory methods using Method AASHTO T-4 or more than thirty-five when tested by AASHTO 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 AASHTO T-27, shall meet the grading requirements set up in the following table:

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

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

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
1	1	1968	1.5-14	0-1.5	Yes	76.7	67.0	48.2	3.0	1.0	1½	22.8%	Gravel	Owner: Ken Skidmore. Area consists of a pit east of Town Highway No. 10 and its possible northward extension through woods and an open field. Test #1 was in upper 26' of north face near east side of pit. Material is: 0-1.5', sod; 1.5'-14', slate gravel that meets the specifications for Items 201 and 105.
	2	1968	14-26	0-1.5	Yes	75.6	51.3	38.4	4.0	2.0	1	30.2%	Gran. Borrow (Grav.)	Test #2 was in lower face below Test #1. From 14'-26' material is slate gravel that meets requirements for Item 105 but fails to pass abrasion specifications for Item 201.
	3	1968	0-7	---	Yes	81.6	60.3	36.1	7.0	4.0	1	27.6%	Gran. Borrow (Grav.)	Test #3 was in floor of pit 35' southwest of Test #2. Material is 0-7', slate gravel that is acceptable for Item 105, but fails to pass abrasion specifications for Item 201.
	4	1968	3-10	0-3	No	80.0	71.1	48.6	7.0	4.0	1½	24.0%	Gravel	Water was encountered at 7'. Test #4 was in the woods about 100' north-northwest of pit. Material is: 0-3', sod and brown silt; 3'-10', slate gravel with 10% +4" stones that is acceptable for Items 201 and 105.
	5	1968	2.5-8.5	0-2.5	No	70.7	59.2	36.1	7.0	4.0	2	29.2%	Gran. Borrow (Grav.)	Test #5 was in woods near south end of field about 200' northeast of Test #4. Material is: 0-2.5', sod and silt; 2.5'-

\*Percentage of Total Sample

TABLE I

SHAFTSBURY 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-4-35	Passes VHD Spec.	Remarks		
						1½"	5/8"	#4	#100	#270						
	6	1968	2-8	0-2	No	87.8	68.7	43.2	4.0	2.0	1½	---	Gran. Borrow (Grav.)	8.5', slate gravel with 10% +4" stones that meets the gradational requirements for Items 105 and 201, but fails to meet abrasion specifications for the latter. Test #6 was in field 185' north of woods opposite Test #5. Material is: 0-2', sod and turned soil; 2'-8', slate gravel that meets gradational requirements for Items 105 and 201, but fails to meet abrasion specifications for the latter because there was insufficient proper-size stone for "per cent of wear" test.		
	7	1968	0-3	3-7.5	No	89.1	78.0	48.1	4.0	2.0	2	---	Gran. Borrow (Grav.)	Test #7 was in field 200' north of Test #6. Material is: 0-1', sod; 1'-3', brown silt and stones; 3'-7.5', slaty fine gravel that meets gradational requirements for Items 105 and 201, but fails to meet abrasion requirements for the latter because there was insufficient proper-size stone for "per cent of wear" test.		
2	1	1968	2-3.5	0-2	No	N	O	T	S	A	M	P	L	E	D	Owner: Ken Skidmore. Area consists of a hillside about 0.3 mile east of Skidmore house on Town Highway No. 10. Test #1 was about 35' north of rock wall and tree near break in middle of slope.

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 3

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Material is: 0-2', sod; 2'-3.5', clay and small stones that is probably glacial till. It was not sampled.
3	1	1968	1.5-7.5	0-1.5	No	66.6	53.0	31.1	7.0	5.0	1½	24.4%	Gravel	Owner: William Westfall. Area consists of a terrace west of brook and northwest of Westfall house on Town Highway No. 10. Test #1 was near north end of terrace where it impinges on hillside to the west. Material is: 0-1.5', sod and stones; 1.5'-3.5', medium gravel with semi-rounded stones; 3.5'-7.5', coarse gravel with about 10% tabular thin cobbles. It meets requirements for Items 201 and 105.
	2	1968	1-4	0-1	No	78.4	65.7	37.1	4.0	1.5	1½	28.7%	Gran. Borrow (Grav.)	Test #2 was in level below terrace about 70' N35°E of Test #1. Material is: 0-1', sod and stones; 1'-4', medium gravel with about 10% tabular thin cobbles that meets the gradational requirements for Items 105 and 201, but fails the abrasion specifications for the latter. Water table was encountered at 3.5'.
4	1	1968	1-7	0-1	No	83.4	65.1	39.6	12.0	5.0	2	23.3%	Gravel	Owner: Raymond Favreau. Area is a field between Town Highway No. 9 and house trailer that is Favreau's residence. Additional tests would be warranted here, but owner

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 4

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks		
						1½"	5/8"	#4	#100	#270						
													denied permission. Test #1 was about 110' S20°E of a shed on the north-east edge of the field. Material is: 0-1', sod and stones; 1'-7', slaty coarse gravel with 10% tabular cobbles; bottoms in fine slate sand. Gravel stratum is acceptable for Items 201 and 105.			
5	1A	1968	1.5-12.5	0-1.5	Yes	81.9	76.4	44.2	13.0	6.0	1½	21.8%	Gran. Borrow (Grav.)	Owner: Horace M. Galusha. Area consists of a pit on hillside in woods west of Town Highway No. 54 and its possible northwestward expansion. Test #1A was from the upper 25' west face. Material is: 0-1.5', dirty gravel with sod; 1.5'-8.5', medium coarse gravel; 8.5'-12.5', fine gravel. This sample was acceptable for Item 105, but failed to meet grading requirements for Item 201 because of an excess passing the #270 mesh sieve.		
	1B	1968	12.5-25	0-1.5	Yes	86.1	67.7	41.9	8.0	4.0	1	23.4%	Gravel	Test #1B was from lower 25' west face. Material is: 12.5'-25', fine-medium gravel that is acceptable for Items 201 and 105. Floor of this pit is clay.		
	2	1968	2.5-8	0-2.5	No	N	O	T	S	A	M	P	L	E	D	Test #2 was in the woods at point 250' northwest of Test #1A. Material is: 0-2.5', sod and silt; 2.5'-8', sand, small stones and clay. This sample bottomed in clay and was not

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 5

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	3	1968	3-8	0-3	No	100	100	48.5	5.0	3.0 2.0*	1	---	Gran. Borrow (Grav.)	tested. Test #3 was in a clearing in the woods about 650' north-west of pit. It was located just west of a recently used lumber skidway. Material is: 0-3', silt and slate cobbles; 3'-8', silty slate gravel. This sample was of a rejected gravel that meets the specifications for Item 105.
6	1	1968	1.5-11.5	0-1.5	Yes	79.9	62.8	33.9	5.0	1.0	1½	26.4%	Gran. Borrow (Grav.)	Owner: E. F. Jones. Area is a pit on hillside southeast of the junction of Town Highway No. 54 with Town Highway No. 64. Test #1 was in upper 22' north face. Material is: 0-1.5', sod; 1.5'-11.5', slaty fine gravel that meets the gradational requirements for Items 105 and 201, but barely fails to meet the abrasion requirements for the latter. Subsequent to the above test which was taken by hand sampling, the owner denied permission for further testing.
7	1	1968	1-9.5	0-1	Yes	92.4	74.5	52.7	10.0	6.0	2	23.4%	Gran. Borrow (Grav.)	Owner: Merritt S. Hewitt. Area is a grown in pit behind house north of the intersection of Town Highway No. 65 with Vermont State Highway No. 67. Test #1 was in upper face. Material is 0-1', sod; 1-9.5',

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 6

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks		
						1 1/2"	5/8"	#4	#100	#270						
	2	1968	0.5-11.5	0-0.5	Yes	N	O	T	S	A	M	P	L	E	D	<p>dirty slaty fine gravel that is finer toward bottom. It meets the gradational requirements for Item 105, but barely fails the specifications for Item 201 because of an excess passing the No. 270 mesh sieve.</p> <p>Test #2 was on leveled terrace about 150' east of Test #1. Material is: 0-0.5', stony clay; 0.5'-7.5', layered yellow and blue clays with water table encountered at 7.5'; 7.5'-11.5', gun-metal blue clay. Material was not tested.</p> <p>Because of the large clay deposit in the central part of the terrace, this area probably does not have enough granular material to warrant exploitation.</p>
8	1	1968	1.5-10	0-1.5	Yes	49.8	41.9	30.5	6.0	3.0	1	9.4%	Gravel	<p>Owner: Thurston Hulet.</p> <p>Area is a pit on the east side of a wooded ridge north of Town Highway No. 15.</p> <p>Test #1 was in upper 15' face overlooking a pond to the east. Material is: 0-1.5', sod and dirty sand; 1.5'-10', clean cobbly gravel that meets requirements for Items 201 and 105.</p>		
	2	1968	10-15	0-1.5	Yes	82.3	78.3	71.5	8.0	3.0	1 1/2	---	Gran. Borrow (Sand)	<p>Test #2 was in lower face. Material is: 10'-12', clean cobbly gravel; 12'-13', very</p>		

