

SURVEY OF HIGHWAY CONSTRUCTION MATERIALS

IN THE TOWN OF CLARENDON, RUTLAND COUNTY, VERMONT

prepared by

Engineering Geology Section

Materials Division

Vermont Department of Highways

in cooperation with

United States Department of Commerce

Bureau of Public Roads

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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 Clarendon is located in Rutland County in the south central portion of the state. It is bounded on the north by the towns of West Rutland and Rutland, on the east by the town of Shrewsbury, on the south by the towns of Wallingford and Tinmouth, and on the west by the Town of Ira.

It is largely in the Vermont Valley, a southeastern portion of the Lake Champlain Lowlands, which is floored by Paleozoic sedimentary and metamorphic rocks which are easily eroded except for a few occurrences of quartzite. The western edge of the township is in small part underlain by a Taconic Range sequence of resistant metamorphic rocks. Drainage is into Lake Champlain; the eastern two-thirds of the township is drained by the Otter Creek and the western one-third by the Clarendon River, both flowing north from the area.

The highest elevation is on an unnamed mountain near the southwest edge of the township at 2405 feet. The lowest elevation is less than 540 feet at the point where the Clarendon River crosses the town line at the northwest corner.

Procedure for Rock Survey

The routine employed by the Project in the survey of possible sources of rock for highway construction is divided into two main stages; the office investigation and field investigation. The first is conducted primarily during the winter months and comprises the mapping of rock types as indicated in various reference sources. Many different sources of information were utilized, as indicated in the Bibliography. These references differ considerably in dependability due to new developments and studies contributing to the obsolescence of a number of reports. In addition, the results of samples taken by other individuals are analyzed, and the location in which these samples were taken is mapped when possible. In other words, as complete a correlation as possible is made of all the information available concerning the geology of the area under con-

sideration.

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

Discussion of Rock and Rock Sources

It will be observed that the information on the surface-geology bedrock map in regard to rock type is simplified. For a more detailed description of the respective rock formations, a summary is included in this report. It is apparent from this summary that each formation may not be composed of one distinct rock type, but may be a complex mixture of rock types blending into one another. For this reason, the data sheets may describe the rock tested as differing from the designation on the map.

Occasionally, rocks belonging to same formation and exhibiting similar outward characteristics (i.e., color, texture, etc.) may produce different

abrasion results due to different physical and chemical properties. Therefore, in no case should satisfactory test results of an area be construed as meaning that the same formation, even in the same area, will not later produce unsatisfactory material. This is especially true of metamorphic rocks.

As can readily be seen on the surface geology rock map, there are 14 different rock formations or distinct lithological types within the township. For a detailed description of each type refer to the summary included in this report. In general, the Township of Clarendon is represented by basement exposures of the Mount Holly complex that are flanked by Vermont Valley interbeds of dolomites, limestones, marbles, and quartzites which, in turn, are structurally covered by slates and some dolomitic phyllites of Taconic Mountain age along the western edge.

Best rock types for crushed rock aggregate are probably quartzites, dolomites, and marbles. Eight rock samples were taken in the township of which four were of quartzite outcrops, three were from marble quarries, and one was of dolomite. Wear tests averaged 3.4% and 10.2% for the quartzites and marbles respectively, and the dolomite tested at 2.6%. Elsewhere in the state (i.e. Township of Weathersfield) the Mount Holly gneiss has been considered for use as, but has not been recommended for a crushed rock aggregate, because of the frequency of local tendencies toward schistosity.

Procedure for Sand and Gravel Survey

The method employed by the Project in the survey of possible sources of sand and gravel for highway construction is divided into two main stages: office investigation and field investigation. The office investigation is conducted primarily during the winter months and comprises the mapping of possible potentially productive areas as indicated from various references. Of these references, the survey of glacial deposits mapped by Professor Stewart proves to be

valuable, particularly when used in conjunction with other references such as soil-type maps, aerial photographs, and United States Geological Survey quadrangles. The last two are used in recognizing and locating physiographic features which indicate glacial deposits and in studying drainage patterns. In addition, the location of existing pits when known are mapped. The locations in which samples were taken by other individuals are noted and mapped when possible.

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

Discussion of Sand and Gravel Sources

The granular materials of Clarendon township are principally of glacial origin.

Glaciofluvial deposits are limited to kamic materials in this area. A single kame is situated west of S.A. #2 about 1.5 miles south of its intersection with S.A. #3. Extensive kame moraine deposition covers most of the eastern one-tenth of the township, as well as the hillside area south and northwest of Chippenhook. Two kame terraces are within the township; one is located northeast of Chippenhook, and the other is west and southwest of Clarendon Springs.

Glaciolacustrine deposits comprise the remainder of the granular materials in the area. The Otter Creek floodplain is mainly covered with lake sands, but is also bordered in three places on the east by deltaic gravels.

- These are located
- (1) west of and including much of North Clarendon
 - (2) on S. A. #1 about 1.9 miles south of its intersection with Town Highway #13
 - (3) south of Clarendon Village at the Mill River bridge.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF CLARENDON

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

Glens Falls and Orwell Limestones Undifferentiated: are combined where deformation has made the thin-bedded Glens Falls indistinguishable from the thick-bedded Orwell; from West Rutland south may contain rocks as low as the Middlebury limestone.

Bascom Formation: is 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: is chiefly a white marble or gray limestone characterized by raised reticulate lines of gray dolomite on the weathered surface; includes Sutherland Falls marble, intermediate dolomite, and Columbian marble of the marble quarries.

Clarendon Springs Dolomite: is 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.

Danby Formation: is comprised of interbedded quartzite and dolomite; white quartzite beds, more than a foot thick, separated by 10 to 12 feet of dolomite in eastern areas increase westward to continuous sections of white- to pink-weathered, massively bedded Potsdam quartzite.

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

- Cheshire Quartzite: Is 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, it apparently grades southward into the Dalton Formation.
- Dalton Formation: Is schistose quartzite containing pebbles of feldspar and blue quartz; impure dolomite containing pebbles of quartz and feldspar occurs locally; conglomerate common near base. Occurs in southwestern Vermont.
- St. Catherine Formation: Is purple, gray-green, and variegated slate and phyllite containing minor interbeds of white to green quartzite, locally albitic.
- Breeze Formation: Is 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.
- Mt. Holly Complex: Is mainly fine-to medium-grained biotitic gneiss, locally muscovitic, and in western areas chloritic; massive and granitoid in some localities, fine-grained or schistose and compositionally layered in others; also abundant amphibolite and hornblende gneiss and minor beds of mica schist, quartzite and calc-silicate granulated; includes numerous small bodies of pegmatite and gneissoid granitic rock.

GLOSSARY OF SELECTED GEOLOGIC TERMS

<u>Basement Complex</u>	is the assemblage of metamorphic and igneous rocks underlying the stratified rocks in any particular region.
<u>Delta</u>	is material of a predominantly alluvial deposit built out by a stream into the sea or other body of water.
<u>Dolomite</u>	as a term used in this report, applies to rocks approximating the mineral dolomite in composition or consisting predominantly of dolomite. Dolomite is a mineral of definite chemical composition, $\text{CaMg}(\text{CO}_3)_2$; carbon dioxide 47.7%, calcium 30.4%, and magnesium 21.9%.
<u>Glaciofluvial</u>	is a term used to denote formation by or relation to streams within, upon, or emerging from glacial ice.
<u>Glaciolacustrine</u>	is a term used to denote formation by or pertaining to deposition in quiescent waters of glacial origin.
<u>Gneiss</u>	is a banded or foliated metamorphic rock with no special composition implied, having layers mineralogically unlike, and consisting of interlocking mineral particles mostly large enough to be visible to the eye. Usually gneiss tends to split along definite planes where tabular and schistose minerals predominate.
<u>Igneous Rock</u>	is one of the three great rock classes, that rock which has cooled and solidified from a hot, mobile solution of minerals, water, and gases, either deep beneath or at the surface of the earth.
<u>Interbeds</u>	occur between or lie adjacent and parallel to other beds usually of a different nature.
<u>Kame</u>	is a conical hill of stratified drift, deposited in contact with glacial ice by streams flowing in or on the ice.
<u>Kame Moraine</u>	is 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.
<u>Kame Terrace</u>	is an accumulation of stratified drift laid down by streams between a glacier and an adjacent valley wall.
<u>Limestone</u>	is a bedded sedimentary deposit consisting chiefly of calcium carbonate. It is the most important and widely distributed of the carbonate rocks. The percentage of calcium carbonate ranges from 40% to more than 90%. Common impurities are clay and sand.

- Marble is a granular crystalline rock made up of calcite or dolomite grains cemented or intergrown and interlocking by additional calcite.
- Metamorphic Rocks are rocks that owe their distinctive characters to the transformation of pre-existing rocks, either through intense heat or pressure or both.
- Phyllite is a fine-grained foliated metamorphic rock intermediate between the mica schists and slates, into which it may grade. The foliation is made possible by the development of a large amount of potash mica, sericite, which also gives the rock a distinctive silvery appearance.
- Quartzite is a compact metamorphic rock composed of quartz grains so firmly cemented that fracture takes place across them and cementing material with equal ease.
- Schistosity is the property of a foliated rock by which it can be split into thin layers or flakes. The property of splitting may be due to alternating layers of differing mineral composition or to preferred orientation and parallelism of cleavage planes of the mineral.
- Sedimentary Rocks are composed of sediment that are formed through the agency of water, wind, glacial ice, or organisms and are deposited at the surface of the earth.
- Slate is a very fine-grained homogeneous metamorphic rock which splits smoothly along parallel cleavage planes and yields roughly similar slabs.

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PARTIAL SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MATERIALS

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

Item 105, Granular Borrow:

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

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

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

Item 201, Sub-base of Gravel.

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

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

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

APPENDIX I
(cont'd.)

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

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

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

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

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

Item 202, Sub-base of Sand

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

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

Square Openings	Percent Passing
1½"	95-100
5/8"	80-100
No. 4	70-100
No. 100	0-18
No. 270	0-5

APPENDIX I
(cont'd.)

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

Item 204, Sub-base of Crushed Rock

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

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

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

Square Openings	Percent Passing
4"	95-100
1½"	25-50
No. 4	0-15

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

Item 205, Sub-base of Crushed Gravel

"Article 205.02 Materials.

