SURVEY OF HIGHWAY CONSTRUCTION MATERIALS IN THE TOWN OF BARNET, CALEDONIA COUNTY, VERMONT

prepared by

Engineering Geology Section

Materials Division

Vermont Department of Highways

United States Department of Commerce

Bureau of Public Roads

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TABLE OF CONTENTS

Acknowledgments							•	•	•	•	•	•	Page	I
History							•	•	•	•	•	•	Page	I
Inclosures					•		•	•	•	•	•	•	Page	2
Location							•	•	•	•	•	•	Page	4
Procedure for Ro	ck Sur	vey .			•		•	•	•	•	•	•	Page	4
Discussion of Ro	ck and	Rock	Sour	ces	•		•	•	•	•	•	•	Page	5
Procedure for Sa	nd and	Grave	el Su	irve	,		•	•	•	•	•	•	Page	7
Discussion of Sa	nd and	Grave	el De	pos	i ts	•	•	•	•	•	•	•	Page	8
Summary of Rock	Format	ions i	in th	e To	own	of	Ba	arn	et		•	•	Page	10
Glossary of Sele	cted G	eo1ogi	с Те	rms			•		•	•	•	•	Page	11
Bibliography					•		•	•	•	•	•	•	Page	14
Partial Specific	cation cuction				•		•	•	•	•	A	ppe	endix	ī
Granular Data Sh	neets				•		•	•	•	•		•	Tab1e	1
Barnet Property	0wners	- Gra	anu 1a	r.	•		•	•	•	•	s	upį	olemer	nt
Rock Data Sheets					•	•	•	•	•	•		•	Tab1e	II
Barnet Property	Owners	- Roc	ck		•	• •	•	•	•	•	S	up	p1emer	ıt
Granular Materia	ıls Map		• •		•		•	•	•	•		I	Plate	I
Rock Materials M	lan .				_		_			_			Plate	TT

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- Various departments and individuals of the Vermont State Department of Highways, notably the Planning and Mapping Divisions and the Highway Testing Laboratory.
- Professor D. P. Stewart of Miami University, Oxford, Chio.
- 3. Professor Charles G. Doll, Vermont State Geologist, University of Vermont, Burlington, Vermont.
- 4. The 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 is to compile an inventory of highway construction materials in the State of Vermont. Prior to the efforts of the survey personnel, as described in this and other reports, investigations for highway construction materials were conducted only as the immediate situation required. Thus, only limited areas were surveyed, and the over-all picture of material resources was not available. Highway contractors or resident engineers were usually required to locate the materials for projects and have samples tested by the Highway Testing Laboratory. The additional cost of repeated exploration for construction material was passed on to the state in the form of higher construction costs. The Materials Survey Project was established to minimize or eliminate chis factor by enabling the state and its contractors to proceed with information on material sources available beforehand. Prior

knowledge about locations of suitable material is an important factor in the planning of 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, keeping in mind their intended use. These maps and data sheets were devised to furnish information of particular use to the contractor or construction man. For maximum benefit, the maps, data sheets, and this report should be studied simultaneously.

Inclosures

Included in this folder are two surface-geology maps; one defining the location of tests conducted on bedrock sources, the other defining the location of tests conducted on granular materials. These maps are derived from 15 minute or $7\frac{1}{2}$ minute quadrangles of the United States Geological Survey enlarged or reduced to 1:31250 or 1" = 26041. Delineated on the Bedrock Map are the various rock types of the area. This information was obtained from numerous sources; i.e. Vermont Geological Survey Bulletins, Vermont State Geologist Reports, United States Geological Survey Bedrock Maps, 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, 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 tested 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, 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 of verification. When possible, locations of 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 whenever this information appears incomplete. This project does not assume responsibility for the information taken from the card files.

Mork 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

4

The town of Barnet is located in the southern part of Caledonia County on the eastern side of the state. The Connecticut River forms its eastern boundary; it is bounded on the south by Ryegate, on the northwest by the towns of Peacham and Danville, and on the north and northeast by St. Johnsbury and Waterford.