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 7

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														coarse sand; 13'-15', medium clean sand. It meets requirements for Item 105, but there was insufficient stone to meet gradational requirements for Item 201.
9	1A	1968	1-7.5	0-1	Yes	66.1	52.7	38.7	35.0	10.0	1½	5.3%	Gran. Borrow (Grav.)	<p>Owner: F. A. Rohm.</p> <p>Area consists of three small knolls with pit in the easternmost one located north of Town Highway No. 15.</p> <p>Test #1A was in upper 16' pit face at north end of pit. Material is: 0-1', overburden; 1'-7.5', stony fine sand over gravel that is acceptable for Item 105, but fails to meet gradational requirements for Item 201 because of excesses passing the No. 100 and No. 270 mesh sieves.</p>
	1B	1968	7.5-15	0-1	Yes	65.7	48.1	31.9	23.0	8.0	1	10.0%	Gran. Borrow (Grav.)	<p>Test #1B was in lower face. Material is: 7.5'-8.5', stony fine sand; 8.5'-15', sandy gravel. It is acceptable for Item 105, but excesses passing the No. 100 and No. 270 mesh sieves make it fail gradational requirements for Item 201.</p> <p>The owner was reluctant to open this area for development at the time of the field survey.</p>
10	1	1968	1-8	0-1	Yes	100	100	98.1	12.0	3.0 2.9*	1	---	Sand	<p>Owner: William Maitland.</p> <p>Area is a small pit west of Maitland house on State Aid</p>

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 8

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Highway No. 1. Test #1 was in east face of pit. Material is: 0-1', overburden; 1'-8', fine brown sand over medium to coarse gray sand that meets the specifications for Items 202 and 105. Face bottoms in pebbly sand. Area is not large enough to warrant further sampling.
11	1	1968	1-9.5	0-1	Yes	68.5	50.6	39.0	18.0	9.0	1	8.4%	Gran. Borrow (Grav.)	Owner: Redford P. King. Area is a small pit on west side of State Aid Highway No. 1. There is very little extension. Test #1 was in northeast face of 10' pit. Material is: 0-1', overburden; 1'-4', poorly sorted silty gravel; 4'-9.5', clean gravelly sand. It meets requirements for Item 105, but fails the specifications for Item 201 because of excesses passing the No. 100 and No. 270 mesh sieves.
	2	1968	0-3.5	---	Yes	86.6	70.3	57.6	48.0	33.0	1	9.0%	---	Test #2 was in floor about 12' southwest of Test #1. Water was encountered at 3.5'. Material tested is silty gravel with a great excess passing the #270 mesh sieve. It fails to meet requirements for Item 105.
12	1	1968	0.5-11.5	0-0.5	Yes	46.6	34.6	18.4	20.0	13.0	1	11.4%	---	Owner: Mrs. Gladys Brundage. Area is a deep pit on the east side of railroad tracks north

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 9

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
														of State Aid Highway No. 1. Test #1 was below high point of 30' north face. Material is: 0-0.5', sod; 0.5'-11.5', cobbly dirty gravel that has an excess of material passing the No. 270 mesh sieve that makes it unacceptable for Item 105.
13	1	1968	0-7	---	Yes	44.4	35.7	25.9	5.0	3.0	1	4.9%	Gravel	Owner: Fred Revoir. Area consists of a long narrow pit east of State Aid Highway No. 1 south of railroad crossing. The town was making extensive use of materials at time of field survey and most of material was subsequently removed. Test #1 was dug on west face near south end of 11' pit. Material is a cobbly gravel with many +6" stones not sampled. It meets the requirements for Items 201 and 105.
	2	1968	0-11.5	---	Yes	53.7	37.1	23.3	12.0	8.0	1	9.4%	Gran. Borrow (Grav.)	Test #2 was dug on a higher 18' face south of Test #1. Material is gravel with 3" to 6" cobbles and sand. To a depth of 11.5' it is acceptable for Item 105, but an excess passing the No. 270 mesh sieve makes it barely fail to meet the specifications for Item 201.
14	1	1968	1-11	0-1	Yes	36.0	18.9	17.8	28.0	14.4	1	---	---	Owners: Jessie Hulet and Marian Spear. Area consists of several

\*Percentage of Total Sample

SHAFTSBURY GRANULAR DATA SHEET NO. 10

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	2	1968	2-9.5	0-2	Yes	32.5	21.2	15.7	19.0	11.0	1 1/2	---	---	hillocks with scattered pits east-northeast of the Spear farm on U. S. Route 7. Test #1 was in upper 19' north face of east pit. Material is: 0-1', sod; 1'-11' cobbly gravel that was rejected for Item 105 because of an excess passing the No. 270 mesh sieve. Test #2 was in upper 11' face of north pit. Material is: 0-2', sod; 2'-9.5', cobbly sandy gravel that was rejected for Item 105 because of a slight excess passing the No. 270 mesh sieve.
	3	1968	1.5-6	0-1.5	Yes	100	99.5	98.7	48.0	22.0 21.7*	1	---	---	Test #3 was in upper face of west pit. Material is: 0-1.5', sod; 1.5'-6', silt-sand bottoming in fine sand. It fails to meet specifications for Item 105 because of a great amount passing the No. 270 mesh sieve.
15	1	1968	0.5-10.5	0-0.5	Yes	93.8	84.1	58.7	7.0	2.0	1	11.4%	Gravel	Owner: William Hall. Area consists of pits in woods west of U. S. Route 7. Test #1 was in north face of recently opened east pit. Material is: 0-0.5', sod; 0.5'-10.5', fine gravel and gravelly sand that meets requirements for Items 201 and 105.
	2A	1968	2.5-7	0-2.5	Yes	91.4	83.8	54.8	12.0	5.0	1 1/2	---	Gran. Borrow (Grav.)	Test #2A was in upper west-central face of old pit. Material is: 0-2.5', sod and

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 11

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2B	1968	7-12.5	0-2.5	Yes	62.9	52.4	31.7	4.0	1.5	1	19.4%	Gravel	silt; 2.5'-7', fine gravel with stones and a 2" clay lens that is acceptable for Item 105, but fails to meet requirements for Item 201 because of an excess passing the No. 270 mesh sieve. There was insufficient proper size stone for "per cent of wear" test. Test #2B was in lower west-central face of old pit. Material is: 7'-12.5', coarse clean gravel that meets requirements for Items 201 and 105.
	3	1968	7-11	0-7	Yes	100	100	98.1	12.0	3.0 2.8*	1	---	Sand	Test #3 was in south end of est face of old pit. Material is: 0-7', overburden and gravel section like that of Test #2B. 7'-11', fine sand with silt that meets requirements for Items 202 and 105; 11'-12' and 2' into floor, clay.
16	1A	1968	0.5-11.5	0-0.5	Yes	81.6	65.6	57.0	5.0	2.0	1	5.7%	Gravel	Owner: Charles Myers. Area consists of two large pits east and southwest of Myers' house on U. S. Route 7. Test #1A was in upper 16' face of north pit at west end. Material is: 0-0.5', overburden; 0.5'-13', layers of cobbles and medium-coarse pebbly sand that is acceptable for Items 201 and 105.
	1B	1968	13-16	0-0.5	Yes	100	100	100	18.0	3.0	1-	---	Sand	Test #1B was of a homogeneous fine sand from 13'-16' in

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 12

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1968	0.5-9	0-0.5	Yes	100	100	100	25.0	5.0	1-	---	Gran. Borrow (Sand)	lower face that meets requirements for Items 202 and 105. Test #2 was in center of floor about 60' southeast of Test #1B. Material is: 0-0.5', stony silt not in place; 0.5'-9', fine sand-silt that is acceptable for Item 105, but fails to meet specifications for Item 202 because of an excess passing the No. 100 mesh sieve.
	3A	1968	2-18	0-2	Yes	100	100	99.5	46.0	6.0	1	---	Gran. Borrow (Sand)	Test #3A was in upper 30' face of south pit. Material is: 0-2', sod and overburden; 2'-18', uniform fine sand that is acceptable for Item 105, but does not meet specifications for Item 202 because of an excess passing the No. 100 mesh sieve.
	3B	1968	18-24	0-2	Yes	100	96.4	91.9	4.0	1.5 1.4*	1-	---	Sand	Test #3B was in lower 30' face of south pit. Material is: 18'-24', coarse sand with an occasional pebble that meets specifications for Items 202 and 105.
	3C	1968	24-32	0-2	Yes	100	100	100	37.0	2.0	1-	---	Gran. Borrow (Sand)	Test #3C was in lower 30' face of south pit below Test #3B. Material is: 24'-32', uniform fine-silt sand. It is acceptable for Item 105, but fails to meet requirements for Item 202 because of an excess passing the No. 100 mesh sieve.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 13