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

APPENDIX I
(cont'd.)

a product uniformly graded from coarse to fine.

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

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

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

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

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

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

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

Table I

CLARENDON GRANULAR DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
1	1	1964	0.5-9	0-0.5	No	100	100	93.7	40.0	7.5	1	--	Gran. Borrow (Sand)	Owner: Ralph Pitts Two knolls 1.0 mile uphill, along woods road. Testhole #1 taken on right-hand knoll, on top. Knoll is approximately 75' by 100'. Material is pebbly sand, with a fine sand layer from 1'-6'. Largest of the pebbles-about 1" in diameter. Rejected for Item 202, Sub-base of Sand. Has excesses passing No. 100 and No. 270 mesh sieve. Accepted for Item 105, Granular Borrow.
	2	1964	0.5-9.5	0-0.5	No	100	96.1	92.7	61.0	32.0	2	--	--	Testhole #2 taken on knoll on left side of road. Material is fine sand and stones. Rejected for both Items, 202, Sub-base of Sand, and Item 105, Granular Borrow. Has excess of material passing No. 100 and No. 270 mesh sieves.
2	1	1964	0.5-9	0-0.5	Yes	100	95.8	85.7	17.0	2.5	2	--	Sand	Owner: Chet Carrara A large field with a small pit and knolls, west of cemetery and north of road. Testhole #1 taken in floor of pit, 200' north of abandoned house. Pit is 55' by 15'. Material is pebbly sand, with coarse sand in bottom. Acceptable for Item 202, Sub-base of Sand and Item 105, Granular Borrow.

*Percentage of Total Sample

Table I

CLARENDON 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					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	0.5-10	0-0.5	Yes	56.3	53.6	49.4	11.0	2.0	2	9.5%	Gravel	Testhole #2 taken on top of pit (10' east of face of pit). Represents pit face. Material is stones, with a coarse sand matrix. Acceptable for Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
	3	1964	0.5-10	0-0.5	No	100	100	92.7	38.0 35.2*	17.0 15.8*	1 1/2	--	--	Testhole #3 taken on knoll just west of cemetery, 275' north of Test #1. Material is pebbly sand (on the fine side). Rejected for Item 202, Sub-base of Sand and Item 105, Granular Borrow. Has excesses passing No. 100 and No. 270 mesh sieves.
	4	1964	1-7	0-1	No	100	100	66.8	40.0 26.7*	11.0 7.3*	1	--	--	Test #4 taken on small 'plateau', 425' west of cemetery. Material is silty sand and stones. Rejected for Item 202, Sub-base of Sand and Item 105, Granular Borrow. Has an excess passing No. 100 and No. 270 mesh sieves.
3	1	1964	0-9	Stripped	Yes	100	100	100	70.0	26.0	1	--	--	Owner: Willard Squires A pit and large field at junction of East Road and North Shrewsbury Road. Test #1 taken in floor of pit. Pit dimensions are 125' by 125'. Poor material, silt to clay, rejected for Item 105, Granular Borrow. Has large excess passing No. 270 mesh sieve.
	2	1964	1-9	0-1	No	92.1	85.8	74.4	9.0 6.7*	2.25 1.7*	3 1/2	--	Gran. Borrow (Sand)	Test #2 taken 130' south of pit under powerline. Material is stony sand, rejected for Item 202, Sub-base of Sand. Has excess

*Percentage of Total Sample

Table I

CLARENDON GRANULAR DATA SHEET NO. 3

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	3	1964	1-9.5	0-1	No	63.3	52.3	43.0	11.0	4.0 1.7*	3 1/2	14.9%	Gravel	passing 1 1/2" screen. Acceptable for Item 105, Granular Borrow. Test #3 taken at far west end of knoll, 265' southwest of pit face. Material is stony sand, acceptable for Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
	4	1964	1-9	0-1	No	57.4	39.2	33.0	12.0	4.0	3	21.4%	Gravel	Test #4 taken in field northwest of house, 90' north of Powerpole #93. Material is coarse gravel, acceptable for both Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
	5	1964	1-9	0-1	No	68.6	51.4	38.6	13.0	5.0	2	17.7%	Gravel	Test #5 taken at east end of field, 40' north of Powerpole #25. Material is gravel, hard clean stones in coarse clean sand matrix. Acceptable for both Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
4	1	1964	1-10	0-1	No	100	100	98.4	60.0 59.0*	31.0 30.5*	1	----	----	Owner: Mike Sheehe A large field west of Area #5 (Carrara's pit). Test #1 taken on knoll west of pits. Material is silty sand, apparently out of the gravel here. Rejected for both Item 202, Sub-base of Sand and Item 105, Granular Borrow. Has excesses passing No. 100 and No. 270 mesh sieves.

*Percentage of Total Sample

Table I

CLARENDON GRANULAR DATA SHEET NO. 4

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				
	2	1964	1-9	0-1	No	70.0	58.2	44.8	21.0	6.0	5+	17.6%	----	Test #2 taken in field, 330' north of Test #1. Extremely hard digging- very coarse gravel. Many stones over 1'. Rejected for Item 201 on gradation. Rejected for Item 105 on color.
	3	1964	1-8.5	0-1	No	100	90.4	84.0	25.0	9.0	2 1/2	----	Gran. Borrow	Test #3 taken in northwest corner of field. Material is a mixture of coarse sand, stones and silt. Bottom is clay, with water at 4.5'. Acceptable for Item 105, Granular Borrow.
5	1	1964	0-8	Stripped	Yes	72.9	63.2	50.2	5.0	2.0	1	20.6%	Gravel	Owner: Joseph P. Carrara An area of three pits off North Shrewsbury Road. Test #1 taken in floor of first pit on right-hand side of pit road. Pit is 40' by 60' in size, with a 15' face. Material is gravel to pebbly sand for 6", going into coarse sand from 6'-8". Acceptable for Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
	2A	1964	0-5	Stripped	Yes	64.5	54.9	48.2	5.0	2.25	2	----	Gran. Borrow (Grav.)	Test #2 taken in floor of "second" pit. Dimensions of pit are 150' by 175'. Material is sandy gravel, going into sand at 5'. Took 2 samples-Test #4 represents upper portion. Meets grading requirements, but not enough proper-sized stone for abra-

Table I

CLARENDON GRANULAR DATA SHEET NO. 5

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2B	1964	5-10	-----	Yes	100	100	97.9	8.0 7.8*	1.0 1.0*	1	-----	Sand	sion tests, for Item 105. Test #2 B represents lower, sand portion. Acceptable for Item 202, Sub-base of Sand and Item 105, Granular Borrow. Test #3 taken in west face of pit. 0-0.5'-overburden, 0.5-15' sandy gravel with bands of stone. Acceptable for Item 201, Sub-base of Gravel and Item 105, Granular Borrow. Test #4 taken in floor of "third" pit- (largest of the three). Dimensions are 150' by 255', with 20'-30' face all around pit. Material is sand and stones, with stony sand in bottom. Rejected for Item 202, Sub-base of sand. Has slight excess passing No. 270 mesh sieve. Acceptable for Item 105. Test #5 taken on "rise" in pit, 135' north of Test #4. Represents face of lower portion of pit. Beautiful coarse sand. Acceptable for Item 202, Sub-base of Sand and Item 105, Granular Borrow.
	3	1964	0.5-15	0-0.5	Yes	71.9	60.5	47.0	3.0	2.25	1	13.0%	Grav.	
	4	1964	0-9	Stripped	Yes	100	95.0	88.5	18.0 15.9*	6.0 5.3*	1	-----	Gran. Borrow (Sand)	
	5	1964	0.5-10	0-0.5	Yes	100	94.2	88.9	4.0 3.6*	1.5 1.3*	1	-----	Sand	
6	1	1964	1-9	0-1	No	100	100	77.2	40.0	12.0	1 1/2	-----	-----	Owner: Chet Carrara A large field east of Area # 7 pit. Test #1 taken 425' south of field road, 15' east of hedgerow. Material is silt and stones. Rejected for Item

*Percentage of Total Sample

Table I

CLARENDON GRANULAR DATA SHEET NO. 6

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														105. Has excess passing No. 270 mesh sieve.
7	1A	1964	0-4	Stripped	Yes	77.2	63.5	50.7	16.0 8.1*2.5*	5.0	1	----	Gran. Borrow	Owner: Chet Carrara A huge area of pits off No. Shrewsbury Road. Test #1 taken in small pit (75' by 100') at entrance to main pit, in floor. 0-4' fine sand and silt, 4'-7.5' coarse sand with stones, 7.5'-10' silt. Took 2 samples. Test #1A represents upper 4'. Acceptable for Item 105.
	1B	1964	4-8.5	----	Yes	68.9	57.1	44.9	15.0	5.0	1	6.5%	Gran. Borrow	Test #1B represents "gravel" portion. Rejected for Item (Grav.) 201. Has slight excess passing No. 270 mesh sieve. Acceptable for Item 105.
	2	1964	0.5-10	0-0.5	Yes	100	100	98.9	56.0 55.3*8.9*	9.0	1 1/2	----	Gran. Borrow (Sand)	Test #2 taken in face of small pit at entrance of main pit. Material is medium sand, rejected for Item 202. Has excess passing No. 100 and No. 270 mesh sieves. Acceptable for Item 105.
	3	1964	0-5.5	Stripped	Yes	94.6	88.8	77.0	30.0 23.1*5.8*	7.5	1	----	Gran. Borrow (Sand)	Test #3 taken in large upper pit, in the floor at north-east end. Pit is approximately 935' long (east-west). Material is fine sand to silt, rejected for Item 202. Has excess passing No. 100 and No. 270 mesh sieves. Acceptable for Item 105.
	4A	1964	0.5-10	0-0.5	Yes	78.8	73.3	67.0	6.0 4.0*0.8*	1.25	1 1/2	----	Gran. Borrow (Sand)	Test #4 taken in south face of pit. Test # 4A represents

