Wallingford
Rutland City

SURVEY OF HIGHWAY CONSTRUCTION MATERIALS

IN THE TOWN OF WALLINGFORD, 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

Montpelier, Vermont

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

1. Various departments and individuals of the Vermont State Department of Highways, notably the Planning and Mapping Division and the Highway Testing Laboratory,

2. Professor D.P. Stewart of Miami University, Oxford, Ohio,

3. Professor C.G. Doll, Vermont State Geologist, University of Vermont, Burlington, Vermont,

4. United States Department of Commerce, Bureau of Public Roads.

History

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

on 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 Wallingford is located in southeastern Rutland County of south-central Vermont. It is bounded on the north by the townships of Clarendon and Shrewsbury, on the east by Mount Holly, on the south by Mount Tabor and Danby, and on the west by Tinmouth.

The eastern two-thirds of Wallingford township lies within the Green Mountains Physiographic Subdivision, and the western one-third lies in the Vermont Valley. Elevations vary from 2784 feet on Wilder Mountain near the southeast boundary to a low of less than 560 feet where Otter Creek crosses the northwest boundary.

Drainage in Wallingford township is mainly westward and northward via Otter Creek, except for about one-fifth in the eastern part which drains eastward to the Mill River, thence northward to Otter Creek beyond the town line, and ultimately to Lake Champlain.

Procedure for Rock Survey

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

The second stage of the investigation is begun in the field by making a cursory preliminary survey over the entire area. The information obtained in this survey, together with the information assimilated in the first stage of the investigation, is employed to determine the areas in which the testing and sampling will be concentrated. When a promising source is encountered as determined not only by rock type but also by volume, accessibility, and the existence of a good working face, chip samples are taken with a hammer and submitted to the Highway Testing Laboratory for testing by the Deval Method (AASHO T-3). It is kept in mind that 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 the same formation and exhibiting similar outward characteristics (i.e., color, texture, etc.) may produce

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

The rocks of the Town of Wallingford belong to the sedimentary, igneous, and metamorphic classes. Sedimentary rocks within the area consist of conglomerate, dolomite, limestone, and sandstone. Metamorphic rocks include chert, gneiss, granulite, marble, phyllite, quartzite, schist, and slate. Igneous rocks are present in an area of small extent in the northeastern corner of the township. They include nepheline,syenite,and essexite. For a detailed description of the thirteen lithologic types of rocks present, refer to the summary included in this report.

In general, massive Cheshire quartzite provides the best crushed rock material. Three localities on the southern slopes of Green Hill were sampled. Wear Tests averaged 2.9%. Two Columbian marble quarries near South Wallingford were also sampled. Wear Tests averaged about 14.0%. Additionally sampled were Mount Holly gneiss outcrop exposures south of S.A. #140 just east of the Long Trail crossing. A Wear Test of this material was excellent, being only 3.0%. It should be noted, however, that 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 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 indicating glacial deposits and in studying drainage patterns. In addition, the location of existing pits 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 then sampling the material. The samples are submitted to the Highway Testing Laboratory where they are tested for gradation and stone wear, the latter by the Deval Method (AASHO T-4-35).

Discussion of Sand and Gravel Deposits

The granular materials of the Town of Wallingford are mainly of glacial origin. They occur as the result of both fluvial and lacustrine deposition. Their distribution is principally concentrated along stretches of Otter Creek, Roaring Brook, and Mill River.

Glaciofluvial materials in the township include eskers, kames, kame moraines, kame terraces, and an outwash area. According to Dr. D.P. Stewart, there is a small esker about a mile south of South Wallingford and just east of the railroad. A second esker about 1.3 miles long occurs west of S.A. #2

and as far south as the east shore of Elfin Lake. He designates one kame on Town Highway #4 immediately south of its junction with Town Highway #35, and a second about 0.3 mile east of the first and south of Town Highway #35. A possible third kame is located in East Wallingford east of the Mill River and north of State Aid Highway #140. Kame moraines occur in the following places according to Dr. Stewart:

1. west of Mill River, north from East Wallingford for about 1.75 miles, and west along State Aid Highway #140 for about 1.5 miles
2. about 0.75 mile northeast of South Wallingford on Town Highway #34
3. west of S.A. #2 immediately south of Clarendon town line
4. west of S.A. #2 at point 0.6 mile south of Clarendon town line
5. southeast of Wallingford to point 1.25 miles east on Roaring Brook and about 0.75 mile south on Rutland Railroad
6. north of Roaring Brook for about 1.0 miles along Town Highway #15, thence 0.5 mile northeast along Bear Mountain

Kame terraces occur southeast of South Wallingford along Town Highway #34, southeast of East Wallingford on State Aid Highway #155, and immediately south of Shrewsbury town line west of State Highway #103. A possible outwash deposit occurs west of State Aid Highway #140 junction with Town Highway #35.