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	4	1968	0.5-7.5	0-0.5	Yes	100	100	100	25.0	3.0	1	---	Gran. Borrow (Sand)	Test #4 was in floor of south pit about 40' from face. Material is: 0-0.5', brown silt not in place; 0.5'-4', medium-fine sand; 4'-7.5', fine-silt sand. It is acceptable for Item 105, but an excess passing the No. 100 mesh sieve fails it for Item 202 requirements.
17	1	1968	2.5-15	0-2.5	Yes	100	100	100	59.0	18.0	1	---	---	Owner: Charles Myers. Area consists of an open field east of Map Identification Number 16 that is bounded on the south by a ridge with two small pits. Test #1 was in face of pit at east end of ridge. Material is: 0-2.5', sods and silt; 2.5'-15', sandy silt with an infrequent lens of pebbly sand that failed to meet requirements for Item 105 because of an excess passing the No. 270 mesh sieve.
	2	1968	4-9	0-4	No	100	100	97.0	14.0	4.0 3.9*	1	---	Sand	Test #2 was in field about 150' south of north boundary and 300' west of east boundary. Material is: 0-4', sod and loamy silt; 4'-9', fine-medium sand with occasional stones that is acceptable for Items 202 and 105.
18	1	1968	0.5-3	0-0.5	No	56.1	40.0	25.7	23.0	10.0	3	7.4%	Gran. Borrow (Grav.)	Owner: Charles Myers. Area is the west end of a long narrow field south of Map Identification No. 16.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 14

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1968	1-5.5	0-1	No	80.3	70.8	53.7	12.0	6.0	2½	---	Gran. Borrow (Grav.)	<p>Test #1 was at north edge of field 60' west of gap in rock wall. Material is: 0-0.5', sod and stones; 0.5'-3', coarse dirty gravel that is acceptable for Item 105, but fails to meet gradational requirements for Item 201 because of excesses passing the No. 100 and No. 270 mesh sieves; 3'-7.5', medium clean sand that was inaccessible to backhoe.</p> <p>Test #2 was near west end of field about 110' west of Test #1. Material is: 0-1', sod and stones; 1'-5.5', coarse dirty gravel with a boulder that is acceptable for Item 105, but barely fails to meet gradational requirements for Item 201 because of an excess passing the No. 270 mesh sieve. Bottom is a stony white clay. There was insufficient proper size stone for "per cent of wear" test.</p>
19	1	1968	1-7.5	0-1	Yes	88.7	81.8	66.7	8.0	2.0 1.3*	1	---	Gran. Borrow (Sand)	<p>Owner: Mrs. Ella Cross.</p> <p>Area is double pit east of Town Highway No. 18. Test #1 was in upper face of 16.5' north face. Material is: 0-1', sod; 1'-7.5' pebbly sand that is acceptable for Item 105, but fails the requirements for Item 202 because of excesses retained on the 1½" and #4</p>

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 15

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
20	1	1968	0.5-5.5	0-0.5	No	72.1	60.0	48.1	12.0	5.0	2½	6.6%	Gran. Borrow (Grav.)	<p>screens.</p> <p>Owner: Herbert Douglas.</p> <p>Area is an excavation for Soil Conservation Service pond north of Douglas house on Town Highway No. 26.</p> <p>Test #1 was in 12.5' high central bank of excavated area. Material is: 0-0.5', sod; 0.5'-5.5', dirty rubble with angular, mainly quartzite stones that is acceptable for Item 105, but fails to meet specifications for Item 201 because of a slight excess passing the No. 270 mesh sieve.</p>
21	1	1968	1-11.5	0-1	Yes	100	96.2	93.6	22.0	5.0 4.5*	2	---	Gran. Borrow (Sand)	<p>Owner: Mrs. Mary Whitney.</p> <p>Area is region of topsoil stripped pits east of Paran Creek and south of Town Highway No. 26.</p> <p>Test #1 was in southeast part of stripped area. Material is: 0-1', sod; 1'-11.5', medium-pebbly sand with interbedded silt layers that is acceptable for Item 105, but barely fails to meet the requirements for Item 202 because of a slight excess passing the No. 100 mesh sieve.</p>
22	1	1968	1-14	0-1	Yes	81.8	81.8	79.8	25.0	10.0 8.0*	1	---	Gran. Borrow (Sand)	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area is northernmost pit owned by Dailey and is about one-third of a mile northwest of the H. L. Moffitt farm on</p>

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 16

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1968	14-18	0-1	Yes	100	92.5	91.1	21.0	8.0 7.3*	1-	---	Gran. Borrow (Sand)	<p>Town Highway No. 8.</p> <p>Test #1 was at top of high-east excavation at the east end of the pit. There is much washed in overburden and quite a few cobbles are in place. Material is: 0-5', turf and overburden; 5'-18', sand with stones and cobbles grading into slough. Sample is acceptable for Item 105, but excesses passing the No. 100 and No. 270 mesh sieves fail; for the Item 202 specifications.</p> <p>Test #2 was on the face immediately below Test #1. Material is: 14'-15', sand with stones; 15'-18', medium clean sand. These intervals are material that is acceptable for Item 105, but that fails to be acceptable for Item 202 because of excesses passing the No. 100 and No. 270 mesh sieves. Test bottomed in silt.</p>
23	1	1968	0-10	---	Yes	70.3	56.0	31.4	12.0	7.0	1	6.7%	Gran. Borrow (Grav.)	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area consists of a high pit with bulldozed furrows in the "Green Pits" holdings due west of Trumbull Mountain.</p> <p>Test #1 was of the upper 10 feet of 60' high face. Material is a cobbly gravel that is acceptable for Item 105, but barely fails to meet</p>

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 17

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1968	10-20	---	Yes	80.3	80.3	59.5	47.6	7.0 4.2*	1	---	Gran. Borrow (Grav.)	requirements for Item 201 because of a slight excess passing the No. 270 mesh screen. Test #2 was of the upper 60' high face immediately below Test #1. Material is silty sand with stones that is acceptable for Item 105. Because an excessive amount of stones are retained on the No. 4 screen, material is not acceptable for Item 202. Because excessive silt and fine sand passed the No. 100 and No. 270 sieves it is not acceptable for Item 201.
	3	1968	20-30	---	Yes	84.5	40.7	20.6	26.0	18.0	1	5.4%	---	Test #3 was of the upper central portion of the 60' high face immediately below Test #2. Material is a gravel that is rejected for Item 105 because of a great excess passing the No. 270 mesh sieve. The lower 30' of this face was thickly covered with sloughed material. It was inaccessible to the backhoe for sampling.
24	1	1968	1-11	0-1	Yes	85.7	75.3	61.0	11.0	5.0 3.0*	1	---	Gran. Borrow (Grav.)	Owner: Wm. E. Dailey, Inc. Area is a pit on hilltop, below which are bulldozed gullies, S80°W of Trumbull Mountain in the "Green Pits" holdings. Test #1 was of the pit face. Material is a stony sand that

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 18

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														had too great a fraction passing the No. 4 screen to meet requirements for Item 201 and too much stone content to meet the specifications for Item 202. It is acceptable for Item 105. There was insufficient stone for the "per cent of wear" test.
25	1	1968	0.5-13.5	0-0.5	Yes	61.3	51.2	43.7	17.0	5.0	1	8.0%	Gran. Borrow (Grav.)	Owner: Wm. E. Dailey, Inc. Area consists of high stripped hill in "Green Pits" holdings south of Map Identification No. 23. Test #1 was below crest of 38' west face. Top is stripped but residual 0.5' of sod was not sampled. From 0.5'-13.5' interbedded sand and gravel with many small cobbles meets the requirements for Item 105. An excess of material passing the No. 100 mesh sieve makes it unacceptable for Item 201.
	2	1968	26-36.5	0-0.5	Yes	100	100	80.3	7.0	3.0 2.4*	1-	---	Sand	Test #2 was northwest of Test #1 in same face. Because of steepness of face and sloughed material, Test #2 was taken in two parts with 6' of offset between. Material is: 26'-30', sand; 30'-36.5', stony sand. Collectively these intervals met requirements of Items 202 and 105.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 19

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	3	1968	0-22	---	Yes	61.0	58.1	50.9	17.0	6.0	1	3.8%	Gran. Borrow (Grav.)	Test #3 was taken below top 44' pit face east of hill-top. Material is coarse gravel with included sand that is acceptable for Item 105, but an excess passing the No. 100 and No. 270 mesh sieves make it unacceptable for Item 201.
	4	1968	34-44	---	Yes	100	99.0	98.0	25.0	8.0 7.8*	1	---	Gran. Borrow (Sand)	Test #4 was taken around corner to the north from Test #3. Material is a fine sand overlain by sloughed down cobbles and boulders that is acceptable for Item 105, but an excess passing the No. 100 and No. 270 mesh sieves fail it for Item 202.
26	1	1968	1-10	0-1	Yes	58.8	52.6	43.9	22.0	7.0	1	6.5%	Gran. Borrow (Grav.)	Owner: Wm. E. Dailey, Inc. Area is a pit near the northwest end of "Green Pits" holdings and S70°W of Map Identification No. 23. Test #1 was in center of 21' face below 1' sod remnant fringing stripped extension slope to west. Material is sand with stones that is acceptable for Item 201, but an excess passing the No. 100 and No. 270 mesh sieves make it unacceptable for Item 201.
	2	1968	10-21	0-1	Yes	74.1	65.0	43.1	17.0	8.0	1½	6.4%	Gran. Borrow (Grav.)	Test #2 was in lower face below Test #1. Material is silty gravel that is acceptable for Item 105, but an excess passing the No. 100 and No.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 20