*Percentage of Total Sample

Table I

CLARENDON GRANULAR DATA SHEET NO. 7

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHTO T-21	Abrasion AASHTO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	4B	1964	14-22	----	Yes	100	88.8	82.1	5.0 4.1*	2.5 2.1*	1	----	Sand	upper 10' of face-a pebbly sand to gravel, rejected for Item 202, Sub-base of Sand. Too little passing No. 4 Sieve. Acceptable for Item 105. Test #4B represents 14'-22' depth of face. Material is sand with stones, acceptable for Item 202, Sub-base of Sand and Item 105, Granular Borrow.
	5	1964	0-8	Stripped	Yes	100	88.8	80.6	24.0 19.3*	5.0 4.0*	1	----	Gran. Borrow	Test #5 taken in floor of pit at extreme southwest end, 55' east of west face. Material is sandy loam with stones, acceptable for Item 105, Granular Borrow.
	6	1964	0.5-10	0-0.5	Yes	74.0	69.7	62.4	10.0	2.0	1	----	Gran. Borrow	Test #6 taken in face of south-west extremity of pit. Material is sandy gravel, contains only 37.6% stone. Insufficient amount for Percent of Wear Test. Acceptable for Item 105.
	7A	1964	0-5.5	Stripped	Yes	56.8	45.1	38.0	50.0	18.5	3	----	----	Test #7A taken on top of pit at far northeast end. Material is gravelly, but excess passing No. 100 and No. 270 mesh sieves. Rejected for both Item 201, Sub-base of Gravel and Item 105, Granular Borrow.
	7B	1964	5.5-9.5	----	Yes	100	94.6	87.5	3.0 2.6*	1.5 1.3*	1	----	Sand	Test #7B represents lower portion of face-medium sand. Acceptable for Item 202,

*Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 8

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														Sub-base of Sand and Item 105, Granular Borrow.
8	1	1964	0-16	Stripped	Yes	55.8	45.4	41.2	36.0	10.0*	1	----	Gran. Borrow (Grav.)	Owner: Ray Boynton Property is east of house which is located on East Road 1.6 miles east and south of North Clarendon. Test #1 is sandy gravel in northwest face of pit in open field. Acceptable for Item 105.
	2	1964	0-6.5	Stripped	Yes	100	100	48.1	42.0	12.5*	1	----	----	Test #2 is floor sample of silt with stones. Rejected for Item 105.
	3	1964	0.5-9.5	0-0.5	No	100	98.1	91.6	36.6	3.5 3.2*	1 1/2	----	Gran. Borrow (Sand)	Test #3 is pebbly sand on center of long knoll east of house. Acceptable for Item 105.
	4	1964	1-9.5	0-1	No	100	100	82.6	57.0	9.0 7.4*	1	----	Gran. Borrow (Sand)	Test #4 is fine sand and stones on north end of same knoll. Acceptable for Item 105.
9	1	1964	0-20	Stripped	Yes	49.5	38.2	31.0	13.0	3.0	1	----	Gravel	Owner: Guido Carrara Pits are east of Boynton and northeast of Wilk Bros., on East Road in North Clarendon. Test #1 is sandy gravel in west face of pit. It meets grading requirements for Sub-base of Gravel-Item 201, but there was insufficient proper-size stone for percent of wear test.

* Percentage of Total Sample

TABLE I

CLARENDON 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
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	0-9	Stripped	Yes	100	100	74.8	15.7	5.0 3.7*	1	----	Sand	Test #2 is silt with stones in floor of same pit as Test #1. Acceptable for Item 202. Test #3 in floor of small pit up in woods east of first pit. It consists of silt with stones. Acceptable for Item 105.
	3	1964	1-8.5	Stripped	Yes	100	100	64.3	17.0	4.0*	1	----	Gran. Borrow	
10	1	1964	0.5-6.5	0-0.5	No	61.4	46.5	33.1	13.0	6.0*	3	15.0%	Gran. Borrow	Owner: Ray Boynton Property is in woods east of field for Area 8. Test #1 is coarse gravel on knoll. Acceptable for Item 105. Test #2 is sandy loam with stones. Between knolls in maple orchard. Item 105 is acceptable. Test #3, dirty gravel is on brow of northeast - (Grav.) southwest ridge across from maple orchard. Acceptable for Item 105. Test #4 is 400' northeast of Test #3 in same ridge (Grav.) is also dirty gravel. Acceptable for Item 105.
	2	1964	1-9.5	0-1	No	100	100	97.3	45.0	8.5*	1	----	Gran. Borrow	
	3	1964	1-10	0-1	No	62.1	47.3	30.6	21.0	5.0*	2	14.2%	Gran. Borrow	
	4	1964	1-10	0-1	No	64.9	52.7	41.6	30.0	10.0*	1 1/2	17.8%	Gran. Borrow	
11	1	1964	0-10	Stripped	Yes	100	100	74.9	12.0	4.25 3.2*	2	----	Sand	Owner: Wilk Bros. Paving Company Pits on East Road 1.9 miles south and east of North Clarendon. Test #1 is coarse sand with

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 10

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	0-9	Stripped	Yes	68.7	45.8	35.1	4.0	0.75	1	8.0%	Grav.	stones on top of knoll within 140' x 75' pit. Acceptable for Item 202.
	3	1964	0-9.5	Stripped	Yes	72.9	61.7	46.8	7.0	2.0	1 1/2	16.2%	Grav.	Test #2 is gravel in center of large pit area, east of paving plant. Acceptable for Item 201.
	4	1964	0-8	Stripped	Yes	65.9	44.6	26.8	6.0	3.0	1	9.8%	Grav.	Test #3 on top of bank at far east side of pit consists of gravel. Acceptable for Item 201.
	5	1964	0.5-2.0	0-0.5	Yes	62.2	45.9	34.1	7.0	2.5	3	16.2%	Grav.	Test #4 is gravel in small pit just south of mix plant on knoll paralleling East Road. Acceptable for Item 201.
	6	1964	1-4.5	0-1	Yes	52.6	38.8	29.7	21.0	8.5	2	18.0%	Gran. Borrow	Test #5 is gravel in east face of same small pit. Acceptable for Item 201.
														Test #6 is coarse gravel on high east - west knoll south of pit area. Acceptable for Item 105.
12	1	1964	0-9	Stripped	Yes	100	97.6	86.5	4.3	0.5 0.4*	1	-----	Sand	Owner: Guido Carrara Pit and property are west of paving plant on East Road 1.9 miles south and east of North Clarendon. Test #1 is pebbly sand at entrance of pit. Acceptable for Item 202.
	2	1964	0-12	Stripped	Yes	58.4	42.2	30.0	24.0	7.0	1	13.4%	Gran. Borrow	Test #2 is gravel in face of southeast corner of pit. Acceptable for Item 105.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET No. 11

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1½"	5/8"	#4	#100	#270				
	3	1964	0.5-10	0-0.5	No	92.5	79.7	64.6	6.0	4.0	2	15.0%	Gran. Borrow (Grav.)	Test #3 is sandy gravel on top of first knoll across road from paving plant entrance. Acceptable for Item 105.
	4	1964	1-9	0-1	No	100	98.9	94.2	26.4	5.0 4.7*	1	----	Gran. Borrow (Sand)	Test #4 is fine sand with stones on south end of knoll parallel to east road and across from paving plant. Acceptable for Item 105.
	5	1964	1-9	0-1	No	100	95.9	82.8	15.7	6.5 5.4*	1	----	Gran. Borrow (Sand)	Test #5 is pebbly sand on northeast end of same knoll, about 315 feet from Test # 4.
13	1	1964	0-10	Stripped	Yes	79.0	65.9	56.5	3.0	1.0 0.6*	1	16.2%	Grav.	Owner: Mrs. Burton Smith Pits and property are 2.6 miles east and south of North Clarendon on East Road. Test #1 is sandy gravel in floor of pit. Acceptable for Item 201.
	2	1964	0.5-23	0-0.5	Yes	64.9	52.9	42.6	3.0	1.0	2	17.1%	Grav.	Test #2 is sandy gravel in face of first pit on left when going east. Acceptable for Item 201.
	3A	1964	0.5-4.5	0-0.5	No	100	98.7	98.7	44.4	8.0 7.9*	1½	----	Gran. Borrow (Sand)	Test #3A is on knoll north of log house and consists of fine sand. Acceptable for Item 105.
	3B	1964	4.5-10	0-4.5	No	69.5	60.4	54.1	23.0	3.0 1.6*	3	----	Gran. Borrow (Grav.)	Test #3B is pebbly sand. Acceptable for Item 105.
						*Percentage of Total Sample								

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 12

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
14	1	1964	4-10	0-4	No	100	100	99.5	88.6	8.5	1	----	Gran. Borrow (Sand)	Owner: Russell Powers Area tested on property is 4 miles east and south of North Clarendon and east of railroad tracks. Test #1 is fine white sand 175 feet east of right of way. Acceptable for Item 105.
	2	1964	0.5-9	0-0.5	No	100	96.4	87.4	2.6	1.25 1.1*	2	----	Sand	Test #2 is sand on top of large knoll south of Test #1. Acceptable for Item 202.
	3A	1964	0.5-5	0-0.5	No	83.2	72.7	63.0	11.0	2.25	1½	----	Gran. Borrow- (Grav.)	Test #3A is sandy gravel on end of knoll 400 feet south of Test #2. Accept- able for Item 105.
	3B	1964	5-9.5	0-5	No	88.5	80.5	76.2	12.2	2.0 1.5*	2	----	Gran. Borrow (Sand)	Test #3B is uniform medium sand. Acceptable for Item 105.
	4	1964	4-10	Stripped	No	100	100	100	62.0	20.3	1	----	-----	Test #4 is fine sand to silt on knoll 50 feet south of Test #3. Rejected for Item 105.
	5	1964	0.5-11	0-0.5	No	100	100	99.5	96.5	29.0 28.9*	1	----	-----	Test #5 is fine sand to silt 340 feet south of Test #4. Rejected for Item 105.
15	1	1964	0-10	Stripped	Yes	100	100	98.5	77.8	14.3 14.1*	1	----	-----	Owner: Amherst Weeks Pit and property is south of S.A. #103, one-fourth mile west of junction with East Road in East Clarendon. Test #1 is fine sand to silt in floor of pit at