Dr. D.P. Stewart limits glaciolacustrine deposits within the township to lake sand. These occur (1) south along U.S. Route 7 for 1.1 miles from Clarendon town line, (2) covering most of the Village of Wallingford east of an esker mentioned in the previous paragraph, (3) west of the aforementioned esker for its entire length, and (4) north from the Mount Tabor town line through South Wallingford and north along U.S. Route 7 for another mile.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF WALLINGFORD

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. It apparently grades southward into the Dalton formation.

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.

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

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.

Glens Falls and Orwell Limestones Undifferentiated - Thin-bedded, dark blue-gray, rather coarsely granular, and highly fossiliferous limestone; or smooth-ledged, sub-lithographic and lithographic, dove-gray weathered limestone commonly cut by veins of white calcite (veins filled with fossil shell fragments are characteristic).

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

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.

Mount Holly Complex - 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 granulite; includes numerous small bodies of pegmatite and gneissoid granitic rock.

> Calcite and Dolomite Marbles - Are locally coarse-grained; commonly contain phlogopite, actinolite, and diopside, and are interbedded with medium- to coarse-grained calc-silicate granulite; includes minor amounts of other types of pre-Cambrian rock.
>
> Quartzite - Locally in massive beds as much as 30 feet thick, micaceous quartzite and quartz-mica schist that commonly contains garnet or pseudomorphs (largely chlorite) after garnet; schists are locally rusty-weathered and contain conspicuous flakes of graphite; also includes amphibolite and minor hornblende gneiss, biotite gneiss, and pegmatite.

White Mountain Plutonic Series (Cuttingsville Stock) -

Essexite - A black, fairly uniform, medium- to coarse-grained gabbroic igneous rock, the texture of which varies from equigranular to porphyritic.

Hornblende-biotite Syenite - An intermediate crystalline igneous rock consisting predominantly of feldspar, deficient in quartz, and having an abundance of hornblende and biotite.

Pulaskite - A coarse-grained intermediate igneous rock composed essentially of gray-white feldspar which weathers cream-white, yellowish, or brownish and contains an abundance of biotite.

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.

Glossary of Selected Geologic Terms

Dolomite - As used in this report 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, $CaMg(CO_3)_2$: carbon dioxide 47.7 %, lime 30.4%, magnesium 21.9%.

Esker - A relatively long, narrow, winding ridge of mixed sand and gravel. In longitudinal profile its crest is seen to be sinous. It is considered to have been deposited by streams of meltwater flowing through crevasses and tunnels in stagnant ice sheets.

Essexite - A granular intrusive igneous rock containing nepheline, orthoclase and plagioclase feldspars, the dark minerals hornblende and augite, and accessory ore minerals. The term essexite includes rocks in the series nepheline monzonite to nepheline gabbro.

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 origin.

Gneiss - A term originally applied to a more or less banded metamorphic rock with the mineral composition of granite. As now employed, it designates a foliated metamorphic rock with no specific composition implied, but having layers that are mineralogically unlike and consisting of interlocking mineral particles that are mostly large enough to be visible to the eye. Usually gneiss displays an alteration of granular minerals and tabular or schistose minerals with rock tending to split along the planes where tabular or schistose minerals predominate.

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

Intrusive - Igneous rock which has cooled before reaching the earth's surface; contains small to large visible grains. Opposed to Extrusive, which solidifies at the surface and contains small unrecognizable grains.

Kame - A conical hill of stratified drift deposited at a glacial terminus by glacial 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 granular crystalline rock made up of calcite or dolomite grains cemented or intergrown and interlocking by means of additional calcite.

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

Nepheline Syenite - A crystalline igneous rock resembling granite in appearance that contains little or no quartz but that is rich in nepheline, $(Na,K)_8Al_8Si_9O_{34}$.

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

Schistosity - 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 - Rocks composed of mechanical, chemical, or organic sediments. 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.

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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APPENDIX I

PARTIAL SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MATERIALS

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

Item 105, Granular Borrow:

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

"The sand portion (material passing the No. 4 screen) shall have not more than ten percent (10%) passing the No. 270 mesh sieve and shall show a color of not more than three and one-half (3½) as determined by the colorimetric test described in AASHO Method of Test, Designation T-21.

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

Item 201, Sub-base of Gravel·

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

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

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

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

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

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

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

"The sand shall show a color of not more than three and one-half (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, free from dirt. The ledge from which this material is obtained shall be stripped and cleaned before blasting. Conical stockpiling or any other method of stockpiling, which causes segregation of aggregates will not be permitted.

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

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

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

Item 205, Sub-base of Crushed Gravel

"Article 205.02 Materials.

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

a product uniformly graded from coarse to fine.

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

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

"At least thirty (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."