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														270 mesh sieves make it unacceptable for Item 201.
27	1	1968	0.5-16	0-0.5	Yes	52.6	51.2	46.3	20.0	9.0	1	4.6%	Gran. Borrow (Grav.)	<p>Owner: Wm. E. Dailey, Inc. Area consists of pit and stripped ridge north and west of a slough in center of "Green Pits" holdings.</p> <p>Test #1 was in upper center of 19' face of pit. Material is: 0-0.5', cobbles and organic; 0.5'-3', cobbles and sand; 3'-16', sand with scattered stone layers. Interval tested (0.5'-16') is acceptable for Item 105, but because of excesses passing the No. 100 and No. 270 sieves, is unacceptable for Item 201.</p>
	2	1968	16-19	0-0.5	Yes	59.7	48.5	40.6	13.0	7.0	1-	---	Gran. Borrow (Grav.)	<p>Test #2 was in lower face about 15' west-southwest of Test #1. Material is sandy gravel that meets requirements for Item 105, but is unacceptable for Item 201 because of an excess passing the No. 270 mesh sieve. There was insufficient proper size stone for the "per cent of wear" test.</p>
	3	1968	0.5-11	0-0.5	Yes	65.0	50.7	41.0	24.0	11.0	1	4.6%	---	<p>Test #3 was in upper face of stripped ridge southwest of slough. Material is 0.5'-11' gravel with cobbles that is unacceptable for Item 105 because a slight excess passes the No. 270 mesh sieve.</p>

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 21

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
28	1	1968	11-20.5	0-11	Yes	40.2	33.8	25.8	9.0	6.0	1	3.2%	Gravel	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area is high cobble hill in "Green Pits" holdings near Town Highway No. 8.</p> <p>Test #1 was in upper face below 73' high point. It was estimated that about 35% of the material on the pit face exceeded 6". Material is: 0-3.5', cobbles and dirty granular (not sampled); 8,5'-11', silt seam (not sampled); 11'-20.5', cobbly gravel that meets requirements for Items 201 and 105.</p> <p>Below 20.5' the face was covered with loose, sloughed down material that precluded either hand or backhoe sampling.</p>
29	1	1968	2-11	0-2	Yes	62.6	49.0	33.4	25.0	9.0	1	10.6%	Gran. Borrow (Grav.)	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area is pit along southwest side of stripped ridge south of Map Identification No. 28 in "Green Pits" holdings.</p> <p>Test #1 was in upper 22.5' face. Material is: 0-2', sod and stones; 2'-11', gravel with cobbles that is acceptable for Item 105, but fails to meet requirements for Item 201 because of excesses passing the No. 100 and No. 270 sieves.</p>
30	1	1968	2-11	0-2	Yes	100	100	100	93.0	40.0	1	---	---	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area is sand or silt pillar</p>

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 22

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														near southeast corner of "Green Pits" holdings. Test #1 was from 17' north-east face near north end. Material is: 0-2', cobbly gravel; 2'-11', silty sand that is unacceptable for Item 105 because a great excess passes the No. 270 mesh sieve.
31	1	1968	5-16	0-5	Yes	100	88.9	76.4	62.0	20.0 15.3*	1	---	---	Owner: Wm. E. Dailey, Inc. Area is a stripped bank with small pits on top west of railroad and northeast of "Young's" holdings. Test #1 was below top of 27' bank near center. Material is: 0-5', cobbly gravel (not sampled); 5'-16', fine sand with 2.5' layer of fine gravel included. It fails to meet requirements for Item 105 because of an excess passing the No. 270 mesh sieve.
32	1	1968	2.5-9.5	0-2.5	Yes	63.0	51.5	37.6	23.0	10.0	1	11.1%	Gran. Borrow (Grav.)	Owner: Wm. E. Dailey, Inc. Area is a small pit in "Young's" holdings northeast of Map Identification No. 33. Test #1 was in upper 17' north face that is not accessible to a backhoe. Material is: 0-2.5', sod and dirty gravel; 2.5'-9.5', gravelly sand with cobbles that is acceptable for Item 105, but an excess passing the No. 100 mesh sieve makes it unacceptable for Item

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 23

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
33	1	1968	2.5-26.5	0-2.5	Yes	100	100	100	28.0	3.0	1	---	Gran. Borrow (Sand)	201. Owner: Wm. E. Dailey, Inc. Area is a large sand pit in "Young's" holdings north of Town Highway No. 30. Test #1 was in upper face at southwest corner of pit. Material is: 0-2.5', dirty cobbles; 2.5'-26.5', interbedded fine-medium sand that is acceptable for Item 105, but an excess passing the No. 100 mesh sieve makes it unacceptable for Item 202.
	2	1968	26.5'-?	0-2.5	Yes	100	100	100	23.0	4.0	1-	---	Gran. Borrow (Sand)	Test #2 was in lower face below Test #1. Material is fine-medium sand that is acceptable for Item 105, but an excess passing the No. 100 mesh sieve makes it unacceptable for Item 202.
34	1	1968	0.5-14	0-0.5	Yes	100	100	100	89.0	59.0	1	---	---	Owner: Wm. E. Dailey, Inc. Area is westernmost pit in "Young's" holdings, north of Town Highway No. 30. Highest point is 34'. Test #1 was near east end of north face. Material is: 0-0.5', sod; 0.5'-14', silty sand that is not acceptable for Item 105 because a great excess passes the No. 270 mesh sieve.
35	1	1968	1-5.5	0-1	Yes	58.2	48.3	36.3	8.0	5.0	1	9.3%	Gravel	Owner: Harry Bahan. Area consists of Bahan's

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 24

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks		
						% Passing										
						1 1/2"	5/8"	#4	#100	#270						
	2	1968	5.5-16	0-1	Yes	100	100	100	55.0	11.0	1	---	---	northwest pit and possible extension eastward which is south of Town Highway No. 30. Test #1 was in upper 15.5' southeast face. Material is: 0-1', sod and stones; 1'-5.5', clean sandy gravel that is acceptable for Items 201 and 105. Test #2 was below Test #1 in southeast face. Material is: 5.5'-16', clean sand and silt that barely fails to meet requirements for Item 105 because of a slight excess passing the No. 270 mesh sieve.		
	3	1968	0.5-2.0	0-0.5	Yes	N	O	T	S	A	M	P	L	E	D	Test #3 was in floor 150' northwest of Test #2. Material is: 0-0.5', sod; 0.5'-2', fine sand-silt, that was not sampled.
	4	1968	2.5-8.5	0-2.5	No	74.2	61.3	44.5	8.0	4.0	1	13.6%	Gravel	Test #4 was in possible extension 150' due east of Test #1. Material is: 0-0.5', sod; 0.5'-2.5', silt and stones; 2.5'-8.5', sandy coarse gravel which dips westward and that is acceptable for Items 201 and 105.		
	5	1968	2.5-9	0-2.5	No	79.5	69.9	58.8	4.0	2.0	1	---	Gran. Borrow (Grav.)	Test #5 was in possible extension 50' south of rock wall and 36' west of hedgerow near Town Highway No. 30. Material is: 0-2.5', sod and silt; 2.5'-9', cobbly coarse gravel that is acceptable for Items 105 and		

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 25

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
						1 1/2"	5/8"	#4	#100	#270				
														201 on grading. There was insufficient proper size stone for the "per cent of wear" test.
36	1	1968	2-7	0-2	Yes	78.8	66.2	54.0	5.0	1.5	1	9.2%	Gravel	Owner: Harry Bahan. Area includes small pits in edge of terrace south of Map Identification No. 35. Test #1 was in 7' face of southernmost pit about 400' south of Test #4 in Area #37. Material is: 0-2', sod and silt; 2'-7', cobbly clean gravel that meets requirements for Items 201 and 105.
	2	1968	0.5-9	0-0.5	Yes	100	100	100	80.0	25.0	1	---	---	Test #2 was in floor of pit about 20' east of Test #1. Material is: 0-0.5', sod and stones; 0.5'-9', fine sand-silt that is unacceptable for Item 105 because of a large excess passing the No. 270 mesh sieve.
37	1	1968	2.5-8.5	0-2.5	No	82.5	67.8	59.1	3.0	1.5	1	7.2%	Gravel	Owner: Harry Bahan. Area consists of northeasternmost pit, south of Town Highway No. 30 and west of town dump. Test #1 was northwest of pit and 385' south of rock wall. Material is: 0-2.5', sod and clay; 2.5'-8.5', cobbly coarse gravel that meets specifications for Items 201 and 105.