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 13

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passed VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1964	0.5-18	0-0.5	Yes	100	100	99.5	72.6	6.25 6.2*	1	----	Gran. Borrow	north end. Rejected for Item 105.
	3	1964	0.5-18	0-0.5	Yes	100	100	100	51.0	1.5	2½	----	(Sand)	Test #2 is fine sand in west face at north end of pit.
	4A	1964	1-5	0-1	No	82.5	71.9	58.0	9.0	2.0	2	9.8%	Gravel	Acceptable for Item 105. Test #3 is fine sand in west face at south end of pit.
	4B	1964	5-10	0-5	No	100	100	96.7	39.6	4.0 3.9*	1	----	(Sand)	Test #4A is sandy gravel north of pit in a clearing at end of logging road be- hind cemetery.
16	1	1964	1-10	0-1	No	100	100	95.4	20.0	2.25 2.1*	1	----	Gran. Borrow (Sand)	Acceptable for Item 201. Test 4B is medium sand. Acceptable for Item 105.
17	1	1964	0-10	Stripped	Yes	100	100	99.4	59.6	9.5 9.4*	1	----	Gran. Borrow (Sand)	Owner: Irene Hill Property is northeast of school on S.A. #103, 0.4 mile west of junction with East Road in East Clarendon. Test #1 is pebbly sand in center of field. Acceptable for Item 105.
	2A	1964	0.5-6	0-0.5	Yes	60.3	53.9	46.8	27.0	3.75	2	----	Gran. Borrow (Grav.)	Owner: Clayton Grover Pit and property off Sawmill Road in East Clarendon 0.3 - mile south and west of junc- tion with S.A. #103. Test #1 is sand in floor of pit at north end. Acceptable for Item 105. Test 2A is a sandy gravel in south face of pit

*Percentage of Total Sample

TABLE I

CLARENDON 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
						1 1/2"	5/8"	#4	#100	#270				
	2B	1964	6-17	0-6	Yes	100	100	100	99.0	18.5	1	---	----	Acceptable for Item 105.
	3	1964	0.5-10	0-0.5	Yes	100	100	96.4	33.7	2.5 2.4*	1	----	----	Test #2 B is fine Sand. Rejected for Item 105.
	4	1964	0-10	Stripped	Yes	81.6	71.0	62.9	4.4	1.75 1.1*	1 1/2	----	Gran. Borrow (Sand)	Test #3 is sand on terrace past south face of pit. Acceptable for Item 105. Test #4 is pebbly sand at far west end of pit on top of bank in stripped area. Acceptable for Item 105.
18	1	1964	0.5-10	0-0.5	No	100	100	97.3	75.9	21.0 20.4*	1	----	----	Owner: Amherst Weeks Property east of railroad tracks 0.1 mile north of S. A. #103 on East Road. Test #1 is fine sand to silt on knoll under NET & T Co., powerline 25 feet from railroad tracks. Rejected for Item 105.
	2	1964	0.5-10	0-0.5	No	100	100	100	92.0	19.0	2	----	----	Test #2 is fine sand on small knoll adjoining railroad - tracks just north of gate- way. Rejected for Item 105.
19	1	1964	0.5-2.5	0-0.5	No	57.5	42.2	29.8	21.0	4.25	1	9.0%	Gran. Borrow (Grav.)	Owner: Irene Hill Property on south side of Mill River across from East Clarendon sawmill. Test #1 is coarse gravel next to river. Acceptable for Item 105.
20	1	1964	0.5-10	0-0.5	No	82.1	68.6	48.0	7.0	2.75	1	17.2%	Grav.	Owner: David Knipes Property is on Town Highway #37, 0.6 mile southeast of

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 15

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	2A	1964	6.5-10.5	0-6.5	No	69.5	59.1	47.4	23.0	6.25	1	15.0%	Gran. Borrow (Grav.)	covered bridge in East Clarendon. Test #1 is coarse gravel in center of field south of house. Acceptable for 201. Test #2A is gravel at far west end of field. Acceptable for Item 105.
	2B	1964	0.5-6.5	0-0.5	No	100	100	100	80.0	16.0	1	----	----	Test #2B is sand. Rejected for Item 105.
	3A	1964	0.5-5	0-0.5	No	54.9	44.3	36.0	13.0	5.25	3	12.9%	Gran. Borrow (Grav.)	Test #3A is coarse gravel on top of knoll east of house. Acceptable for Item 105.
	3B	1964	5-10	0-5	No	100	100	96.9	26.2	2.25 2.2*	1	----	Gran. Borrow (Sand)	Test #3 B is medium sand. Acceptable for Item 105.
21	1	1964	0.5-9.5	0-0.5	No	100	94.5	79.4	4.0	1.75 1.4*	4	----	Gran. Borrow (Sand)	Owner: Warren Young Property and pits east of Town Highway #39, 0.5 mile south of covered bridge in East Clarendon. Test #1 is pebbly sand on top of knoll east of road at northwest corner of property. Acceptable for Item 105.
	2	1964	0.5-10	0-0.5	No	100	100	96.2	29.8	3.75 3.6*	1	----	Gran. Borrow (Sand)	Test #2 is medium sand at junction of dirt roads just west of sheds. Acceptable for Item 105.
	3	1964	0.5-10	0-0.5	Yes	100	100	100	25.0	2.8	1	----	Gran. Borrow (Sand)	Test #3 is fine sand to silt in floor of small pit on west edge of knoll behind buildings. Acceptable for Item 105.

* Percentage of Total Sample

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 16

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes MHD Spec.	Remarks
						% Passing								
						1½"	5/8"	#4	#100	#270				
	4	1964	2.5-10	0-2.5	No	100	97.6	85.1	2.6	0.75 0.6*	1½	----	Sand	Test #4 is pebbly sand on north slope of knoll south of powerline in hollow. Acceptable as Item 202.
	5A	1964	1-4.5	0-1	No	84.0	57.6	41.5	5.0	1.5	1	8.4%	Grav.	Test #5A is sandy gravel on top of large knoll south of dump-west of pit. Acceptable for Item 201.
	5B	1964	4.5-10	0-4.5	No	100	98.1	91.8	11.0	1.75 1.6*	1	----	Sand	Test #5 B is medium Sand. Acceptable for Item 202.
	6	1964	0.5-10	0-0.5	No	100	96.0	93.5	57.0	7.5 7.0*	1	----	Gran. Borrow (Sand)	Test #6 is fine sand on edge of knoll 155 feet northwest of second pit. Acceptable for Item 105.
	7	1964	0.5-9	0-0.5	Yes	100	100	97.6	28.3	3.25 3.2*	1	----	Gran. Borrow (Sand)	Test #7 is medium to fine sand at northwest corner of main pit area on top of an old pit. Acceptable for Item 105.
	8	1964	0.5-10	0-0.5	No	100	100	95.3	44.9	6.0 5.7*	1½	----	Gran. Borrow (Sand)	Test #8 is medium sand on small knoll north of pit at edge of clearing. Acceptable for Item 105.
	9	1964	0.5-7	0-0.5	No	100	100	96.8	25.2	2.0 1.9*	1½	----	Gran. Borrow (Sand)	Test #9 is medium sand at end of small knoll south of Knipes house and east of Town dump. Acceptable for Item 105.
	10	1964	0.5-10	0-0.5	No	100	100	95.1	28.5	1.0	2	----	Gran. Borrow (Sand)	Test #10 is medium sand at northeast end of knoll west of heavily wooded area south of Knipes field. Acceptable for Item 105.
	11	1964	0.5-9	0-0.5	No	94.4	85.9	53.2	8.0	3.0	3	----	Gran. Borrow (Gravel)	Test #11 is sandy gravel
* Percentage of Total Sample														

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 17

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				
	12A	1964	0.5-4.5	0-0.5	No	97.6	86.3	70.8	2.1	1.0 0.7*	3	----	Sand	at southwest corner of main knoll. Accept. Item 105. Test #12A is sand about 175 feet northeast of Test #11.
	12B	1964	4.5-9.5	0-4.5	No	100	100	90.9	13.6	2.0 1.8*	1	----	Sand	Acceptable for Item 202. Test #12 B is fine sand. Acceptable for Item 202.
22	1	1964	1-8	0-1	No	100	100	96.2	57.0	13.0	2	----	----	Owner: Bernard Spencer Property is east of Town Highway #39, 1.3 miles south of Town Highway #26. Test #1 is silt with stones on small knoll south of powerline, east of Spencer house. Rejected for Item 105.
23	1	1964	0.5-8	0-0.5	No	100	100	100	58.0	15.0	1	----	----	Owner: Laura Johnson Property on Otter Creek Road 1.8 miles south of Walker Mountain Road. Test #1 is on knoll 525 feet west of road and 125 feet south of fence. Rejected for Item 105.
	2	1964	0.5-8	0-0.5	No	100	100	100	90.0	50.25	1	----	----	Test #2 is on knoll at south end of pasture by maple tree. Rejected for Item 105.
	3	1964	1-16.5	0-1	Yes	63.8	52.4	31.7	6.0	4.0	1 1/2	12.2%	Gravel	Test #3 is gravel in floor of small pit at south end of knoll. Acceptable for Item 201.
	4	1964	1-8	0-1	Yes	68.7	53.4	40.3	3.0	1.75	1	9.0%	Gravel	Test #4 is gravel south

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 18

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	5	1964	0.5-8.5	0-0.5	No	100	100	100	79.0	22.0	1	----	----	of Test #3 in same pit. Acceptable for Item 201. Test #5 is silt on knoll on east side of road, across from Test #3, and Test #4.
	6	1964	0.5-10	0-0.5	Yes	100	100	100	68.0	16.0	1	----	-----	Rejected for Item 105. Test #6 is silt to clay in floor of small pit behind house. Rejected for Item 105.
24	1	1964	1.5-8	0-1.5	No	47.2	39.0	33.0	39.0	10.0	1	----	Gran.	Owner: Russell Powers Borrow Property contains gravel (Grav.) bar in Clarendon Flats about 0.4 mile south on U.S. Route 7 from inter- section with Town Highway #25. Test #1 is coarse gravel on bank of dry stream between high railroad bridge and grade crossing. Acceptable for Item 105.
	2	1964	1-9	0-1	Yes	45.6	33.7	25.3	7.0	2.5	1	14.8%	Gravel	Test #2 is coarse gravel in face of small pit about 150 feet south of grade crossing and west of tracks. Acceptable for Item 201.
	3	1964	0.5-6	0-0.5	No	38.6	32.5	22.0	7.0	2.0	1	4.4%	Gravel	Test #3 is coarse gravel in old stream channel southwest of high rail- road trestle. Acceptable for Item 201.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 19