WALLINGFORD GRANULAR DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
1	1	1964	0-11	Stripped	Yes	72.0	43.6	17.8	7.0	2.0	1	6.0%	Gravel	Owner: Aldous Newton Pit is west of S.A. #2 at point 1.19 miles north of intersection with U.S. #7. Test #1 is gravel in east-central floor of pit. Acceptable for Item 201.
	2A	1964	0-6	Stripped	Yes	67.5	55.6	46.7	2.0	1.0	1	----	Grav. Borrow (Grav.)	Test #2A is gravel in floor near south edge of pit. Acceptable for Item 105. Rejected for Item 201 because of insufficient stone for wear test.
	2B	1964	6-10	0-6	Yes	100	100	100	79.	17.3	1	----	-----	Test 2B is sand in floor near south edge of pit. Rejected for Item 105.
	3	1964	10-20	0-10	Yes	63.2	53.5	33.5	31.	19.0	1	----	----	Test #3 is gravel from center of west face. Rejected for Item 105.
2	1A	1964	0.5-5	0-0.5	Yes	100	100	100	65.	42.0	5+	----	----	Owner: Clyde Patch Property and pit is on wooded hilltop about 0.3 mile west of S.A. #2 at point 0.7 mile north of intersection with U.S. #7.
	1B	1964	5-15	0-5	Yes	63.3	48.2	25.8	2.	1.5	1	7.0%	Gravel	Test 1A is fine sand taken in west face of pit. Rejected for Item 105. Test 1B is gravel in west face of pit. Acceptable for Item 201.
	2	1964	1-11	0-1	No	100	100	100	58.	22.0	1	----	----	Test #2 is sand on knoll 480' west of pit. Rejected for Item 105.
3	1	1964	1-9	0-1	No	100	100	94.5	10.	2.5	1	----	Sand	Owner: Mrs. Evelyn Grossman

* Percentage of Total Sample

TABLE I WALLINGFORD 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 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														Property is east of Town Highway #8 at point 0.15 mile northeast of junction with U.S. Route #7. Test #1 is sand with stones in forested area on hill about 0.3 mile east of house. Acceptable for Item 202.
4	1	1964	2-8	0-2	Yes	82.0	65.0	38.6	11.0	5.0	1	5.2%	Gravel	Owner: Charles Tarbell Property and pits are west of S.A. #2 at point about 0.3 mile north of intersection with U.S. Route #7. Test #1 is gravel in floor of east end of north pit. Acceptable for Item 201.
	2	1964	10-35	Stripped	Yes	60.9	42.4	23.6	2.0	1.3	1	8.2%	Gravel	Test #2 is gravel in west face of north pit. Acceptable for Item 201.
	3	1964	0.5-10	0-0.5	No	100	100	100	99.0	63.6	1	----	----	Test #3 is silty sand on knoll west of north pit. Rejected for Item 105.
	4	1964	0.5-35	0-0.5	Yes	59.9	45.4	33.5	5.0	2.5	2	12.2%	Gravel	Test #4 is gravel in west face of south pit. Acceptable for Item 201.
	5	1964	0-10	Stripped	Yes	73.3	60.0	49.2	3.0	1.3	1	7.0%	Gravel	Test #5 is gravel in floor of south pit. Acceptable for Item 201.
	6	1964	1-11	0-1	No	100	100	85.7	48.0	37.0 31.7*	1	----	----	Test #6 is fine sand (silty sand) on second knoll northeast of north pit. Rejected for Item 105.
5	1	1964	0-8.5	Stripped	Yes	92.0	73.9	59.1	23.0	8.0	1	----	Gran. Borrow	Owner: James Davenport Pit is west of Town Highway #15 at point about 0.8 mile

*Percentage of Total Sample

TABLE I WALLINGFORD GRANULAR DATA SHEET NO. 3

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														north of intersection with S.A. #1.
	2	1964	1-25	0-1	Yes	63.4	54.1	40.3	4.0	3.0	1	9.2%	Gravel	Test #1 is gravel in floor of pit. Acceptable for Item 105. Test #2 is gravel in north face of pit. Acceptable for Item 201.
6	1	1964	0.5-23	0-0.5	Yes	63.3	57.5	46.4	2.0	1.0	1	7.0%	Gravel	Owner: Vermont Paving Company, Inc. Pit and property is 0.3 mile northwest of junction of Railroad and depot streets. Test #1 is gravel in northeast face of pit. Acceptable for Item 201.
	2	1964	0-9	Stripped	Yes	56.5	43.1	41.9	6.0	1.5	1	----	Gran. Borrow (Grav.)	Test #2 is gravel in floor of pit. The test met grading requirements for Item 201, but there was insufficient stone for % of wear test. Acceptable for Item 105.
	3	1964	1-10	0-1	No	100	100	96.6	22.2	8.0 7.7*	1	----	Gran. Borrow (Sand)	Test #3 is sand in knoll east of pit and beside barn. Acceptable for Item 105.
7	1	1964	1-25	0-1	Yes	65.9	54.9	45.3	8.0	2.5	3½	10.3%	Gravel	Owner: Mr. John McLeod Property and pit are 0.3 mile northwest of junction of railroad and depot streets. Test #1 is gravel in west face of small pit. Acceptable for Item 201.
	2A	1964	0.5-3	0-0.5	Yes	100	100	99.5	3.0	1.25 1.24*	1	----	Sand	Test 2A is sand in floor of pit. Acceptable for Item 202.