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 26

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2A	1968	1-7	0-1	Yes	58.0	38.3	23.7	13.0	6.0	1	11.2%	Gravel	Test #2A was in upper part of central north face. Material is: 0-1', sod and silt; 1'-7', coarse clean gravel with 10% +6" boulders that meets specifications for Items 201 and 105.
	2B	1968	7-9	0-1	Yes	88.0	65.2	59.8	6.0	3.0	1	---	Gran. Borrow (Grav.)	Test #2B was in lower west-central north face, 30' from Test #2A. Material is: 7'-9', medium clean gravel with some +6" boulders that meets gradational requirements for Items 105 and 201, but there was insufficient proper size stone for the "per cent of wear" test.
38	1	1968	1-11.5	0-1	Yes	45.9	35.9	29.5	36.0	17.0	1	---	---	Owner; Horace M. Young, Jr. Area is a pit northwest of the intersection of Town Highway No. 29 with Town Highway No. 8. Access road is from Town Highway No. 30. Test #1 was in upper 15' southwest face. Material is: 0-1', sod with silt and stones (not tested); 1'-4', silty cobbly gravel; 4'-8.5', silty sand with stones; 8.5'-11.5', fine silty gravel. Intervals below 1' collectively fail to meet requirements for Item 105 because a large excess passes the No. 270 mesh sieve. Bottom is clean fine gravel.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 27

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
39	1	1968	1.5-5.5	0-1.5	Yes	72.5	60.9	43.6	6.0	4.0	1	10.6%	Gravel	Owner: Harry Bahan. Area contains several pits, southernmost of which contains junk cars, and possible extension to northwest, all of which is immediately north of Map Identification No. 40. Test #1 was in center of southwest face of pit with junked cars. Material is: 0-1.5', sod and stones; 1.5'-4', coarse cobbly gravel; 4'-5.5', stony coarse sand. Material in combined 1.5'-5.5' interval meets the requirements for Item 201.
	2	1968	0-9.5	---	Yes	100	100	100	75.0	10.0	1	---	Gran. Borrow (Sand)	Test #2 was about 35' southeast of Test #1 in floor. Material is: 0-9.5', fine sand-silt that is acceptable for Item 105, but unacceptable for Item 202 because of excesses passing the No. 100 and No. 270 mesh sieves.
	3	1968	2.5-11	0-2.5	Yes	59.3	37.2	21.7	8.0	5.0	1	12.4%	Gravel	Test #3 was in a face near the southwest corner of a second pit, north of pit with junked cars, and southeast of some maple trees. Material is: 0-2.5', sod and stones (not tested); 2.5'-11', cobbly coarse gravel that is acceptable for Item 201.
	4A	1968	2-6	0-2	No	74.2	63.6	41.9	5.0	2.0	1	5.7%	Gravel	Test #4A was in possible extension 155' N65°W of Test #3. Material is: 0-2', sod

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 28

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Overburden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	4B	1968	6-10	---	No	100	100	100	71.0	10.0	1	---	Gran. Borrow (Sand)	and silt (not tested); 2'-6', cobbly coarse gravel with northward dipping beds that is acceptable for Item 201. Test #4B material below Test #4A is: 6'-10', fine sand-silt that is acceptable for Item 105. A great excess passing the No. 100 mesh sieve makes its unacceptable for Item 202.
40	1	1968	0.5-13.5	0-0.5	Yes	100	100	100	9.0	1.0	1	---	Sand	Owner: Harry Bahan. Area is first sandpit east of barn at terminus of Town Highway No. 31. Test #1 was in east face of 16.5' "dead" sand pit. Material is interbedded fine sand, silt, and silt-clay beds that meets the requirements for Items 202 and 105.
41	1	1968	3-16	0-3	Yes	54.6	43.2	28.7	31.0	17.0	1	9.6%	---	Owner: Wm. E. Dailey, Inc. Area is northernmost pit in "Waite's" holdings. Test #1 was in upper south-east face. Material is: 0-3', sod; 3'-16', poorly sorted coarse gravel with much silty sand and angular stones that fails the specifications for Item 105 because of a great excess passing the No. 270 mesh sieve.
42	1	1968	1-15.5	0-1	Yes	61.9	56.6	51.9	39.0	11.0	1	---	Gran. Borrow (Sand)	Owner: Wm. E. Dailey, Inc. Area is pit complex near

5.7\*

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 29

Man 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	1968	15.5-28.5	0-1	Yes	100	100	100	13.0	4.0	1-	---	Sand	<p>the northwest end of "Waite's" holdings.</p> <p>Test #1 was at top of 30' face near west end of ridge. Material is: 0-1', sod; 1'-15.5', sand with an included 3' gravel bed that collectively fails to meet requirements for Item 202 because of an excessive amount retained on the 1½ inch screen. It is acceptable for Item 105.</p> <p>Test #2 was about 25' west of and below Test #1. Material is: 15.5'-28.5', medium-fine sand that is acceptable for Item 202.</p>
43	1	1968	1-13	0-1	Yes	48.2	39.9	30.3	18.0	1.0	1	3.8%	Gran. Borrow (Grav.)	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area is comprised of a double level pit on the eastern edge of the "Waite's" holdings and a large pillar of cobbly gravel west of it.</p> <p>Test #1 was in upper center of 32' east face of pillar. Material is: 0-1', cobbly turf; 1'-13', sandy gravel with cobbles that is acceptable for Item 105, but an excess passing the No. 100 mesh sieve makes it unacceptable for Item 201.</p>
	2	1968	13-26	0-1	Yes	81.8	67.6	47.9	7.0	2.0	1½	3.8%	Gravel	<p>Test #2 was in lower face northeast of Test #1. Material is sandy gravel with cobbles from 13'-26' that is acceptable for Item 201.</p>

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 30

Man Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over- burden (Ft)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	3	1968	0.5-10.5	0-0.5	Yes	81.0	59.2	46.2	7.0	3.0	1	5.6%	Gravel	Test #3 was in northwest corner of upper 28.5' face of upper level pit. Material is: 0-0.5', brown silty gravel (not sampled); 0.5'-10.5', sandy gravel that is acceptable for Item 201.
	4	1968	10.5-19.5	0-0.5	Yes	100	100	71.2	7.0	1.0	1-	---	Sand	Test #4 was in lower face about 15' east of Test #3. Material is: 10.5'-14', gravelly sand; 14'-19.5', stony sand which collectively are acceptable for Item 202.
	5	1968	0-10	---	Yes	70.2	59.1	46.3	5.0	1.0	1½	5.0%	Gravel	Test #5 was in upper center face of lower level pit. Material is: 0-10', gravel and gravelly sand beds with a few cobbles that meets requirements for Item 201. Dailey did not wish further testing with the backhoe of southeast facing pits in this area because of prior complaints by local landowners that excavation was ruining the picturesqueness of the landscape.
44	1	1968	2-20	0-2	Yes	100	100	100	23.0	6.0	1	---	Gran. Borrow (Sand)	Owner: Wm. E. Dailey, Inc. Area is southernmost pit of "Waite's" holdings at upper level south of Map Identification No. 43. Test #1 was in upper 30' face at south end. Material is: 0-2', sod and turf; 2'-20', sand with pebbles and silt layers that is acceptable for

\*Percentage of Total Sample

TABLE I

SHAFTSBURY 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					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1968	0-18	---	Yes	100	100	100	16.0	4.0	1	---	Sand	Item 105, but an excess passing the No. 100 and No. 270 mesh sieves make it unacceptable for Item 202. Test #2 was in east side of 50' southwest face. Material from 0-18' is a fine-medium sand that is acceptable for Items 202 and 105. Much sloughed in silt below Test #2 was not sampled.
	3	1968	44-50	---	Yes	100	100	98.9	18.0	5.0	1-	---	Sand	Test #3 was in lower face below Test #2. Material is: 44'-50', fine sand that is acceptable for Items 202 and 105.
	4	1968	12-20	0-2	Yes	100	100	100	8.0	2.0	1	---	Sand	Test #4 was at extreme east end of face. Material is: 0-2', sod; 12'-20', cross-bedded fine sand that is acceptable for Items 202 and 105.
45	1	1968	1-11.5	0-1	Yes	44.3	34.8	23.4	11.0	6.0	1-	9.8%	Gravel	Owner: Wm. E. Dailey, Inc. Area is northernmost pit of "Hawkins-Patton" holdings. Test #1 was in upper 27' southeast face. Material is: 0-1', stones and silt; 1'-11.5', cobbly gravel with estimated 40% +4" stones that is acceptable for Item 201.
46	1	1968	0.5-6.5	0-0.5	Yes	100	100	72.0	57.0	46.0	1	---	---	Owner: Wm. E. Dailey, Inc. Area is depleted pit complex northwest of Town Highway No. 8. Test was in upper 10' central face at north edge of pit