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	4	1964	3-10	0-3	No	75.9	59.7	41.5	10.0	2.5	2	5.4%	Gravel	Test #4 is sandy gravel at northeast end of 'island' between present stream bed and abandoned channel. Acceptable for Item 201.
	5	1964	2.5-8.5	0-2.5	No	52.5	39.0	27.2	10.0	2.5	1	4.8%	Gravel	Test #5 is coarse gravel on 'island' at southwest end. Acceptable for Item 201.
	6	1958	1-6	0-1	No	41.0	30.6	22.8	10.0	4.0	2	11.0%	Gravel	Test #6 was a hand shovel sample of 'river bar' at confluence of Mill River and Otter River. There were numerous cobblestones in the sample, Acceptable for Item 201.
25	1	1964	0.5-6	0-0.5	Yes	100	100	98.2	86.0	47.0	1	----	----	Owner: Congdon Bros. property. Contains a small pit west of S.A. #2, 0.3 mile south of S.A. #3 intersection in Clarendon Flats. Test #1 is silt to clay in floor of pit. Rejected for Item 105.
26	1	1964	0.5-9	0-0.5	Yes	100	100	58.6	39.0	8.25	1	----	Gran. Borrow	Owner: Cecil Ingalls Property contains a small pit south of S.A. #3 0.2 mile west of S.A. #2 intersection. Test #1 is silt with stones in floor of pit. Acceptable for Item 105.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 20

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion Passes		Remarks
						% Passing						AASHO T-4-35	VHD Spec.	
						1½"	5/8"	#4	#100	#270				
														Test #2 is in north face of pit. Rejected for Item 105.
27	1	1964	1-9	0-1	No	100	100	51.6	44.0	14.0	1	-----	-----	Owner: Zigmont Grabowski Property is located west of S.A. #2 about 0.3 mile north of intersection with S.A. #3. Test #1 is silt with stones on top of knoll, about 400 feet from S.A. #2 behind barn. Rejected for Item 105.
	2	1964	1-10	0-1	No	100	100	100	99.0	45.0	1	-----	-----	Test #2 is fine sand on top of knoll about 120 feet from S.A. #2 south of house. Rejected for Item 105.
28	1	1964	1-9	0-1	Yes	100	100	88.5	44.0	13.0	1	-----	-----	Owner: Cecile Ingalls Pit is located west of S.A. #1 about 0.2 mile north of intersection with S.A. #3. Test #1 is silt with stones on top of knoll 75 feet from road at sharp bend. Rejected for Item 105.
29	1	1964	1-8	0-1	Yes	100	100	59.8	58.0	13.0	1	-----	-----	Owner: Charles Powers Pit is east of U.S. Route 7 about 2.9 miles south of intersection with Town Highway #14. Test #1 is silt and stones

* Percentage of Total Sample

* Percentage of Total Sample

TABLE I

CLARENDON GEANULAR DATA SHEET NO. 21

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-8	0-1	Yes	100	100	65.6	33.0	7.5	1	----	Gran. Borrow	in floor of pit near south end. Rejected for Item 105. Test #2 is silt and stones on orchard side of pit northeast of Test #1. Accept. for Item 105.
30	1	1964	1-10	0-1	No	100	100	100	30.0	6.5	1 1/2	----	Gran. Borrow (Sand)	Owner: William Herrick Property lies east of S.A. #2 about 0.65 mile north of intersection with S.A. #3. Test #1 is fine sand on terrace like feature 1125 feet from road. Acceptable for Item 105.
	2	1964	1-10	0-1	No	100	100	100	89.7	45.4	4 1/2	----	----	Test #2 is silt about 300 feet from road across from large ledge. Rejected for Item 105.
	3	1964	1-10	0-1	No	100	100	100	62.0	8.0	1	----	Gran. Borrow (Sand)	Test #3 is medium sand about 120 feet from road across from large ledge. Acceptable for Item 105.
	4	1964	1-10	0-1	No	100	100	100	44.0	10.0*		----	Gran. Borrow (Sand)	Test #4 is sand on east end of terrace 325 feet from road behind building. Acceptable for Item 105.
	5	1964	1-10	0-1	No	100	95.9	85.2	26.4	6.25 5.3*	2	----	Gran. Borrow (Sand)	Test #5 is sand at south end of terrace 135 feet from road behind Herrick Residence. Acceptable for Item 105.
31	1	1964	0-10	Stripped	Yes	100	100	100	88.0	17.0*		----	----	Owner: Carroll Ketchum Pit and property west of S.A. #1 about 1.0 mile

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 22

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														north of intersection with S.A. #3. Test #1 is silty sand in floor of small pit by railroad tracks. Rejected for Item 105.
	2	1964	0-12	Stripped	Yes	100	100	99.1	19.8	3.0	1	----	Gran. Borrow	Test #2 is sand from east face of small pit. (Sand) Acceptable for Item 105.
	3	1964	0.5-10	0-0.5	No	100	100	97.8	33.3	8.0 7.8*	3	----	Gran. Borrow	Test #3 is sand on small knoll across railroad tracks from pit. (Sand) Acceptable for Item 105.
	4	1964	1-9	0-1	No	100	100	58.8	29.0	11.0	1	----	-----	Test #4 is silt with stones on top of knoll 525 feet west of road behind Ketchum House. Rejected for Item 105.
32	1	1964	1-9	0-1	No	71.9	55.9	42.3	23.0	8.25	3 1/2	11.2%	Gran. Borrow (Grav.)	Owner: Elizabeth Caulkins Property is west of S.A. #2 about 1.2 miles north of intersection with S.A. #3. Test #1 is sandy gravel in old orchard 420 feet west of road. Acceptable for Item 105.
33	1	1964	1.5-9.5	0-1.5	No	100	100	94.2	68.0	20.0	2 1/2	----	----	Owner: George Squire Property is west of S.A. #1 about 1.3 miles south of Town Highway #14. Test #1 is silt 210 feet from road behind house. Rejected for Item 105.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 23

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
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-10	0-1	No	100	100	100	32.0	3.0*	2	----	Gran. Borrow (Sand)	Test #2 is sand on south end of terrace 540 feet southwest of Test #1. Acceptable for Item 105.
	3	1964	1-10	0-1	No	100	100	100	51.0	3.8*	1 1/2	----	Gran. Borrow (Sand)	Test #3 is fine sand on northwest end of terrace 165 feet from railroad tracks. Acceptable for Item 105.
34	1	1964	1-6	0-1	No	44.4	38.8	29.7	22.0	7.0*	3	----	Gran. Borrow (Grav.)	Owner: Wayne Adams Property is east of S.A. #1 about 1.15 miles south of Town Highway #14. Test #1 is coarse gravel on small knoll near small pit 60 feet from road opposite barn. Acceptable for Item 105.
35	1	1964	1-9.5	0-1	No	100	100	48.7	42.0	7.5*	1	-----	Gran. Borrow	Owner: Lendon Wilder Property is east of S.A. #1 about 0.95 mile south of Town Highway #14. Test #1 is silt with Stones on top of large knoll 1,725 feet east of Road. Acceptable for Item 105.
36	1	1964	1-10	0-1	No	100	100	100	61.0	5.3*	2	----	Gran. Borrow (Sand)	Owner: Milton Squires Property is west of S.A. #1 about 0.85 mile south of Town Highway #14. Test #1 is fine sand on knoll 50 feet west of railroad tracks.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 24

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-9	0-1	No	100	100	100	55.0	6.5*	2	----	Gran. Borrow (Sand)	Acceptable for Item 105. Test #2 is fine sand at north end of terrace 270 feet east of railroad tracks. Acceptable for Item 105.
37	1	1964	1-10	0-1	Yes	100	93.7	81.1	28.4	6.0 4.9*	1	----	Gran. Borrow (Sand)	Owner: Paul Austin Pit is on Horton Road 0.6 mile west of S.A. #2. Test #1 is stony sand 20 feet north of pit. Acceptable for Item 105.
38	1	1964	1-5	0-1	No	100	100	100	60.0	14.0	1	----	----	Owner: John Gilman Property is east of S.A. #1 about 0.65 mile south of Town Highway #14. Test #1 is silt on high, stoneless knoll about 1500 feet from road. Rejected for Item 105.
39	1	1964	1-8	0-1	No	100	100	92.4	14.0	6.0 5.5*	5	----	----	Owner: John and Richard Pratt Property is north of Town Highway #13 and east of Otter Creek. Test #1 was rejected for Granular Borrow. Specifi- cations because of high color value. Rejected for Item 105.
40	1	1964	1-9	0-1	Yes	100	100	62.5	31.3	18.0 11.3*	1 1/2	----	----	Owner: Ray Nutting Pit is 300 feet west of

* Percentage of Total Sample

* Percentage of Total Sample

TABLE I

CLARENDON 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					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														intersection of North Shrewsbury Road with U.S. Route 7. Test #1 was dirty sand with stones on knoll 95 feet west of face. Rejected for Item 105.
41	1	1964	0.5-7	0-0.5	No	100	100	70.2	33.7	12.0 8.4*	4	----	----	Owner: Guido Accorsi Property is east of U.S. Route 7 at point 0.2 mile north of intersection with North Shrewsbury Road. Test #1 is fine sand and stones located 800 feet east of the road and 125 feet south of Cold River. Rejected for Item 105.
	2	1964	0.5-7	0-0.5	No	60.4	51.8	45.2	38.0	10.0 4.5*	3 1/2	7.1%	Gran.	Test #2 is sand and stones Borrow in southeast corner of (Grav.) property with poplars, birches, alders. Acceptable for Item 105.
	3	1964	0-9	Stripped	Yes	62.2	46.0	34.9	12.0	4.0 1.4*	5	5.6%	---	Test #3 is coarse sand and stones immediately behind house and 340 feet from road. Test #3 was rejected for specifications because of high color value. Rejected for Item 105.
42	1	1964	0.5-6.5	0-0.5	No	34.3	28.4	21.8	11.0	2.25	3 1/2	----	Gran.	Owner: Charles Ruane Borrow Property is west of S.A. (Grav.) #1 and 0.5 mile north of intersection with Town Highway #13.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 26