Barnet is in the Vermont Piedmont or Eastern Hill region of the state, a dissected and glaciated "plateau-like region" (Stewart, 1959, p. 46). Elevations range from 2091 feet on Roy Mountain in the southern part of the town to 477 feet on the Connecticut River south of McIndoe Falls. There are a number of hills with elevations between 1200 feet and 1600 feet.

Drainage is eastward via Stevens Brook, Sutton Brook, Joe's Brook, Water Andric and their tributaries into the Connecticut and Passumpsic Rivers. The latter flows south, entering the Connecticut River at East Barnet.

The major streams and their tributaries have eroded their valleys headward into the hills, and glaciation has further modified the topography by broadening the valleys and rounding off the hills.

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 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 sources 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 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 Barnet consist predominantly of metamorphic schists, phyllites, quartzites, limestones, and minor amphibolite; also small scattered igneous intrusive bodies of granite and granodiorite, and a large igneous intrusive, the Moulton Diorite, which is exposed in the northeast corner of the Township.

Representatives of these metamorphic and igneous rocks were sampled and tested. Location of samples are shown on Plate II together with the rock outcrop areas; test results and discussions of the sample areas are given in Table II.

Samples of igneous rock from four locations (Map Identification nos. 2, 3, 6, and 7, Plate II) were taken. Numbers 2 and 3 were obtained from small granitic intrusives in the southwest part of Barnet. The rock is quite hard and uniform, and meets abrasion requirements for Item 204, Sub-base of Crushed Rock. These are potential sources and are located about 4.8 and 3.0 miles respectively from Station 6263 of Interstate 91 near McIndoe Falls Village.

The Moulton metadiorite was sampled in Area nos. 6 and 7. (See Plate II)

The diorite is a gray to black metamorphosed fine-to coarse-grained rock, quite uniform and hard. It is exposed in a large face in Area No. 6, which is located adjacent to State Aid #3 about 1.2 miles east of U.S. Route 5 at East Barnet. The rock easily meets abrasion requirements for Item 204; and if a working face could be started and a crusher located at this site, it would be an excellent source for crushed rock. Area No. 7 is more remote; an access would have to be constructed from an existing town roal, and a heavily wooded area cleared. The rock meets abrasion requirements for Item 204. Area No. 7 is about 3.5 miles east of U.S. Route 5 at East Barnet.

Amphibolites and quartzites were sampled in Area No. 5 east of Barnet Village near the proposed location of Interstate 91. The amphibolite probably represents a metamorphosed igneous body within the Waits River formation; the quartzite sampled down strike (south) from the amphibolite, probably belongs to the Gile Mountain formation. Both samples met abrasion requirements for Item 204, and further investigation should be done to determine if a quarry could be located here. A schistose quartzite belonging to the Albee or Gile Mountain formations was sampled in Area No. 4, and a quartzose limestone of the Maits River formation was sampled in the northwest corner of the Town (Map Identification No. 1). Area No. 4 is not recommended as a source of crushed rock since it broke poorly in the field, and barely met abrasion requirements. Further testing should be done in the vicinity of Area No. 1 before it is recommended as a source. The rock was sampled along the strike, and should be re-sampled to the northeast, across the strike, and in the direction of its possible extension. This area is about 1.6 miles west of Passumpsic Village.

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, 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 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 Barnet are chiefly of lacustrine and ice-contact or glacio-fluvial origin. Small, widely scattered deposits are possibly of deltaic origin and others may be stream deposited.

The lacustrine sands and silty sands were deposited in a narrow glacial lake occupying the Connecticut and Passumpsic River valleys and their tributary valleys. Ice contact deposits of an earlier origin occur in the Passumpsic River valley south of Passumpsic Village. Dr. Stewart has defined these sand and gravel features along the east bank of the river as eskers. Possibly the features are kame terraces; however, insufficient evidence is available to make that judgement. At any rate, sands and gravels, often acceptable for highway usage, were deposited by streams flowing on or within stagnant glacial ice which occupied the valley.

One gravel of possible deltaic origin, and one feature described by Dr. Stewart as a 'Beach Gravel' deposit, was sampled in the town of Barnet. Other granular deposits occurring outside of the boundaries of glacially derived materials were sampled. Many of these are stony or sandy glacial tills. Other gravelly materials were deposited by streams.