*Percentage of Total Sample

TABLE I WALLINGFORD GRANULAR DATA SHEET NO. 4

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2B	1964	3-9	0 3	Yes	43.1	34.5	28.7	6.0	3.0	1	----	Gran. Borrow (Grav.)	Test #2B is gravel in floor of pit. It met grading requirements for Item 201, but there was insufficient stone for % of wear test. Acceptable for Item 105.
8	1A	1964	1-25	0-1	Yes	100	100	100	6.0	1.0	1	----	Sand	Owner: Harry Townsend Pit is 0.2 mile west of intersection of Railroad and Depot streets. Test #1A is sand in north face of pit. Acceptable for Item 202.
	1B	1964	25-40	0-25	Yes	51.1	39.5	28.9	14.0	4.0	1	9.2%	Gravel	
	2	1964	0-7.5	Stripped	Yes	56.4	43.6	27.3	9.0	4.0	1	6.8%	Gravel	Test #1B is gravel in north face of pit. Acceptable for Item 201. Test 2 is gravel in floor of pit. Acceptable for Item 201.
	3	1964	0-9	Stripped	Yes	58.1	35.8	13.1	14.0	5.0	1	13.8%	Gravel	Test #3 is gravel in floor of south end of pit. Acceptable for Item 201.
9	1	1964	40-60	0-40	Yes	100	100	92.8	8.4	2.3 2.1*	1	----	Sand	Owner: Town of Wallingford (Park Pits) Pits are 0.3 mile southeast of point 0.55 mile west-southwest of intersection of railroad and depot streets. Test #1 is sand taken in north face of pit. Acceptable for Item 202.
	2	1964	0-5.5	Stripped	Yes	70.5	49.5	34.2	14.0	4.0	1½	13.2%	Gravel	Test #2 is gravel taken in floor of pit. Acceptable for Item 201.

* Percentage of Total Sample

TABLE I WALLINGFORD GRANULAR DATA SHEET NO. 5

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
10	1	1964	15-50	0-15	Yes	59.1	46.2	30.5	5.0	2.0	1	10.0%	Gravel	Owner: Town of Wallingford (Park Pits) Pit is about 0.4 mile south-southwest of intersection of Railroad and Depot streets. Test #1 is gravel in west face of pit. Acceptable for Item 201.
	2	1964	0-9	Stripped	Yes	52.3	38.6	25.5	3.0	2.0	1	10.4%	Gravel	Test #2 is gravel in floor of pit. Acceptable for Item 201.
11	1	1964	0-13	Stripped	Yes	100	100	100	62.0	10.0	1	----	Gran. Borrow	Owner: Don Eddy Pit is south of Town Highway #17 at point about 0.15 mile east of intersection with U.S. #7. Test #1 is silty sand in south face. Acceptable for Item 105.
	2	1964	0-8	Stripped	Yes	100	100	62.5	60.0	19.0	1	----	----	Test #2 is silty sand in floor. Rejected for Item 105.
12	1	1964	0-25	Stripped	Yes	89.9	82.4	74.9	16.5	5.0 3.7*	1	----	Gran. Borrow (Sand)	Owner: Robert Davenport Pit is located at south end of Lake Elfin. Test #1 is sand in east face of pit. Acceptable for Item 105.
	2	1964	0-9	Stripped	Yes	82.6	81.5	76.1	19.8	5.0 3.8*	1½	----	Gran. Borrow (Sand)	Test #2 is pebbly sand in floor of pit. Acceptable for Item 105.
13	1	1964	1-6	0-1	No	100	100	100	90.0	4.5	1	----	----	Owner: Arthur Davenport Property is 0.35 mile west of Town Highway #13 at point

*Percentage of Total Sample

TABLE I WALLINGFORD GRANULAR DATA SHEET NO. 6

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														0.1 mile north of intersection with U.S. Route #7. Test #1 is silt in face of small opening in hill. Rejected for Item 105.
14	1	1964	0.5-10	0-0.5	No	100	100	100	83.0	40.0	1	----	----	Owner: Manford Ewing Property is west of U.S. Route #7 at point about 1.4 miles south of S.A. #140. Test #1 is silt on knoll south of culvert and 145 feet west of highway. Rejected for Item 105.
15	1	1964	10-30	0-10	Yes	36.2	63.2	40.8	6.0	2.0	1	10.6%	Gravel	Owner: Mrs. Hutchinson Pit is located south of Town Highway #35 at point 0.25 mile east of intersection with Town Highway #34. Test #1 is gravel in south-east face. Acceptable for Item 201.
	2	1964	2.5-9.5	Stripped	Yes	100	100	100	42.0	13.0	1	----	----	Test #2 is sand in floor. Rejected for Item 105.
16	1	1964	35-70	0-35	Yes	32.2	68.8	48.2	14.0	5.0	2	----	Gran. Borrow (Grav.)	Owner: Frank Stafford Pit is west of Town Highway #34 at point 1.0 mile north-east of intersection with U.S. Route 7. Test #1 is sandy gravel in lower part of north face. Insufficient propersized stone for % of Wear Test. Acceptable for Item 105.