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 32

Map Ident. No	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														complex. Material tested was 0.5'-6.5', silt with stones that is unacceptable for Item 105 because of a great excess passing the No. 270 mesh sieve.
47	1	1968	11.5-23.5	0-11.5	Yes	67.8	56.3	41.7	11.0	6.0	1-	9.2%	Gran. Borrow (Grav.)	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area is large pit west of railroad and "Hawkins-Patton" holdings.</p> <p>Test #1 was in center of 27' north face. Material is: 0-11.5', mainly cobbles with dirty gravel and an occasional boulder (not sampled); 11.5'-19', sandy gravel with 10% cobbles; 19'-21', medium sand; 21'-23.5', silty fine gravel that is acceptable for Item 105, but barely fails to meet requirements for Item 201 because of a slight excess passing the No. 270 mesh sieve.</p>
48	1	1968	2-9	0-2	Yes	100	100	100	18.0	4.0	1	---	Sand	<p>Owner: Wm. E. Dailey, Inc.</p> <p>Area is pit west of the junction of private roads southwest of Map Identification No. 47.</p> <p>Test #1 was in upper southeast corner face. Material is: 0-2', sod and stones; 2'-9', fine sand-silt. That is acceptable for Item 202.</p>
	2	1968	9-12.5	0-2	Yes	100	100	100	2.0	1.0	1	---	Sand	<p>Test #2 was in same face below Test #1. Material is pebbly sand that is also acceptable for Item 202.</p>

\*Percentage of Total Sample

TABLE I

SHAFTSBURY GRANULAR DATA SHEET NO. 33

Mar Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over- burden (Ft)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														Interval tested was from 9' to 12.5'.
4 <sup>a</sup>	1	1968	1-8.5	0-1	Yes	67.1	53.9	39.6	5.0	2.0	1	6.0%	Gravel	Owner: Mrs. Cushman. Area is grown in pit west of Wm. E. Dailey, Inc. offices on U. S. Route 7. Test #1 was in upper 23' northeast face. Material is: 0-1', sod and overburden; 1'-8.5', sandy gravel with minor clay and occasional cobbles that is acceptable for Item 201.
	2	1968	12.5-20.5	0-1	Yes	100	100	100	9.0	3.0	1	9.6%	Gravel	Test #2 was below and about 10' southwest of Test #1. Material is: 12.5'-20.5', finer than that of Test #1 at top, becoming coarser with depth and very clean at the bottom. It is acceptable for Item 201.
	3	1968	2-6	0-2	Yes	79.8	68.6	56.1	32.0	11.0	1-	8.8%	Gran. Borrow (Grav.)	Test #3 was in floor about 42' southwest of Test #2 in floor. Material is; 0-2', sod and silt (not tested); 2'-6', fine sand with stones that increase to +3" size with depth. Owner's caretaker permitted sampling, but doubted that owner would wish to develop property in the future.
5 <sup>a</sup>	1A	1968	1-18	0-1	Yes	79.4	63.0	39.6	8.0	3.0	1	5.4%	Gravel	Owner: Arthur Howard. Area is pit in hillside east of South Shaftsbury and north of State Aid Highway No. 6.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 34

Man Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over- burden (Ft)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	1B	1968	27-35	0-1	Yes	93.9	60.9	40.7	12.0	5.0	1½	8.8%	Gran. Borrow (Grav.)	<p>Test #1A was in upper 35' east face of pit. Top of which is stripped. Material is: 0-1', overburden (not sampled); 1'-18', cobble gravel with most cobbles in 3"-6" range that is acceptable for Item 201.</p> <p>Test #1B was at southeast corner of lower face. Material consists of intermittent clean and sandy gravel layers with an infrequent clay lens. Interval from 27'-35' meets requirements for Item 105, but fails the specifications for Item 201 because of a slight excess of material passing the No. 270 mesh sieve.</p>
51	1	1968	1-10	0-1	Yes	69.7	55.0	35.1	11.0	4.0	1	6.8%	Gravel	<p>Owner: Lonnie Wasco.</p> <p>Area is old pit formerly owned by Alfred Niles that is east of Harrington Cobble and west of State Aid Highway No. 5.</p> <p>Test #1 is center of northwest face. Top foot of face is dirty, but the rest of 10' face is clean with sub-angular stones that meets requirements for Item 201.</p>
	2	1968	3-6.5	0-3	No	90.8	83.8	72.5	48.0	32.0	1½	---	---	<p>Test #2 was in possible extension 70' due north of Test #1. Material is: 0-3', sod and loam with large stones (not</p>

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 35

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
						1 1/2"	5/8"	#4	#100	#270				
														tested): 3'-6.5', poorly sorted and bedded dirty coarse gravel with some large, rotten cobbles that is not acceptable for Item 105 because of a great excess passing the No. 270 mesh sieve.
52	1	1968	1-5	0-1	Yes	66.4	59.1	49.0	4.0	3.0	1	---	Gran. Borrow (Grav.)	Owner: Alfred Wade. Area is large shallow pit east across brook from junction of Town Highway No. 33 with State Aid Highway No. 5. Test #1 was on upper level in northeast corner. Material is: 0-1', sod; 1'-5', gravel that meets grading requirements for Item 201, but insufficient stone for "per cent of wear" test makes it acceptable only for Item 105.
	2	1968	0.5-4.5	0-0.5	Yes	90.7	71.1	46.9	6.0	3.0	3	11.5%	Gravel	Test #2 was in lower east face. Material is: 0-0.5', sod; 0.5'-4', gravel; 4'-4.5', silt to clay. The 4' interval is acceptable for Item 201 Owner denied permission to take backhoe samples outside of pit.
53	1	1968	2-11	0-2	Yes	100	96.4	91.7	16.0	3.0	1	---	Sand	Owner: Lawrence Cornell. Area consists of large pit east of State Aid Highway No. 5 and possible extension southwards. Test #1 was in upper west end of face. Material is: 0-2', sod and dirty stony sand.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 36

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	2	1968	0-10	---	Yes	100	100	90.6	53.0	15.0 13.6*	1	---	---	2'-11', layers of sand and pebbly sand that is acceptable for Item 202. Test #2 was in lower 17.5' face below stripped level southeast of Test #1. Material is: 0-10', fine sand with silt and a few pebbles near top. It is unacceptable for Item 105 because of an excess passing the No. 270 mesh sieve.
	3A	1968	2-13	0-2	Yes	100	100	86.8	12.0	5.0 4.3*	1	---	Sand	Test #3A was in upper 20' face of east center of pit. Material is: 0-2', sod and silty sand; 2'-6', pebbly coarse sand; 6'-13', fine sand with pebbly and silty sand layers. Interval between 2' and 13' meets requirements for Item 202 and 105.
	3B	1968	13-20	0-2	Yes	100	97.0	87.8	11.0	2.0	1	---	Sand	Test #3B was below Test #3A in east-central face. Material is: 13'-20', pebbly sand with minor silt seamlets that is acceptable for Items 202 and 105.
	4	1968	0.5-12	0-0.5	Yes	100	100	88.7	9.0	3.0 2.7*	2	---	Sand	Test #4 was in upper 16.5' east face of pit. Material is: 0-6.5', pebbly sand; 6.5'-12', fine sand. Sand beds dip an apparent 27.5° south. Interval between 0.5' and 12' meets requirements for Items 202 and 105.
	5	1968	4.5-10	---	Yes	100	100	100	90.0	39.0	1	---	---	Test #5 was in lower face

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 37

Mar Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over- burden (Ft)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	6	1968	2-10	0-2	Yes	100	98.2	95.0	46.0	12.0 11.4*	1	---	---	about 60' southwest of Test #2. Material is silt to clay from 4.5'-10' that is not acceptable for Item 105 because of a great excess that passes the No. 270 mesh sieve. Test #6 was in floor about 20' southwest of Test #3B. Material is: 0-2', silt (not in place); 2'-6', pebbly sand with a few stones; 6'-10', sandy silt. Interval from 2' to 10' barely fails to meet the requirements for Item 105 because of a slight excess that passes the No. 270 mesh sieve.
	7	1968	0.5-6	0-0.5	Yes	100	96.5	84.8	10.0	2.0	1	---	Sand	Test #7 was in floor at extreme southeast end of pit. Material is: 0-0.5', silt (not in place); 0.5'-6', pebbly sand, dipping south that is acceptable for Items 202 and 105.
	8	1968	2-8	0-2	No	100	100	100	34.0	9.0	1	---	Gran. Borrow (Sand)	Test #8 was just south of birch woods and field fence at point N15°W of Cornell house. Material is: 0-2', sod and silt; 2'-8', fine to medium sand that fails to meet requirements for Item 202 because of excesses passing the No. 100 and No. 270 mesh sieves, but that is acceptable for Item 105; 8'-10', stony sand that was not tested.