Numerous pits are located in the foregoing features; small farm pits have been opened in the stony glacial tills, and the town of Barnet and the Canadian



Pacific Railroad own large pits along the Passumpsic River in the ice-contact deposits. All existing pits were sampled, as were other areas designated by Dr. Stewart or noted by the Survey Party.

SUMMARY OF ROCK FORMATIONS

IN THE TOWN OF BARNET

GRANITE

Medium-grained granodiorite, leucogranodiorite and quartz monzonite, composed of quartz, plagioclase, microcline biotite, and muscovite; also porphyritic granodiorite.

METADIORITE

Pale to dark green, fine-to coarse-grained metamorphosed diorite, consisting of plagioclase feldspar and hornblende. (The Moulton diorite, after Eric and Bennis, 1958.)

MEETINGHOUSE SLATE member of the Gile Mtn. formation

Gray to black slates with some biotite and local development of garnet. Also minor quartzite beds from 1/4" to 3" thick.

GILE MOUNTAIN FORMATION

Phyllite, slate, and micaceous quartzite in the biotite zone; quartz mica schist, micaceous quartzite, and phyllite in the garnet and staurolite zones; quartz-biotite gneiss, quartz mica schist, and micaceous quartzite in the sillimanite zone.

WAITS RIVER FORMATION

Gray quartzose and micaceous grystalline limestone, described by Leo M. Hall in the Vermont Geological Survey Bulletin, No. 13, 1959 as calcareous granulites, blue-gray in color, weathering black or brown. These are interbedded with quartz-mica schists or phyllites and minor micaceous quartzites. Also amphibolite composed of hornblende, plagioclase feld-spar, and minor amounts of garnet. Also the Crow Hill member, consisting of tough, gray quartzite, micaceous quartzites and quartz-feldspar granulites.

ALBEE FORMATION

Green chloritic slates and schists, green feldspathic schist, gray and greenish gray quartzites and micaceous quartzites, gray to black slate and fine-grained white mica schist.

GLOSSARY OF SELECTED GEOLOGIC TERMS

Alluvia1

Pertaining to material carried or laid down by running water.

Amphibolite

A metamorphic rock rich in amphiboles, which are gray-green to black silicate minerals with a shiny luster, hornblende being the most common, and also containing plagioclase feldspar.

Calcareous

Pertaining to or containing calcium carbonate.

Delta

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

Diorite

A coarse-grained, deep-seated igneous rock with interlocking grains containing plagioclase feldspar and a dark mineral, usually hornblende amphibole. When quartz is visible the rock is a quartz diorite.

Esker

A long, narrow, winding ridge of mixed sand and gravel deposited by a stream of meltwater flowing in a tunnel or crevasse in stagnant glacial ice.

Feldspathic

Pertaining to or consisting of feldspar, one of the rock-forming minerals.

Glaciofluvial.

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

Gneiss

A banded metamorphic rock with layers mineralogically different, and having minerals recognizable to the eye. Usually contains quartz and feldspar.

Gran boi offe

A coarse-grained, deep-seated igneous rock with interlocking grains containing plagioclase feldspar in excess over orthoclase feldspar, quartz, and one or both of the dark minerals biotite and hornblende amphibole. With decrease in plagioclase, the rock grades through quartz monzonite to granite. With decrease in orthoclase, the rock becomes a quartz diorite.

Granulite

A metamorphic quartz-feldspar rock, poor or lacking in mica, and characterized by a single, regular plane of schistosity. Its schistosity is due to a parallel arrangement of flat, coarse-grained quartz lenses in a finer-grained groundmass. May contain garnets.

Igneous Rocks

One of the three great rock classes; those rocks which have cooled and solidified from a hot mobile solution of minerals, water and gases, either deep beneath or at the earth's surface.

6

Intrusive

Igneous rock which has cooled before reaching the earth's surface - contains small to large visible grains. Opposed to extrusive-solidifying at the surface, and containing small unrecognizable grains.

Kame

A conical hill of stratified drift, deposited in contact with glacial ice by streams flowing in or on the ice.