* Percentage of Total Sample

TABLE I WALLINGFORD GRANULAR DATA SHEET NO. 7

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing 1½	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1964	0-9	Stripped	Yes	75.6	62.7	45.9	9.0	4.0	1	10.6%	Gravel	Test #2 is gravel in floor of pit. Acceptable for Item 201.
	3	1964	0.5-35	0-0.5	Yes	57.5	45.0	32.4	15.0	6.5	1	13.6%	Gran. Borrow (Grav.)	Test #3 is gravel in upper part of north face. Acceptable for Item 105.
	4	1964	3-7.5	0-3	No	52.0	43.9	30.9	15.0	4.0	1	21.2%	Gravel	Test #4 is gravel on top of knoll at west end of feature. Acceptable for Item 201.
17	1	1964	0.5-9	0-0.5	Yes	82.6	74.8	56.9	22.0	6.5	1	----	Gran. Borrow (Grav.)	Owner: Karl Chapman Pit is southwest of point on Town Highway #5 that is 0.25 mile south of junction with Town Highway #47. Test #1 is dirty gravel in east face. Acceptable for Item 105.
	2	1964	0-8	Stripped	Yes	100	100	47.0	37.0	14.0	1	----	----	Test #2 is silt and stones in the floor. Rejected for Item 105.
18	1	1964	6-35	0-6	Yes	65.8	56.9	40.6	3.0	1.0	1	----	Gran. Borrow (Grav.)	Owner: Robert Chapman Pit is west of U. S. Route 7 at point opposite junction with Town Highway #59. Test #1 is gravel in west face. Insufficient proper-sized stone for % of Wear Test. Acceptable for Item 105.
	2	1964	0-7	Stripped	Yes	56.1	48.1	30.4	6.0	1.8	1	19.6%	Gravel	Test #2 is gravel in floor. Acceptable for Item 201.
19	1	1964	10-45	0-10	Yes	71.8	60.1	47.6	10.0	4.0	1	14.8%	Gravel	Owner: Old Rutland Railroad Pit used for years by R.R. extends along tracks. Test #1 dug in face at north end at point 0.3 mile west of Town

* Percentage of Total Sample

TABLE I WALLINGFORD 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 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abafasion AASHO T-4-35	Passes VHD Spec.	Remarks
														Highway #34 about 0.65 mile south of intersection with Town Highway #59 is gravel. Acceptable for Item 201.
	2	1964	0-9	Stripped	Yes	72.9	51.1	36.6	14.0	4.0	1	31.6%	Gran. Borrow	Test #2 is gravel in floor of pit. Acceptable for Item 105.
	3	1964	1-45	0-1	Yes	68.9	46.4	32.1	9.0	4.0	1	9.6%	Gravel	Test #3 is gravel taken in south face. Acceptable for Item 201.
20	1	1964	1-10	0-1	No	100	100	80.9	58.0	23.0	1	----	----	Owner: Guy and Ralph Stafford Property is 0.2 mile east of U.S. Route 7 at point 1.1 miles south of intersection with Town Highway #59. Test #1 is sand with stones on terrace east of Otter Creek. Rejected for Item 105.
	2	1964	1-9	0-1	No	91.2	67.6	59.2	21.9	8.0 4.7*	2½	----	Gran. Borrow	Test #2 is on knoll 90 feet west of R.R. fence, is of same material. Acceptable for Item 105.
	3	1964	1-10	0-1	No	100	100	95.5	70.9	45.0 43.0*	1	----	----	Test #3 is silty sand on knoll between Otter Creek and U.S. Route 7. Rejected for Item 105.
21	1	1964	0.5-10.5	0-0.5	No	100	100	73.5	37.5	22.0 16.2*	1	----	----	Owner: Guy and Ralph Stafford Property is west of Town Highway #34 about 0.9 mile south of junction with Town Highway #59. Test #1 is silty sand on knoll about 175 feet northwest of

* Percentage of Total Sample

TABLE I WALLINGFORD 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 % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1964	1-10	0-1	No	100	98.5	92.3	19.4	5.0 4.6*	3	----	Gran. Borrow (Sand)	building basement. Rejected for Item 105. Test #2 is silty sand on top of knoll in southwest corner of meadow. Acceptable for Item 105.
22	1				NOT SAMPLED									Owner: Edward R. Dana Property is west of Town Highway #22 and adjacent to Shrewsbury Town line. Test #1 on knoll northeast of house; hit ledge at 3 feet.
23	1	1964	0-9	Stripped	No	100	93.9	84.2	29.4	7.0 5.9*	1	----	Gran. Borrow (Sand)	Owner: Milton D. Valger Property is at end of Town Highway #24. Test #1 is silty sand in trench excavation north of house. Acceptable for Item 105.
24	1	1964	1-6	0-1	Yes	100	100	91.5	23.8	4.0 3.7*	1	----=	Gran. Borrow (Sand)	Owner: Paul Valar Pits are north of S.A. #140 and 0.2 mile east of Town Highway #23. Test #1 is silty sand in west face of small pit. Acceptable for Item 105.
	2	1964	0-7	Stripped	Yes	100	100	61.2	14.0	1.5	1	----	Gran. Borrow (Grave)	Test #2 is silt and stones in floor of small pit. Acceptable for Item 105.
	3	1964	1-8	0-1	Yes	100	100	75.7	35.0	13.0	1	----	------	Test #3 is silt and stones in floor of larger pit. Rejected for Item 105.