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	0.5-7.5	0-0.5	No	30.8	23.6	17.5	10.0	3.0	3 1/2	6.4%	Gravel	Test #1 is very coarse gravel in small pasture bordering Cold River, and 145 feet east of railroad tracks. Acceptable for Item 105.
	3	1964	0.5-7.5	0-0.5	No	39.5	32.0	21.6	15.0	5.0	3 1/2	7.0%	Gravel	Test #2 is coarse gravel in pasture 55 feet east of railroad track and 30 feet north of river. Acceptable for Item 201. Test #3 is coarse gravel 250 feet west of tracks and 35 feet north of river escarpment. Acceptable for Item 201.
43	1	1964	1-8	0-1	No	100	100	96.7	34.8	0.5*	1	----	Gran. Borrow (Sand)	Owner: Robert Chapman Property is east of S.A. #133 and 3.2 miles north of intersection of S.A. #3 and Town Highway #20 Test #1 is silt with stones in small field 45 feet east of road at point 580 feet north of Clarendon River crossing. Acceptable for Item 105.
	2	1964	1-7	0-1	No	100	100	59.6	58.0	23.0	1	----	----	Test #2 is silt with stones on top of large knoll east of Chapman farm across the Clarendon River. Rejected for Item 105.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 27

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Overburden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	3	1964	1-7	0-1	No	81.4	63.6	41.3	13.0	6.0	3 1/2	23.6 %	Gran.	Test #3 is dirty gravel Borrow on lower ledge of knoll (Grav.) 125 feet west of rock wall. Acceptable for Item 105.
	4	1964	1-8.5	0-1	No	78.6	58.0	41.2	15.0	3.0	1	24.9%	Gravel	Test #4 is dirty coarse gravel at south end of large knoll on terrace-just north of rock wall. Acceptable for Item 201.
	5	1964	3.5-8	0-3.5	No	68.6	53.0	30.4	6.0	3.0	1	26.0%	Gran.	Test #5 is gravel lies Borrow 75 feet east of the (Grav.) Clarendon River behind the Crossman house. Acceptable for Item 105.
44	1	1964	0-10	Stripped	Yes	74.2	64.0	45.7	18.0	2.25	1	12.6%	Gran.	Owner: Carl Ojala Borrow Pit is west of S.A. #3 (Grav.) and 2.0 miles north of intersection with Town Highway #20. Test #1 is gravel on floor at far west end of pit. Acceptable for Item 105.
	2	1964	0-25	Stripped	Yes	90.8	77.8	52.1	12.0	2.0	1	18.1%	Gravel	Test #2 is gravel in south face of far west end of pit. Acceptable for Item 201.
45	1	1964	0-12	Stripped	Yes	100	100	99.5	57.7	9.0*	1 1/2	----	Gran.	Owner: Ed. Laliberte Borrow Pit is west of S.A. #3 (Sand) and 1.75 miles north of intersection with Town Highway #20. Test #1 is sand in south face of small pit behind large brick house.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 28

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
														Acceptable for Item 105.
46	1	1964	0-10	Stripped	Yes	82.7	66.7	41.5	9.0	1.0	1	8.9%	Gravel	Owner: Carl Lanfear Pit is west of S.A. #3 and 1.3 miles north of intersection with Town Highway #20. Test #1 is gravel in floor of far south end of pit. Acceptable for Item 201.
	2	1964	0-10	Stripped	Yes	89.3	74.3	47.5	9.0	1.0	1	11.5%	Gravel	Test #2 is gravel in floor of pit at north near en- trance. Acceptable for Item 201.
	3	1964	0-10	Stripped	Yes	89.3	77.1	54.1	12.0	3.0	1	13.5%	Gravel	Test #3 is coarse gravel in floor of center of pit. Acceptable for Item 201.
	4	1964	0-12	Stripped	Yes	72.7	48.7	35.8	14.0	4.0	1	14.2%	Gravel	Test #4 is gravel in face of pit at south end. Acceptable for Item 201.
47	1	1964	1-6	0-1	No	100	100	68.8	34.0	8.0	2	----	Gran. Borrow	Owner: Percy Tier Property is at end of gravel road which inter- sects S.A. #3 1.2 miles north of junction with Town Highway #20. Test #1 is silt with stones in pasture east of barn and south of gravel road. Acceptable for Item 105.
48	1	1964	1-9	0-1	Yes	100	100	68.9	33.0	8.0	1 1/2	----	Gran. Borrow (Sand)	Owner: Allen Hires Property is on S.A. #3 about 0.6 mile north of junction with Town Highway

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 29

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VMD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-9	0-1	No	100	100	82.1	14.8	1.0 0.8*	1	----	Sand	No. 20. Test #1 is silt with stones on knoll on east side of road under powerline. Acceptable for Item 105. Test #2 is silt with stones on large knoll west of building and between powerlines and south end of pasture. Acceptable for 202.
49	1	1964	1-5	0-1	No	100	100	79.7	54.0	25.0	1	----	----	Owner: James Tiraboschi Property is west of S.A. #3 and 0.65 mile north of intersection with Town Highway #20. Test #1 is silt with stones in large field behind house and barn and 415 feet west of road. Rejected for Item 105.
50	1	1964	1-8.5	0-1	No	100	100	82.5	14.9	4.0 3.3*	1 1/2	----	Sand	Owner: Morris Kroffsik Property is east of Town Highway #9 about 1.0 mile north of intersection with S.A. #3. Test #1 is silt with stones on a very high knoll 500 feet north of Kroffsik Camp and 140 feet from Road. Acceptable for Item 202.
51	1	1964	0-8	Stripped	Yes	83.3	74.8	57.5	9.0	3.0	1	5.1%	Gravel	Owner: Cari Lanfear

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 30

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 Soec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	1-10	0-1	Yes	87.4	78.6	60.7	13.0	5.0	1 1/2	----	----	Pit is north of Town Highway #20 and 0.2 mile west of S.A. #3. Test #1 is sandy gravel in floor of pit. Acceptable for Item 201. Test #2 is dirty gravel on east side of pit. Rejected for Item 105.
52	1	1964	0.5-4.5	0-0.5	Yes	100	100	71.8	37.0	14.0	1	----	----	Owner: Francis McClellan Pit and property are north of S.A. #3 and about 1/4 mile west of intersection with Town Highway #9. Test #1 is silt with stones in floor of very small pit northeast of cemetery. Rejected for Item 105.
	2	1964	0.5-6	0-0.5	No	100	100	58.6	11.7	6.0 3.5*	1 1/2	----	Gran.	Test #2 is sandy silt with stones in center of maple grove in junk yard about 1000 feet north west of Test #1. Acceptable for Item 105.
53	1	1964	1-10	0-1	No	80.0	64.3	47.9	14.0	3.0	1 1/2	29.8%	Gran.	Owner: Mrs. Francis Colvin Borrow Property is in Chippenhook (Grav.) south of Town Highway #10 and east of S.A. #3. Test #1 is sandy gravel 305 feet south of S.A. #10 and 125 feet east of S.A. #3.

* Percentage of Total Sample

TABLE I CLARENDON GRANULAR DATA SHEET NO. 31

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	% Passing 5/8" #4	#100	#270					
	2	1964	1-10	0-1	No	75.5	65.4	50.2	8.0	4.0	1½	26.2%	Gran. Borrow (Grav.)	Acceptable for Item 105. Test #2 is sandy gravel located 210 feet south of Test #1. Acceptable for Item 105.
54	1	1964	0.5-4	0-0.5	Yes	87.4	79.6	43.4	8.0	4.0	1	----	Gran. Borrow (Grav.)	Owner: Elmer Parker Pit and property are south of S.A. #3 and west of Town Highway #11 in Chippenhook. Test #1 is gravel in floor of small pit 365 feet south of S.A. #3. Acceptable for Item 105.
	2	1964	1-10	0-1	No	78.1	65.1	46.7	10.0	4.0	2½	23.0%	Gravel	Test #2 is sandy gravel about 80 feet south of pit and 10 feet north of rock wall. Acceptable for Item 201.
55	1	1964	0.5-11	0-0.5	No	70.8	67.1	54.9	20.0	7.0	1	----	Gran. Borrow (Grav.)	Owner: Steve Shimko Property is north of Town Highway #24 and west of S.A. #3 in Chippen- hook. Test #1 is sandy gravel on knoll southwest of house. Acceptable for Item 105.
	2A	1964	0.5-5	0-0.5	No	65.9	49.1	38.3	11.0	4.0	1	17.2%	Gravel	Test #2A is sandy gravel 120 feet back of house. Acceptable for Item 201.
	2B	1964	5-10	0-5	No	94.4	94.4	88.8	47.1	5.0 4.4*	1	----	Gran. Borrow (Sand)	Test #2B is fine sand. Acceptable for Item 105.
* Percentage of Total Sample														

* Percentage of Total Sample

TABLE I

CLARENDON 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					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8" #4	#100	#270					
	3	1964	1-9	0-1	No	77.5	66.2	52.2	48.0	17.0	1	----	----	Test #3 is silt and stones on knoll north of cemetery along Town Highway #22. Rejected for Item 105.
56	1	1964	0-6	Stripped	No	100	100	65.7	24.0	3.0	1	----	Gran. Borrow (Grav.)	Owner: Ruth Ewing Property is north of Town Highway #24 and east of Town Highway #22 in Chippenhook. Test #1 is sandy gravel 95 feet north of entrance to Keyes Pit and 90 feet south of power-line. Acceptable for Item 105.
	2A	1964	0.5-4	0-0.5	No	94.7	83.0	58.9	12.0	5.0	1	----	Gran. Borrow (Grav.)	Test #2A is sandy gravel on top of knoll 80 feet north of power line. Acceptable for Item 105.
	2B	1964	4-8	0-4	No	100	100	95.1	23.8	5.0 4.8*	1	----	Gran. Borrow (Sand)	Test #2B is coarse sand on top of same knoll as Test 2A. Rejected for Item 105.
57	1	1964	0-10	Stripped	Yes	86.9	76.1	57.1	11.0	3.0	1	15.0%	Gravel	Owner: Daniel Keyes Pits are south of Town Highway #24 about 1/4 mile west of intersection with Town Highway #22. Test #1 is gravel in floor of pit at far northeast corner. Acceptable for Item 201.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 33

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
	2	1964	0-10	Stripped	Yes	100	100	87.2	51.4	26.0 22.7*	1	----	----	Test #2 is sandy gravel in floor of northeast end of pit at west side of entrance.
	3	1964	0-10	Stripped	Yes	100	100	99.6	33.9	9.0 8.9*	1	----	Gran. Borrow (Sand)	Rejected for Item 105. Test #3 is fine sand with silt to stones in floor 80 feet from west face.
	4	1964	0-7	Stripped	Yes	72.6	44.2	19.6	6.0	4.0	1	13.6%	Gravel	Acceptable for Item 105. Test #4 is gravel in floor of far southeast corner.
	5	1964	0-10	Stripped	Yes	100	100	97.4	39.0	14.0 13.6*	1	----	----	Acceptable for Item 201. Test #5 is sandy silt 30 feet from face south-east of main pit. Rejected for Item 105.
58	1	1964	1-9	0-1	No	100	100	85.4	33.3	9.0 7.7*	1 1/2	----	Gran. Borrow (Sand)	Owner: James Lawrence, Fred Lawrence, and Edwin Machia
	2A	1964	1-4.5	0-1	No	88.2	65.4	51.3	8.0	3.0 1.5*	1 1/2	21.8%	Gravel	Pit and property are near intersection of S.A. #3 with Town Highway #11 in Chippenhook. Test #1 is silty sand 150 feet north of intersection. Acceptable for Item 105. Test #2A is pebbly sand on knoll 290 feet south of S.A. #3 and 225 feet west of fence behind buildings. Acceptable for Item 201.