Kame Terrace

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

Lacustrine

Of or pertaining to lakes.

Leuco

A prefix used before certain rock names to indicate a light color.

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 percent to more than 98 percent. Common impurities are clay and sand.

Mafic

A term applied to dark igneous rocks consisting predominantly of iron-magnesium minerals such as hornblende.

Meta

A prefix used before rock names to indicate that the minerals have been altered chemically and physically.

Metamorphic Rocks

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

Monzonite

An igneous rock of granular, interlocking texture composed mainly of plagioclase and orthoclase feldspar and one or more dark minerals. The two types of feldspar occur in approximately equal amounts and the monzonites may be regarded as forming connecting links between the diorites and syenites. Quartz is typically absent; when it is present the rock is called quartz monsonite.

Phy11ite

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.

Physiography

A description of nature or natural phenomena in general. Broadly it designates the study of the physical divisions of the globe-lands, seas and atmosphere; but most writers restrict it to the study of the surface features of the land.

Porphyritic

Having large crystals in a finer-grained or glassy ground-mass. An igneous rock description.

Quartzite

A compact metamorphic rock composed of quartz grains so firmly cemented that fracture takes place across them and the cementing material with equal ease.

Schist

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

Siliceous |

Containing or pertaining to silica (Silicon dioxide, Si 02) or partaking of its nature.

Slate

A very fine-grained homogeneous metamorphic rock.that splits smoothly along parallel cleavage planes and yields roughly similar slabs.

Strike

The direction of a line formed by the intersection of a horizontal plane with a bedding plane, fault, slaty cleavage, or similar geologic structure. It is at right angles to the dip.

Zone

An area or belt of rocks characterized by some particular property or content. For example, a biotite zone is an area with an extensive development of the mineral biotite in the metamorphic rocks. This development is due to a particular intensity of metamorphism.

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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

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	05
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:

Percent Passing					
95-100					
80-100					
70-100					
0-18					
0~5					

"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, crusherrun 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					
411	95-100					
11311	25-50					
1½" No. 4						
110. 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 grave! 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 miformly graded from coarse to fine.

"Men tested by laboratory methods, using Method AASHO E-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" No. 4	100 25-50
	Fine Graded Item 205-B	1½" No. 4	95 -1 00 30-60

"At least thirty (30) percent by weight of the stone content of the crushed grave1, 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 ($3\frac{1}{2}$) as determined by the colorimetric test described in the AASHO Method of Test, Designation T-21."

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	1211		% Pas	alysi sing #100		Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
1	1	1565	1 7	0 1	No		100	1	46.0	1	1			Owner: William Bona This is an area of knolls and fields on either side of Town Road #3. Test Hole #1, dug on north side of road on knoll. Material is a sandy silt, too fine for Item 105.
	2	1965	1-6.5	0-1	No	100	100	73. 5	33.0	9.0	1		Gran. Borrow	Test #2 taken on knoll on southside of road. Material is a silty sand till acceptable for Item 105.
	3	1965	1-6.5	0-1	No	100	100	64.8	30.0	9.0	1			Test #3 dug near buildings and cemetery on north side of road. Material is similar to Test #2, and is acceptable for Item 105.
2	1	1965	1.5-8	0-1.5	No	100	100	86.8	50.0	13.0 11.3*	1			Owner: Alfred Mulf This is a field across Town Road #8 from cemetery, Material sampled from one test hole was a silty sand till, too fine for Item 109
3	1	1965	1.5-12	0-1.5	Yes			73.2 tage (1.0 •73*	1 p1e		Sand	Owner: Alfred Wulf This is a 60'x95' pit on east side of Town Road #19, south of Water Andric. Test #1, taken from east face of pit, is a coarse sand with pebbles up to 2" in diameter, a gravelly sand, and meets VHD Spec-