*Percentage of Total Sample

TABLE I WALLINGFORD GRANULAR DATA SHEET NO. 10

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
25	1	1964	0.5-8	0-0.5	Yes	57.4	44.1	30.0	14.0	5.0	3½	15.3%	Gravel	Owner: Francis Parker Pit and property are east of Town Highway #24 about 0.2 mile north of intersection with S. A. #140. Test #1 is dirty gravel in floor of pit. Acceptable for Item 201.
	2	1964	1-9	0-1	No	100	100	59.9	36.0	13.0	1	-----	----	Test #2 is silt and stones on knoll about 130 feet north of pit. Rejected for Item 105.
	3	1964	1-8	0-1	No	87.1	84.0	76.9	27.6	15.0 11.5*	1½	-----	----	Test #3 is sand and stones on knoll opposite and west of Town Highway #24. Rejected for Item 105.
26	1	1964	1-9	0-1	No	100	100	63.1	44.0	15.0	3	-----	-----	Owner: Alan Seward Property is north of S.A. #140 and east of Town Highway #24. Test #1 is silt and stones on knoll just west of small farm pit. Rejected for Item 105.
	2	1964	1-9.5	0-1	No	100	100	59.9	46.0	15.0	1½	----	----	Test #2 is silt and stones on knoll 600 feet west of Test #1. Rejected for Item 105.
27	1	1964	1-4	0-1	No	100	100	58.4	52.0	24.0	3	----	----	Owner: Henry Fiske Property is east of State Highway 103, north of intersection with S.A. #140. Test #1 is silt on hill northeast of house. Rejected for Item 105.

*Percentage of Total Sample

TABLE I WALLINGFORD GRANULAR DATA SHEET NO. 11

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over-burden (Ft.)	Exist-ing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
28	1	1964	0.5-8	0-0.5	Yes	75.2	58.3	33.4	9.0	2.0	2	17.4%	Gravel	Owner: Mrs. Chester Kronfeld Pit is north of Town Highway #42 at point 0.3 mile west of intersection with Town Highway #44. Test #1 is dirty gravel in south face of pit.
	2	1964	0-8	Stripped	Yes	100	100	72.4	15.9	8.0 5.8*	1	----	Gran. Borrow (Sand)	Acceptable for Item 201. Test #2 is silt and stones in floor. Acceptable for Item 105.