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 34

Map Odemt. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	Sieve Analysis					Color AASHO T-2!	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						% Passing								
						1 1/2"	5/8"	#4	#100	#270				
	2B	1964	4.5-10	0-4.5	No	100	100	99.6	85.7	22.5 22.4*	1	----	----	Test 2B is silty sand. Rejected for Item 105.
	3	1964	1-10	0-1	Yes	91.9	76.7	62.3	8.0	2.0	1	18.8%	Gran. Borrow (Grav.)	Test #3 is gravel 550 feet south of Test #2 and 40 feet west of old barn. Two abandoned pits are west and north of this Test. Acceptable for Item 105.
59	1	1964	1-10	0-1	No	100	100	100	81.0	21.0*	1	----	----	Owner: James Lawrence, Fred Lawrence and Edwin Machia Pit and property are on S.A. #3 and 0.3 mile east of intersection with Town Highway #11. Test #1 is silty sand on second knoll east of Walker House. Rejected for Item 105.
	2	1964	1-10	0-1	Yes	100	100	100	88.0	31.0*	1	----	----	Test #2 is silt in floor of small pit on top of knoll north of road. Rejected for Item 105.
	3	1964	1-9.5	0-1	No	100	100	99.3	18.9	2.75 2.73*	1 1/2	----	Gran. Borrow (Sand)	Test #3 is sand northeast of Test #2, 710 feet north of road and 85 feet south of woods. Acceptable for Item 105.
60	1A	1964	0-10	Stripped	No	93.7	69.1	27.5	22.0	11.0	1	12.8%	----	Owner: Thomas LaVictorie Property and pits are east of Town Highway #22, 1.4 miles south of inter- section with S.A. #3.

* Percentage of Total Sample

* Percentage of Total Sample

TABLE I

CLARENDON GRANULAR DATA SHEET NO. 35

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (ft)	Exist- ing Pit	Sieve Analysis					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1 1/2"	5/8"	#4	#100	#270				
60 Continued														Test #1A is gravel on west side of knoll 1250 feet from road. Rejected for Item 105.
	1B	1964	10-12	0-10	No	93.7	83.4	56.6	16.0	6.5	1 1/2	----	Gran.	Test #1B is sandy gravel.
	2	1964	0-6	Stripped	Yes	100	100	92.6	6.5	2.0 1.9*	1	----	Gran.	(Grav.) Accepted for Item 105.
	3A	1964	0.5-13	0-0.5	Yes	94.2	77.7	47.2	4.0	2.0	1	14.0%	Gravel	Test #2 is medium to coarse sand in pit southwest of Test #1. Acceptable for Item 202.
	3B	1964	13-21	0-13	Yes	100	100	100	5.0	1.5*	1	----	Sand	Test #3A is sandy gravel in face of small pit southeast of Test #2. Acceptable for Item 201.
	4	1964	0-10	Stripped	Yes	100	100	61.3	14.7	5.0 3.1*	1	----	Gran.	Test #3B is coarse sand. Acceptable for Item 202.
	5	1964	1-9	0-1	Yes	100	98.2	76.3	7.6	4.0 3.1	2	----	Borrow (Sand)	Test #4 is silty sand with stones in floor of pit. Acceptable for Item 105.
														Test #5 is coarse sand on top of small pit about 500 feet north of Test #2. Acceptable for Item 201.
						* Percentage of Total Sample								

CLARENDON PROPERTY OWNERS - GRANULAR

TABLE I
Supplement

Map Ident. No.

Accorsi, Guido	41
Adams, Wayne	34
Austin, Paul	37
Boynton, Ray	8, 10
Carrara, Chet	2, 6, 7
Carrara, Guido	9, 12
Carrara, Joseph P.	5
Caulkins, Elizabeth	32
Chapman, Robert	43
Colvin, Francis (Mrs.)	53
Congdon Brothers	25
Ewing, Ruth	56
Gilman, John	38
Grabowski, Zigmont	27
Grover, Clayton	17
Herrick, William	30
Hill, Irene	16, 19
Hires, Allen	48
Ingalls, Cecil	26
Johnson, Laura	23
Ketchum, Carroll	31
Keyes, Daniel	37
Knipes, David	20
Kroffsik, Morris	50
Laliberte, Ed	45
Lanfear, Carl	46, 51
LaVictorie, Thomas	60
Lawrence, Fred	58, 59
Lawrence, James	58, 59
Machia, Erwin	58, 59
McLellan, Francis	52
Nutting, Ray	40
Ojala, Carl	44
Parker, Elmer	54
Pitts, Ralph	1
Powers, Charles	29

-Continued-

PROPERTY
OWNERS

Map Ident. No.

Powers, Russell	14, 24
Pratt, John H.	39
Pratt, Richard H.	39
 Ruane, Charles	 42
 Sheehe, Michael	 4
Shimko, Steve	55
Smith, Burton (Mrs.)	13
Spencer, Bernard F.	22
Squires, George	33
Squires, Milton	36
Squires, Willard	3
 Tier, Percy	 47
Tiraboschi, James	49
 Weeks, Amerst	 15
Wilder, Lendon	35
Wilk Brothers Paving Company (Lessee)	11
Young, Warren	21

CLARENDON ROCK DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Exist- ing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
1	1	1964	Marble	Yes	Chip	10.2%	Owner: Robert Chapman (formerly Georgia Marble Company Quarry). This is an abandoned quarry of dark gray marble with black veins. Rock is marble, with many inclusions of Hortonville slate. Apparently the presence of slate was a big factor in closing down operations. Quarry face is 25'-30' high on the western end; water in floor of quarry. Quarry is approximately 150' by 350' long. Rock fails to meet abrasion requirements for Item 204, Sub-base of Crushed rock.
2	1	1964	Marble	Yes	Chip	6.8%	Owner: Robert Chapman (formerly Georgia Marble Company Quarry). This is the site of an abandoned marble quarrying operations, a large flat mountain top area, with buildings and machinery still intact. Quarry itself is small, 54' by 62' (almost square). Blocks of marble lie throughout area, from which a sample was taken. Rock is white-to cream-colored marble with some 'brownish' convolutions. Rock belongs to Shelburne formation. Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
3	1	1964	Quartzite	No	Chip	2.6%	Owner: William Rough and Mrs. John DeReyes Numerous wooded exposures of Cheshire quartzite outcrop all along quarterline road, at top of hill. Test #1 represents 0.1 mile along roadside, sampled from various outcrops. Rock is extremely hard, uniform gray quartzite with large quartz grains. Rock meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
4	1	1964	Quartzite	No	Chip	3.2%	Owner: Raymond Gould A long outcrop which occurs along a dried-up brook bed, along Horton Road (between quarterline road and Creek Road). Sample 225' across strike.

CLARENDON ROCK DATA SHEET NO. 2

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Exist- ing Quarry	Method of Sampling	Abrasion AASHTO T-3	Remarks
							Rock is Cheshire quartzite-hard, buff to gray in color with large vitreous grains of quartz. Rock weathers somewhat "shaly". Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
5	1	1964	Quartzite	No	Chip	1.8%	Owner: James Lawrence, Fred Lawrence and Irving Macia A large area of wooded outcrops. There are two main bodies of rock, with numerous smaller outcrops about, from which both samples were taken. Rock is Cheshire quartzite-extremely hard, gray in color, weathering rust-colored. Rock meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
	2	1964	Quartzite	No	Chip	2.4%	Test #2 taken from northernmost outcrops for 250' across. Rock meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
6	1	1964	Quartzite	No	Chip	5.8%	Owner: Augustus Charles Masin A roadside exposure of 6' height. Rock occurs in scattered outcrops uphill from road; slight soil cover throughout hill-side area. Rock is light gray quartzite with some white pinstripe partings; quite massive rock belongs to the Danby formation. Sampled 225' along strike. Meets abrasion requirements for Item 204, Sub-base of Crushed Rock.
7	1	1964	Marble	Yes	Chip	13.6%	Owner: Thomas LaVictoire An old abandoned monumental marble quarry, uphill from house. Quarry is 30' by 70', with about 20' depth. Reason for halting operations was because rock split readily into small pieces-fairly soft, brittle rock. Rock is a white, 'loose-grained' or 'sugary' textured marble, with a greenish tinge near surface, and belongs to the Shelburne formation. Fails to meet abrasion requirements for Item 204, Sub-base of Crushed Rock.
8	1	1964	Dolomite to Quartzite	No	Chip	2.6%	Owner: Central Vermont Power Corporation A huge outcropping of ledge on both sides of Mill River -