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	0ver- burden (Ft.)	Exist- ing Pit	11/211		% Pas		is #270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1965	0-10	None	Yes	100	100	92.6	7.4	2.0 1.9*	1		Sand	ifications for Item 202. Test #2 sampled from floor of pit is a coarse sand with a few pebbles, accept- able for Item 202.
	3	1965	1-5.5	0-1	110	100	100	100	96.5	94.5 94.5*	1			Test #3 taken on kno11 110' east of the pit. Material is a hard-packed silty clay.
	4	1965	1-10	0-1	Νο	100	100	99•3	62.0	9.0 8.9*	1		Gran. Borrow	Test #4 was dug southeast of Test #3 on knoll. Material is a silty sand, acceptable for Item 105. Area #3 is located in a 'Beach Gravel' area as defined by Dr. Stewart. He has shown a patch of lake sands bounding his beach on the east and southeast. Extension of the pit would most likely be to the south.
4	1	1965	1-3.5	0-1	No	100	100	78.1	40.0	10.0 7.8*	11/2		Gran. Borrow	Owner: Joseph Zabroski This is a knoll east of Town Road #19. Material sampled was a sil- ty till, acceptable for Item 105.
5	1	1965	1-10	0-1	Yes		100		47.7	9.0 8.6*	1		Gran. Borrow	Owner: Harvey Somers A pit and adjacent field south of Town Road #23, 0.4 mile east of Danville Town Line. Test #1 dug 10 north of old pit.

TABLE I

Test	Field	Sample					% Pa	ssing		Color AASH0	Abrasion AASH0	Passes VHD		
140.	rested	(Ft.)	(Ft.)	Pit	1/211/5	5/8"	#4	#100	#270	T-21	T-4-35	Spec.	Remarks	
2	1965	1-7	0-1	Yes	98.49	93.0	79.8	18.4	5.0 4.0*	1		Gran. Borrow	Material is a fine silty sand, which becomes slight ly coarser with depth. Test #2 sampled from face of old pit is a gravelly sand, barely failing for	
3	1965	1-9.5	0-1	No	74.36	5 4. 5	53.0	6.0	10.0 5.3*	1	41.5%	Gran. Borrow	Item 202, Sub-base of Sand Test #3 taken from knoll north of the old pit, encountered a silty, gravelly material with many large angular stones. The sandy material sampled from near the pit may be an extension of Dr. Stewarts 'Lake Sands', or possibly only a very small patch of reworked sandy till. The gravelly material is probably a	
2	1965	1-3	None	Yes No	89.17	71.7	55•5	24.0	5.7* 6.0 3.3*	1	22.8%	Gran. Borrow (Sand)	owner: Neal Stuart A sample taken in the floor of a shallow 90'x40' pit located on the west side of Town Road #26, had excess very fine sand and silt for Item 202. Test #2 taken west of pit where terrain drops off toward Joe's Brook. Material is gravelly, but has excess fines for Item 201, and a high color re-	
THE RESERVE THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN	2 3	Test Field Tested 2 1965 3 1965 1 1965	Test Field Sample (Ft.) 2 1965 1-7 3 1965 1-9.5	Test Field Sample (Ft.) 2 1965 1-7 0-1 3 1965 1-9.5 0-1	Test Field Sample (Ft.) ing (Ft.) in	Test Field Sample (Ft.) Sample ing (Ft.) Pit 11-211.9 2 1965 1-7 0-1 Yes 93.44 3 1965 1-9.5 0-1 No 74.36 1 1965 0-6.5 None Yes 100 1 2 1965 1-3 0-1 No 89.17	Test Field Sample (Ft.) Sample (Ft	Test Field No. Field (Ft.) Sample (Ft.) Pit 11/211/5/811 #4 2 1965 1-7 0-1 Yes 98.493.0 79.8 3 1965 1-9.5 0-1 No 74.364.5 53.0 1 1965 0-6.5 None Yes 100 100 94.9 2 1965 1-3 0-1 No 89.171.7 55.5	Test No. Field Sample (Ft.) Sample (Ft.) Field (Ft.) Field (Ft.) Fig. (Ft.) F	Test Field No. No. Field No. No.	Test No. Field Sample (Ft.) burden (Ft.) Pit 1/2/1.5/8" #4 #100 #270 T-21 2 1965 1-7 0-1 Yes 98.493.0 79.8 18.4 5.0 1 3 1965 1-9.5 0-1 No 74.364.5 53.0 6.0 10.0 1 5.3** 1 1965 0-6.5 None Yes 100 100 94.9 30.4 6.0 5.7** 2 1965 1-3 0-1 No 89.171.7 55.5 24.0 6.0 5	Test Field No. Tested (Ft.) Sample (Ft.) Pit 1/2 5/8" #4 #100 #270 T-21 AASHO AASHO T-4-35 2 1965 1-7 0-1 Yes 90.493.0 79.8 18.4 5.0 1 3 1965 1-9.5 0-1 No 74.364.5 53.0 6.0 10.0 5.3% 1 41.5% 1 1965 0-6.5 None Yes 100 100 94.9 30.4 6.0 5.7% 1 2 1965 1-3 0-1 No 89.171.7 55.5 24.0 6.0 3.3% 5 22.8%	Test Field No. Field N	