* Percentage of Total Sample

WALLINGFORD PROPERTY OWNERS - GRANULAR

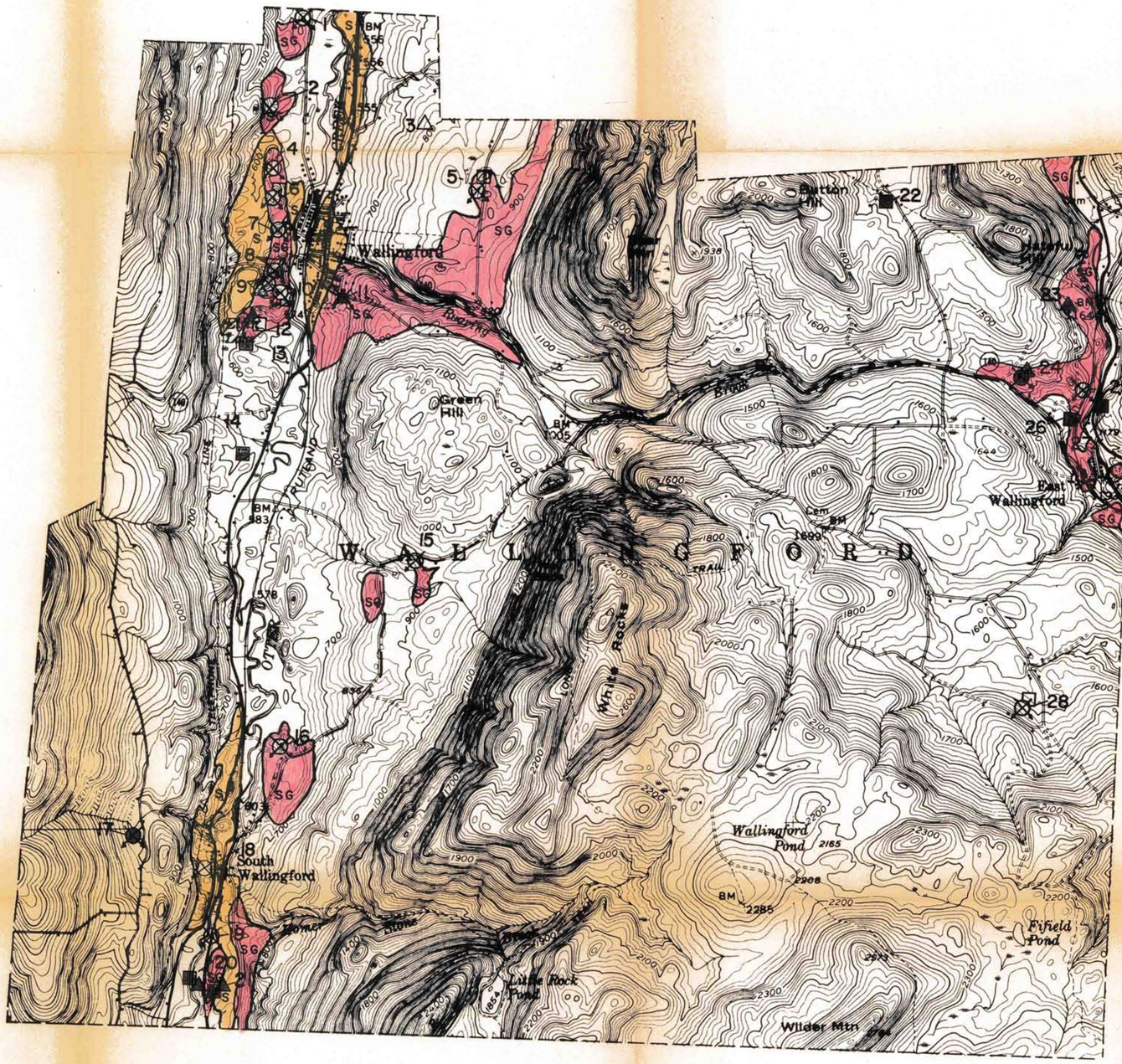
Name	Map Ident. Nol.
Chapman, Karl	17
Chapman, Robert	18
Crossman, Evelyn (Mrs.)	3
Dana, Edward R.	22
Davenport, Arthur	13
Davenport, James	5
Davenport, Robert V.	12
Eddy, Don	11
Ewing, Manford	14
Fiske, Henry	27
Hutchinson, (Mrs.)	15
Kronfeld, Mrs. Chester	28
McLeod, John	7
Newton, Aldous	1
Parker, Francis	25
Patch, Clyde	2
Rutland Railroad	19
Seward, Alan	26
Stafford, Frank	16
Stafford, Guy	20, 21
Stafford, Ralph	20, 21
Tarbell, Charles	4
Townsend, Harry	8
Valar, Paul	24
Valger, Milton D.	23
Vermont Paving Company, Inc.	6
Wallingford, Town of (Park Pits)	9, 10

TABLE II WALLINGFORD ROCK DATA SHEET NO. I

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
1	1	1964	Quartzite	No	Chip	2.8%	Owner: Manford Ewing Property is 0.25 mile north of Town Highway #34 at point 0.5 mile east of U.S. Route #7. Test #1 was taken on side of mountain (Round Hill) above talus slope. Whole mountain is made up of Cheshire quartzite.
2	1	1964	Quartzite	No	Chip	2.1%	Owner: Mrs. Hutchinson Property is north of forest road at point 0.85 mile east of intersection of Town Highway #35 with Town Highway #34. Test #1 is Cheshire quartzite. It was taken across strike for about 100 feet.
3	1	1964	Quartzite	No	Chip	3.8%	Owner: Harold Underwood Property is north of Town Highway #35 at point 0.2 mile east of intersection with Town Highway #34. Test #1 is Cheshire quartzite in 250 foot outcrop north of house in woods.
4	1	1964	Marble	Yes	Chip	15.4%	Owner: Albert Kelley Quarry is west of U.S. Route #7 about 0.6 mile north of intersection with Town Highway #59. Test #1 is probably Columbian marble of Shelburne formation.
5	1	1964	Marble	Yes	Chip	6.4%	Owner: White Pigment Corporation Quarry is west of U.S. Route 7 about 0.2 mile south of intersection with Town Highway #59.
	2	1964	Marble	Yes	Chip	18.6%	Test #1 is probably Columbian marble and Test #2 is the same.
6	1	1964	Gneiss	No	Chip	3.0%	Owner: Harold Atkins Property is south of Town Highway #28 at point 0.75 mile west of intersection with Town Highway #29. Test #1 is Mt. Holly gneiss taken at random along outcrop behind barn.