\*Percentage of Total Sample

TABLE I

## SHAFTSBURY GRANULAR DATA SHEET NO. 38

Map Ident No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over- burden (Ft)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks		
						1 1/2"	5/8"	#4	#100	#270						
	9	1968	0-4.5	---	No	N	O	T	S	A	H	P	L	E	D	Test #9 was south of fence at point 300' west of Test #8. Material is: 0-1.5', mossy sod and silt; 1.5'-4.5' reddish-brown silt with many +4" cobbles that was not tested.

\*Percentage of Total Sample

TABLE I  
Supplement

SHAFTSBURY PROPERTY OWNERS - GRANULAR

	Map Ident. No.
Bahan, Harry	35, 36, 37, 39, 40
Brundage, Gladys (Mrs.)	12
Cornell, Lawrence	53
Cross, Ella (Mrs.)	19
Cushman, E. S. (Mrs.)	49
Dailey, William E., Inc.	22, 23, 24, 25, 26, 27, 28 29, 30, 31, 32, 33, 34, 41 42, 43, 44, 45, 46, 47, 48
Douglas, Herbert	20
Favreau, Raymond	4
Galusha, Horace M.	5
Hall, William	15
Hewitt, Merritt S., Jr.	7
Howard, Arthur	50
Hulet, Jessie (Mrs.)	14
Hulet, Thurston	8
Jones, E. F.	6
King, Redford P.	11
Maitland, William	10
Myers, Charles	16, 17, 18
Revoir, Fred	13
Rohm, F. A.	9
Skidmore, Ken	1, 2
Spear, Marian (Miss)	14
Wade, Alfred	52
Wasco, Lonnie	51
Westfall, William	3
Whitney, Mary (Mrs.)	21
Young, Horace M., Jr.	38

TABLE II

## SHAFTSBURY ROCK DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
1	1	1968	Dolomite	No	Chip	2.4%	Owner: John T. Harrison, Jr. The area is a wooded hillside east of Town Highway No. 23 which was tested 0.25 mile south of Town Highway No. 21. Test #1 started from point 235' east of Town Highway No. 23 and was worked from east to west at random for 75'. This test was of a hard quartzitic dolomite that meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by laboratory Method AASHO T-96 as well as Method AASHO T-3.
	2	1968	Dolomite	No	Chip	2.1%	Test #2 started from point 160' east of Town Highway No. 23 and was worked from east to west at random, ending 80' east of road. There were phyllitic partings in the sample tested that was similar in other respects to that of Test #1. It also meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-96 and Method AASHO T-3. Subsequent to testing this area, written communication from Mr. John T. Harrison, Jr. indicated that he and his wife would not care for a processing plant or large trucking operation on the site.
2	1	1968	Dolomite	No	Chip	2.9%	Owner: Bennington Rod and Gun Club. The area is on the south side of Hale Mountain north-east of the Bennington Rod and Gun Club building on Town Highway No. 29. Extensive exposures of gray weathered massive to fairly thin-bedded dolomite occur on the steep and thickly wooded south and southwest slopes of the mountain. Both samples were taken due west across the strike in woods northwest of a large open pasture at the east side of the property. Test #1 was begun at point 675' west of a stone wall and fence forming the east boundary of the property for 65' at random. Rock tested is a hard gray to buff siliceous dolomite that fractures in a blocky or angular manner for the most part. It meets abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-96 as well as

TABLE II

SHAFTSBURY ROCK DATA SHEET NO. 2

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
	2	1968	Dolomite	No	Chip	2.6%	<p>Method AASHO T-3.</p> <p>Test #2 was taken from west end of Test #1 at random for 85' to terminus at point 825' west of stone wall and fence forming the east boundary of the property. Material which is similar in field appearance to that of Test #1 also meets abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-96 as well as Method AASHO T-3.</p> <p>The best route for access to this area would be via the large open pasture southeast of it.</p>
3	1	1968	Dolomite	No	Chip	3.0%	<p>Owner: Bennington Rod and Gun Club.</p> <p>The area is at easternmost ridge within property and lies on the wooded southeast slope of Hale Mountain. The rock sampled is coarse to fine mainly gray weathered, but sometimes buff weathered somewhat scored dolomite calcite in places and with scattered knots of white quartz.</p> <p>Test #1 was begun 100' west of stone wall and fence forming the east boundary of the property. Sample traverse was S50°W across the strike for 75'. Rock tested is light gray to light blue gray dolomite that fractures in an angular or blocky manner for the most part. It meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by both Method AASHO T-96 and Method AASHO T-3.</p>
	2	1968	Dolomite	No	Chip	4.0%	<p>Test #2 continued along the same traverse from 75' to 150'. Material tested is similar to that of Test #1 and also meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by both Method AASHO T-96 and Method AASHO T-3.</p>
	3	1968	Dolomite	No	Chip	4.4%	<p>Test #3 continued along the same traverse from 150' to 225'. Material tested is similar to that of Test #1 and Test #2 and also meets abrasion requirements for Sub-base of Crushed Rock, Item 024 when tested by both Method AASHO T-96 and Method AASHO T-3. Some of the material for this test was taken from float.</p>

TABLE II

## SHAFTSBURY ROCK DATA SHEET NO. 3

Map Ident No.	Field Test No	Year Field Tested	Rock Type	Exist- ing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							The lower slope in this area has much loose rock and many large to small blocks. There is plenty of relief for a quarrying operation, but outcrops west of Test #3 are very sparse. The best route for access would be via the large open pasture to the south.
4	1	1968	Limestone	No	Chip	8.6%	Owner: Lonnie Wasco. The area is at the north end of Harrington Cobble. Eastward dipping limestone was sampled along an east-west traverse roughly 50' north of U.S.C and G.S. benchmark No. 2. Rock tested consists of a soft crystalline limestone and marble with scoriaceous weathering that extends to depth. Rock breaks into splintery and blocky shapes that are the result of thin bedding and/or closely spaced joints. Good samples are difficult to obtain. Test #1 was taken from 0-75'. Rock fails to meet the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-3 and by Method AASHO T-96.
	2	1968	Limestone	No	Chip	4.4%	Test #2 was taken from 75'-150' westward from Test #1. Material is similar to but a little harder than that of Test #1. It meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-3, but fails by Method AASHO T-96.
5	1	1968	Limestone	No	Chip	3.6%	Owner: Thurston Hulet. Area comprises the crest and upper east slope of Bucks Cobble, which land form has a rounded summit and vertical west face. Tests were taken along a S70°E traverse from top of west face across the strike. Rock is a thin bedded gray to blue-gray weathered limestone or marble that varies from soft to fairly hard. It fractures in splinters or angular blocks. Test #1 was from west face for 80' across summit at random. Material meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-96 and by Method AASHO T-3.
	2	1968	Limestone	No	Chip	3.2%	Test #2 was from end of Test #1 for 70' down 35° upper

TABLE II

## SHAFTSBURY ROCK DATA SHEET NO. 4

Map Ident No	Field Test No	Year Field Tested	Rock Type	Exist- ing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							east slope at random. Material meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-3, but fails by Method AASHO T-96. The best access to this area would be via a private road southeast to State Aid Highway No. 6.
6	1	1968	Dolomite	No	Chip	1.2%	Owner: Don Peters. The area is a large open field southeast of the Peters farm on Town Highway No. 9. Rock varies from medium gray dolomite to light gray limestone and marble. Test #1 started at point 90' east of Town Highway No. 9 and 50' north of rock wall boundary at woods to south. It extended for 60' eastward at random across strike. Material sampled meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-96 and by Method AASHO T-3.
	2	1968	Dolomite	No	Chip	2.0%	Test #2 started at point 125' east of Test #1 and 135' north of rock wall. It extended for 100' S75°E to point about 250' west of bluffs overlooking Cold Spring Brook to the east. Material sampled meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested both by Method AASHO T-96 and by Method AASHO T-3.
7	1	1968	Marble	Yes	Chip	7.0%	Owner: Robert Marsh. The Area is an old quarry on the north-facing slope of a hill north of Town Highway No. 7 near the New York State Line. Quarry was tested on 15' vertical east face and 65' across floor in an east-west direction. Rock is thin-bedded white to gray marble or limestone with some inter-bedded dolomite. West of quarry is very steep and wooded down slope with a few exposures. Land slopes gently east of the quarry with a few trees and few scattered outcrops. Bedding dips 15° to east. Rock tends to fracture angularly with many flat pieces. Phyllitic partings were noted. Test #1 was taken at random for 75' from east slope westward across floor. Material meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when