Map						=			, III U	TIA SHE	EI NO. 4	•		
Ident.	Field Test	Year Field	Depth of		Exist-	1	Sie	ve An	alysi	s	Color	Abrasion	Passes	
No.	No.	Tested	Sample	burden	3			% Pas			AASHO	AASHO	VHD	
110.	100.	rested	(Ft.)	(Ft.)	Pit	11/211	5/8"			#270	T-21	T-4-35	Spec.	Remarks
	3	1965	1-8	0-1	Yes	100	100	98.5	37.0	8.5 8.4*	1		Gran. Borrow (Sand)	Item 105. Test #3 dug in second small pit on east side of road. Material is silty sand unacceptable for Item 202-has excess passing the #100 and 270 mesh sieves. This area is at the edge of Dr. Stewart's 'Lake Sands' above Joe's Brook, which occupied a tributary valley of the Connecticut and Passumpsic River valleys when narrow glacial lakes
7 L	1	1965	13-23	0-13	Yes	100	100	96.3	5.8	1.75 1.7*	1		Sand	filled them. Owner: Gordon Fenoff This is a small pit on the northeast side of State Aid #5 near the Danville Town Line. Area is on the south side of Joe's Brook in deposits mapped as 'Lake Sands'. Test #1, sampled from face
	2	1965	0-10.5	None	Yes		100		!	15.0%				of pit, encountered a coarse sand, acceptable for Item 202. Test #2, dug in floor of pit, was a sandy silt, rejected for Item 105.
	3	1965	0-10-5	None	Ио		92.8 ercent			4.0 3.5*) ple		Gran. Borrow (Sand)	Test #3 was dug in stripped sand area behind owner's house. Material is a fine sand with excess pebbles retained on the 1½" sieve for acceptance

Map Ident.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	11/211	% Pa	ssin	1ysis g #100	#270	Color AASHO T-21	Abrasion AASHO T-3-35	Passes VHD Spec.	Remarks
NO.	NO.	rested												More testing should be done between the pit and the sand area. Back of pit was inaccessible to backhoe. Possibly other tests sampled from the sand area would be acceptable for Item 202; if not, screening would obtain satisfactory material.
8	2	1965 1965	1-6.5	0-1	No	100	100	100		17.0 17.0*	1			Owner: Austin Whitehill Area is two knolls north of a small pit on State Aid #5. Test #1, dug farthest north from pit, is a sandy silt, having a coarse sand portion with excess very fine sand and silt for Items 202 and 105. Test #2 dug on knoll just north of pit, and repre- sents its extension. Material is a silty sand with excess fines for Items
9	1	1965	1-8	0-1	No		0 100 Perce			8.75% otal Sa			Gran. Borrow	Owner: Winston Adams This is field between Town Road #26 and Joe's Brook. Test #1 was dug on small knoll near brook. Material is a silty sand, acceptable for Item 105.