WALLINGFORD PROPERTY OWNERS - ROCK

Name	Map Ident. Number
Atkins, Harold	6
Ewing, Manfred	1
Hutchinson, (Mrs.) above forest road	2
Kelley, Albert	4
Underwood, Harold	3
White Pigment Corporation	5



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)

WALLINGFORD

SCALE 1:31,250

1 0.5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1966

GRANULAR MATERIALS MAP

BY

VERMONT DEPARTMENT OF HIGHWAYS

IN COOPERATION WITH

U.S. BUREAU OF PUBLIC ROADS

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

PLATE I

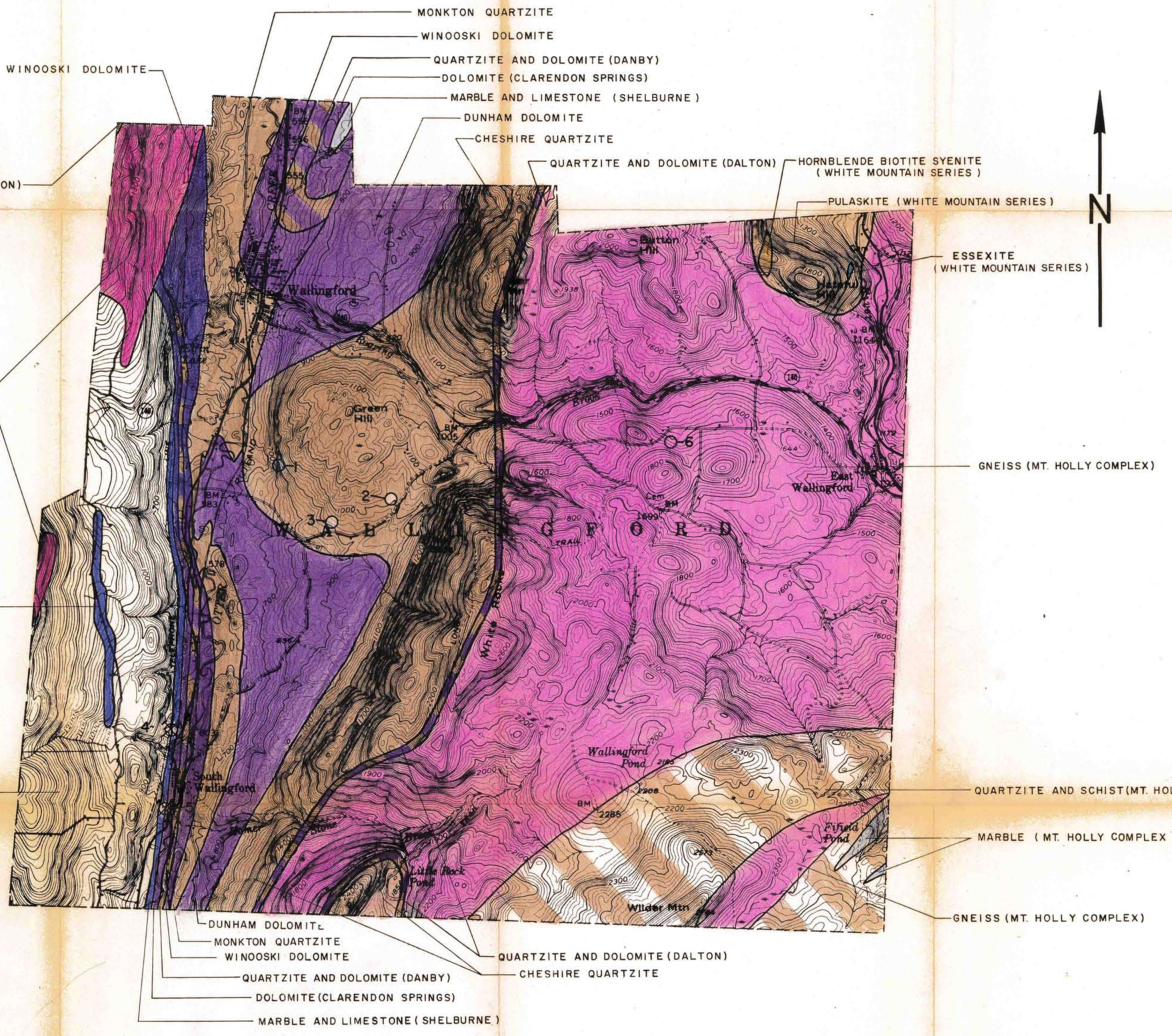
GRANULAR

RUTLAND COUNTY VT. HWY. DISTRICT NO. 3

REVISIONS

DATE							
BY							

WALLINGFORD



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
- 3 IDENTIFICATION NUMBER (refer to data sheets)

WALLINGFORD

SCALE 1:31,250

1 0.5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1966

ROCK MATERIALS MAP

BY

VERMONT DEPARTMENT OF HIGHWAYS

IN COOPERATION WITH

U.S. BUREAU OF PUBLIC ROADS

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

PLATE 11

ROCK

RUTLAND COUNTY VT. HWY. DISTRICT NO. 3

REVISIONS

DATE							
BY							

WALLINGFORD