TABLE II

## SHAFTSBURY ROCK DATA SHEET NO. 5

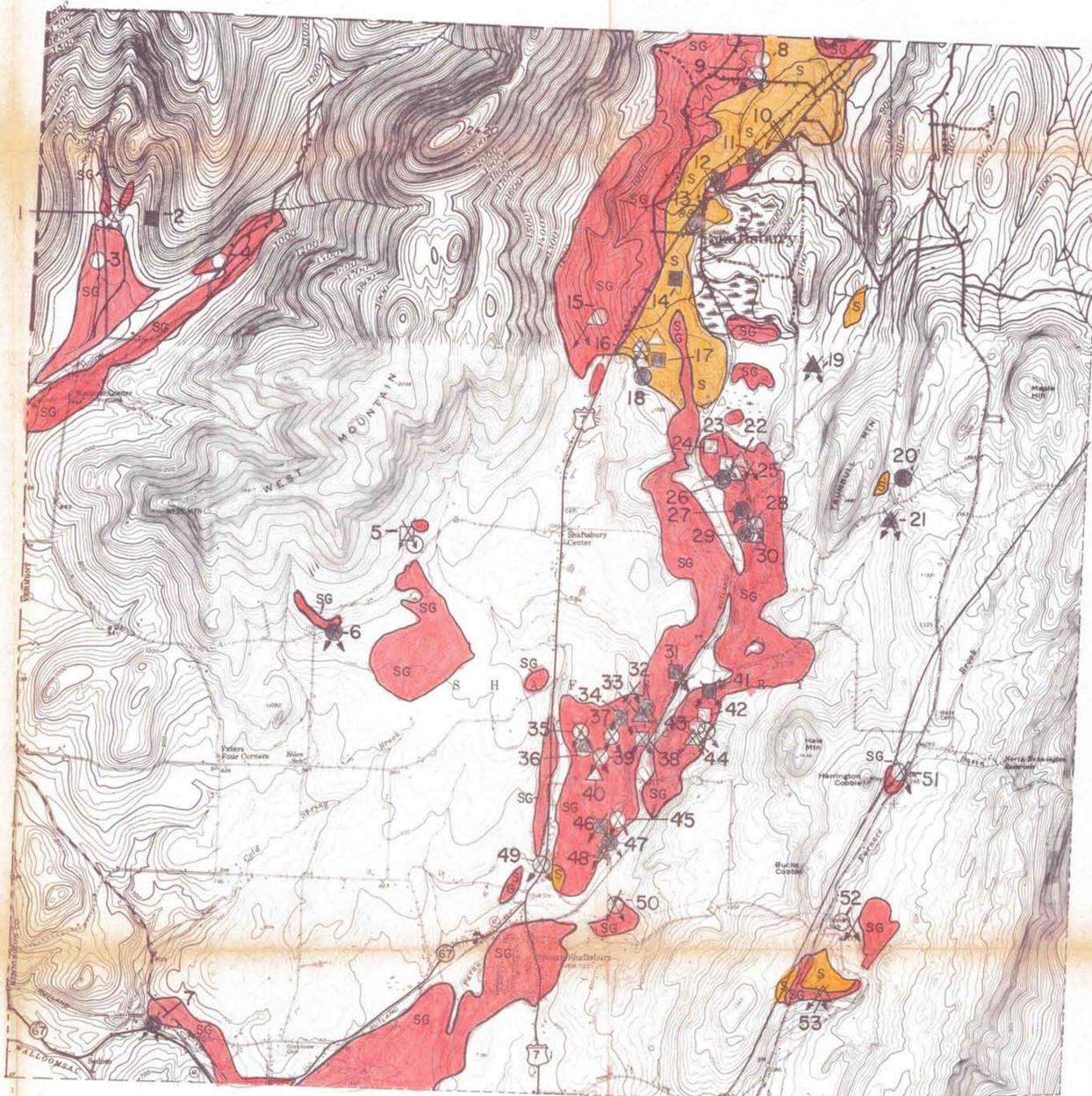
Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							tested by Method AASHO T-3, but fails by Method AASHO T-96.
P	1	1968	Limestone	Yes	Chip	4.9%	<p>Owner: Robert Marsh.</p> <p>The area is an old quarry and its possible eastward extension on the south-facing slope of a hill north of Town Highway No. 7 near the New York State Line.</p> <p>Test #1 was of possible eastward extension from east face to point 82' east. Material comprises a light gray limestone with calcite veinlets at the east end and white marble at the west end. It meets the requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-3.</p>
	2	1968	Marble	Yes	Chip	6.6%	<p>Test #2 was across quarry floor from east face westward for 68'. Material is a white to light gray marble that meets the abrasion requirements for Sub-base of Crushed Rock, Item 204 when tested by Method AASHO T-3, but that fails by Method AASHO T-96.</p>

TABLE II  
Supplement

SHAFTSBURY PROPERTY OWNERS - ROCK

Map Ident. No.

Bennington Rod and Gun Club	2, 3
Harrison, John T., Jr.	1
Hulet, Thurston	5
Marsh, Robert	7, 8
Peters, Don	6
Wasco, Lonnie	4



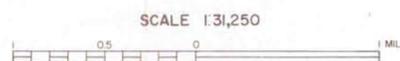
ARTERIAL HIGHWAY  
APPROXIMATE LOCATION  
STATION 880+00

ARTERIAL HIGHWAY  
APPROXIMATE LOCATION  
STATION 625+00

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)

SHAFTSBURY



CONTOUR INTERVAL 20 FEET

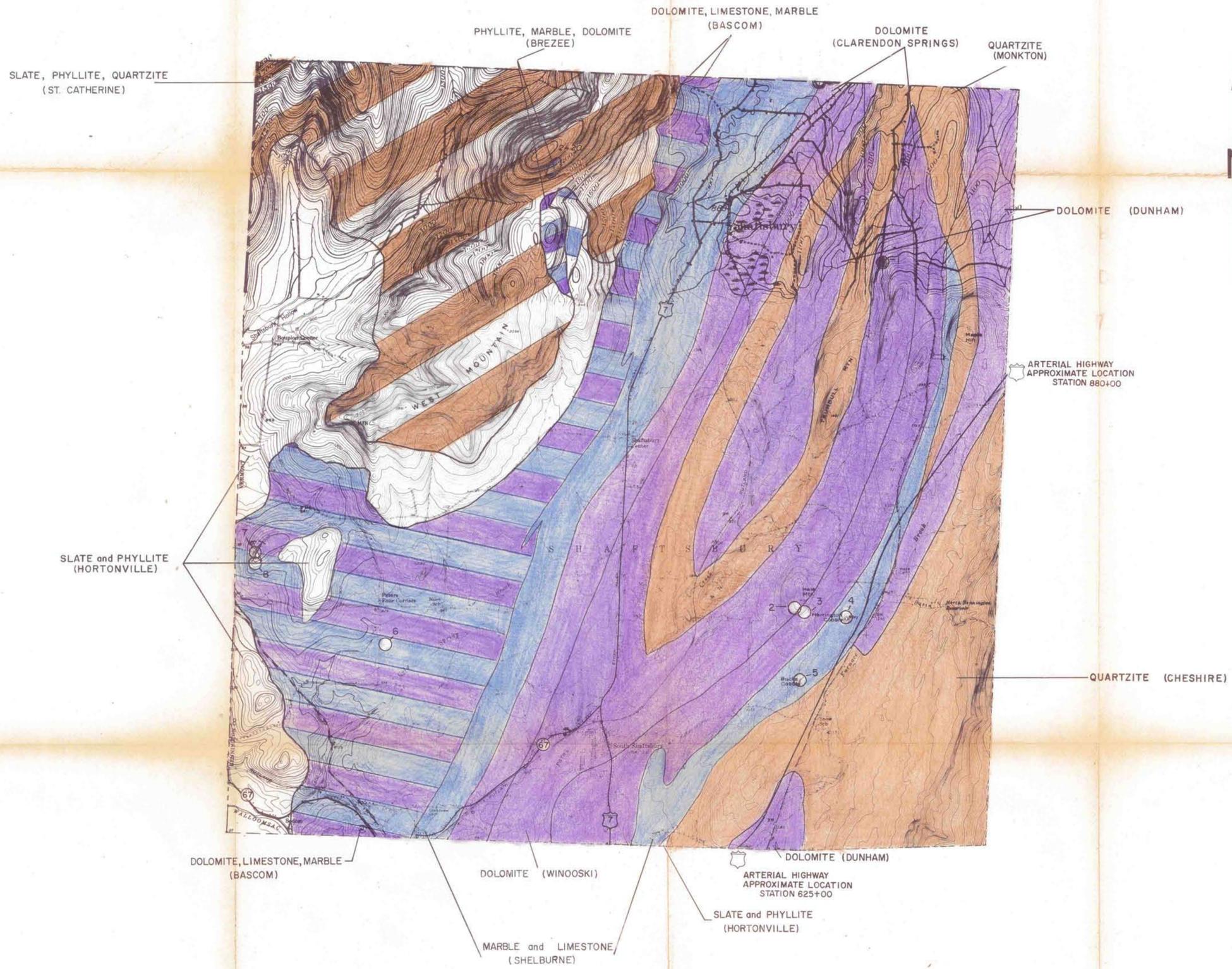
1969

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

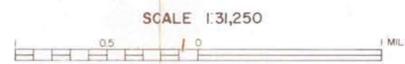
DATE				
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LEGEND

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

SHAFTSBURY



CONTOUR INTERVAL 20 FEET

1969

ROCK MATERIALS MAP

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

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

DATE				
BY				