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit			Passi		is #270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1965	0.5-10	0-0.5	No	-	100	100	-	25.0 24.6	1			Test #2 was taken 170' southwest of Town Road #26. Materia! is silt, unac- ceptable for Item 105.
10	2	1965 1965	1-5-5	0-1.5	No No		773 . 4			15.0 9.3* 14.3 9.2*	21/2			Owner: Melvin Benway This is a wooded knoll on the north side of Town Road #33. Both samples were of grav- elly material with excess fines for Item 105. Deposit is probably a stony till.
11	1	1965	1.5-9	0-1.5	No		100	100		12.0 12.0*	1			Owner: Lyman Corriveau Area is knoll behind cwner's house at junction of State Aid #5 and Town Road #34, Test #1 encountered a silty sand going to silt- clay at 91. Material has excess pas- sing the #270 mesh sieve for Item 105.
	2	1965	1.5-9.5	0-1.5	No	100	100	100	42.7	4.3 4.2*	1		Gran. Borrow (Sand)	Test #2 was taken about 150' north of Test #2. Material is stratified very fine sand and fine sand. Has excess passing the #100 mesh sieve for Item 202.
	3	1965	1-11	0-1	No	100 * Pe		100 tage		9.0* ta1 San	1 mp1e	1	Gran. Borrow (Sand)	Test #3 dug 125' west of Test #2.

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	150		- % P	Analy assin		Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	4	1965	1-8.5	0-1	No	100	100	100	48.0	18.0*				Material is a very fine silty sand, acceptable for Item 105. Test #4 dug 150' east of Test #1. Material is a sandy silt, bottoming in boulders or ledge at 0.5'. Area #11 is located in what is mapped as 'Lake Sands', by Dr. Stewart.
12	1	1965	27 -33	None	No	77.9	56.6	41.0	19.0	8.0 3.3*	1	15.2%	Gran. Borrow (Grav.)	Owner: Guy Lindsay This is a bank beside State Aid #5 about 0.5 mile west of U.S. Route 5. Top 27' of face could not be sampled; however, ma- terial appears to be the same as that tested. Material is gravelly, but has excess very fine sand and silt for Item 201. Gravel may be of fluvial origin, or possibly kamic material, deposited at the side of the tributary valley by a narrow lobe of glacial ice.
13	1	1965	1-6	0-1	No	100		100		19.0*	1½ mp1e			Owner: Burns Goss This is an area on Stevens Brook near the junction of Town Road #7 and State Aid #1. Test #1 dug on knoll on

		1.4	1 2	Tour	LEuin		534	Ar	nalysi	10	Color	Abrasion	Passes	
Map		Year Field	Depth of Sample	Over- burden	Exis /-	1		Pass		ъ,	AASHO		VHD	
Ident.				(Ft.)		11/211	15/8	1 #ls	#100	#270	T-21	T-4-35	Spec.	Remarks
No.	No. 2	Tested	1-10	0-1	No		100			6 4.0*	1		Gran. Borrow (Sand)	southeast side of brook. Material appears to be stratified-consists of fine sands and silts-too fine for Item 105. Test #2 taken on knoll on northwest side of brook. Material is a coarse sand, but with excess passing the #100 mesh sieve for Item
	3	1965	1-4	0-1	No	100	100	98.6	39.0	21.0 20.7*	1			202. Test #3 dug near brook, on northwest side. Material is silt or sandy silt, unacceptable for
	4	1965	1-5	0-1	No	100	100	67.4	25.0	6.5 4.4*	1		Gran. Borrow	Item 105. Test #4 dug in field below cemetery. Material is sand with
	5	1965	1-4.5	0-1	No	100	100	98.8	20.7	7 5.0 4.9*	1	1	Gran. Borrow (Sand)	broken stones, a stony till. Is acceptable for Item 105. Test #5 dug 220' from and closer to Stevens Brook than Test #4.
						* [Percei	ntage	of To	otal Sam	nmp1e			Material is a fine sand, but with excess passing the #100 mesh sieve for Item 202. This area could possibly be included within Dr. Stewart's 'Lake Sands'. Material varies in each test hole from silts to coarse sands, which implies some sorting.