CLARENDON ROCK DATA SHEET NO. 3

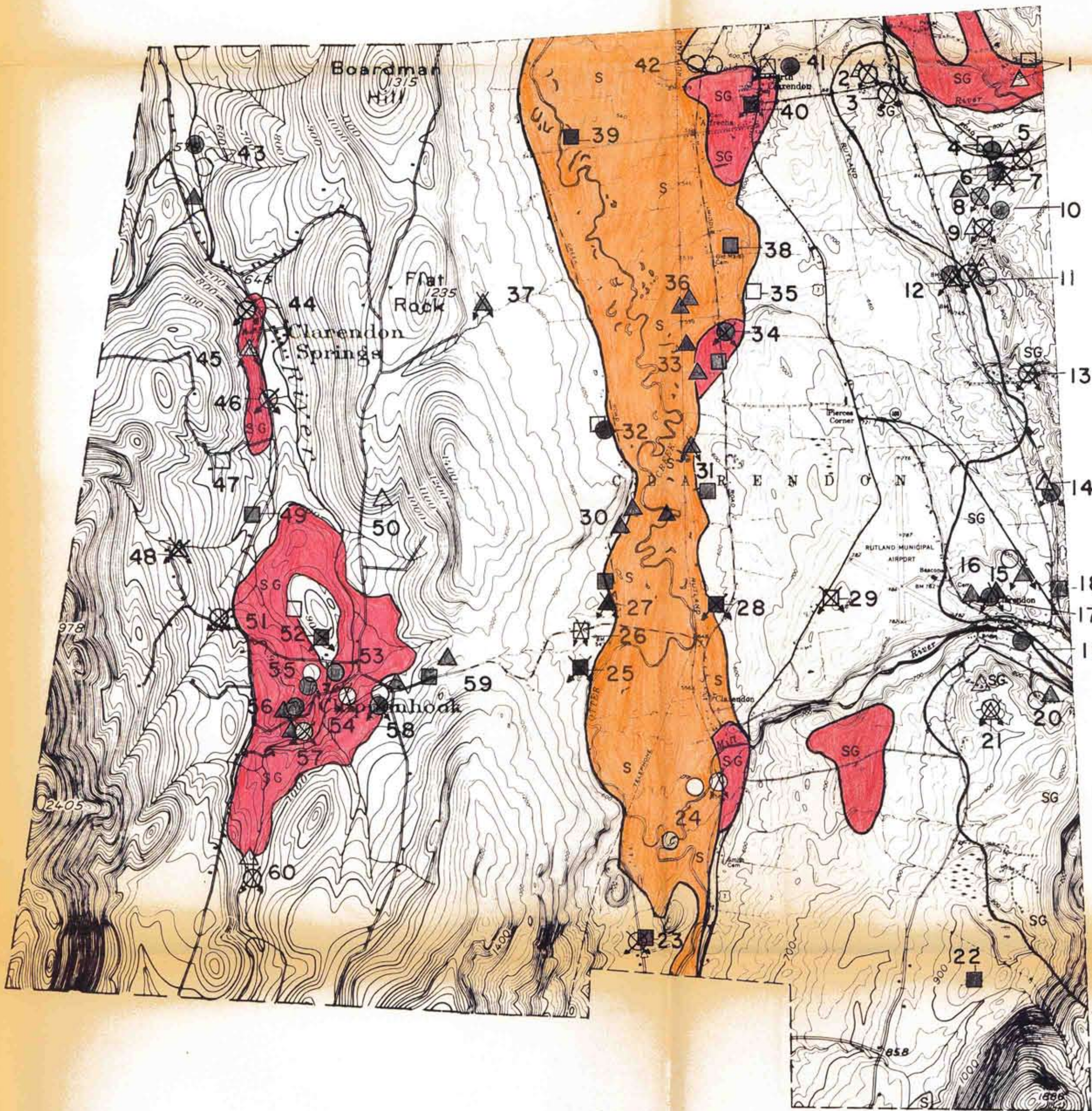
Map Ident. No	Field Test No.	Year Field Tested	Rock Type	Exist- Method ing of Quarry Sampling	Abrasion AASHO T-3	Remarks
						Locally called the "Gorge". Rock was sampled from bottom of face (about 35' height) for 225' across strike. Close to contact between Dunham dolomite and Monkton quartzite. Rock is light gray quartzite, hard, with bends of pinkish tinge color. Meets requirements for Item 204, Sub-base of Crushed Rock.

Clarendon Property Owners - Rock

TABLE II
Supplement

Map Ident. No.

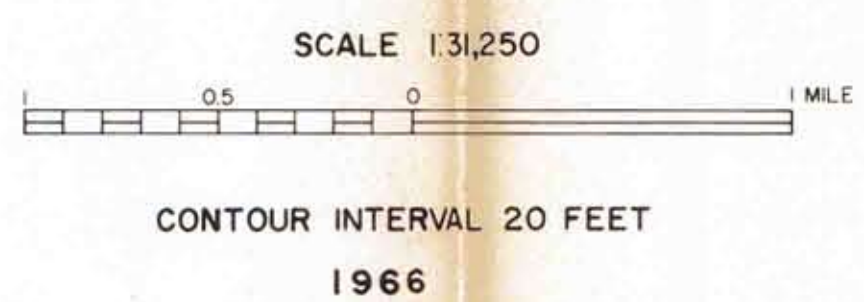
Central Vermont Power Corporation	8
Chapman, Robert (form. Georgia Marble Co.)	1, 2
Gould, Raymond	4
LaVictorie, Thomas	7
Lawrence, Fred	5
Lawrence, James	5
Machia, Irving	5
Masin, Augustus Charles	6
Rough, Wm. and Dereyes, John (Mrs.)	3



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)

CLARENDON

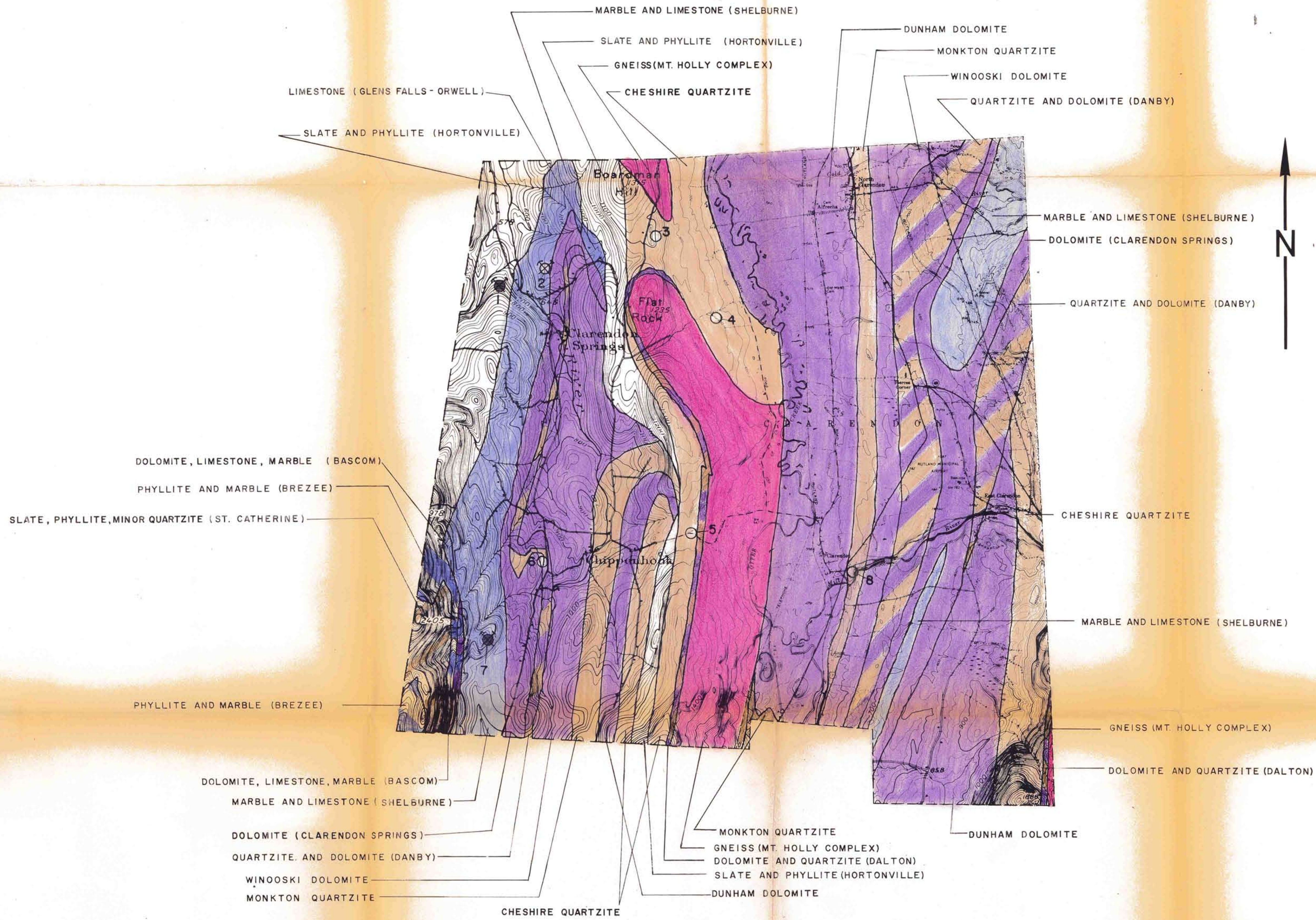


GRANULAR
MATERIALS MAP
BY
VERMONT DEPARTMENT OF HIGHWAYS
IN COOPERATION WITH
U.S. BUREAU OF PUBLIC ROADS

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

REVISIONS

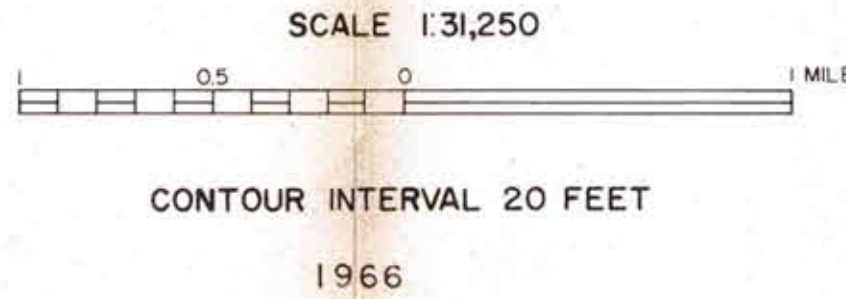
DATE					
BY					



LEGEND

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

CLARENDON



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

REVISIONS	DATE						
	BY						