Map Ident.	Field Test	Field	Depth of Sample	Over- burden	Exist-		%	Passi			Color AASHO	Abrasion AASHO	VHD	
No. 14	No. 1	1965	0.5-9	(Ft.) 0-0.5	Pit No	100	100	85.3	28.7	3.4* 8.0	T-21 1	T <u>-</u> 4-35	Gran. Gran. Gran. Gran.	Remarks Owner: Mrs. F. H. Somers Area is a low knoll at the junction of Town Road #63 and State Aid #1. Knoll has 20-30' of relief. Material of Test Hole #1 is a fine sand (passing the 100 mesh sieve) for Item 202. Many very small pebbles noted. Goes to sand with- out stones toward bottom. Test Hole #2, dug north of Test #1, encountered a
										7.0%			Borrow (Sand)	silty sand, too fine and silty for Item 202. Area #14, as well, could probably be included in Dr. Stewart's 'Lake Sand', area, which he has defined as occurring east of Cloud Brook and in the valley of Stevens Brook.
15	1	1965	0.5-3	0-0.5	Yes	91.1				19.5 14.9*	np1e			Owner: Richard Somers Area is a small pit and knoll on the west side of Town Road #48, just north of State Aid #2 and Stevens Brook. Test #1 taken in floor of pit. Material is a silty sand with pebbles and a large boulder at 3' and has excess silt for Item 105.

Map Ident. No.	Field Test Mo.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	11/211		% Pas	alysi sing #100		Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	3	1965 1965	0.5-7	0-0.5	No No		100	72.3	34.0	9.0	1 11/2		Gran. Borrow	Test #2 dug in field below pit, near brook. Material is a silty sand with very small pebbles and rock fragments. Is acceptable for Item 105. Test #3 dug on side of knoll north of and above pit. Silty sand with a large boulder was encountered. Area #15 is probably a deposit of glacial till reworked by Stevens Brook.
16	1	1965	0.5-9	0-0.5	No	84.8	373.3	62.8	36.0	10.5 6.6*	1	1	Gran. Borrow	Owner: Mrs. Goldie Aiken This is a low knoll on the south side of State Aid #2 beside Peacham Hollow Brook. The one sample consisted of a silty, gravelly sand with too few stones for Item 201. Deposit may be of fluvial origin, since area is near junction of two streams.
17	1	1965	1-8.5	0-1	No	100 * Pe			33.0 of Tot	10.0 8.6*	1 p1e		Gran. Borrow	Owner: Lyman Crown Test area is a low knoll on the west side of Town Road #60, north of West Barnet Village. Material sampled is a silty sand-probably a sandy, glacial till-

Map Ident.	Field Test	Year Field	Depth of Sample	Over- burden	Exist- ing			ive Ana % Passi			Color AASHO	Abrasion AASH0	Passes VHD	
No.	No.	Tested	(Ft.)	(Ft.)	Pit	11/211	5/8		#100		T-21	T-4-35	Spec.	Rema r ks
	 '			-	-			<u> </u>						acceptable for Item 105.
18	1	1965	1-7	0-1	Yes	100	100	96.6	30.0	6.0 5.8*	1		Gran. Borrow	Owner: Roy Hastie Test taken on knoll above old pit on the south side of Town Road #81, east of West Barnet Village. Material is a silty sand acceptable for Item 105.
19	1	1965	1-7	0-1	No	100	100	75.1	30.0	9.25 6.9*	1		Gran. Borrow	Owner: Edgar Strobridge Test taken on northwest side of State Aid#I on hillside. An old pit is located above the test hole, but large boulders and steep slope pre- vented backhoe from getting into it. Material sampled is a silty sand with small rock frag- ments or pebbles, and is acceptable for Item 105. Deposit is probably a sandy glacial till.
20	2	1965	1-4.5	0-1	Yes		100	S A M	48.0	15.3 14.2*	2 ¹ / ₂			Owner: Edward H. Jewett Area is an old pit on the north side of State Aid #I in West Barnet. Test #1 dug in floor of pit, hit bedrock at 1.5 feet- not sampled. Test #2 was taken a few feet north of pit face in direction of pit extension. Material is a sandy silt, with a few very small stones and is unacceptable for Item 105.

10.	Tested	(Ft.)	burden (Ft.)	Exist- ing Pit	11/11		% Pas	nalysi ssing.		Color AASHO	Abrasion AASHO	VHD	
1		(1.00)	(1 6.5)	116	1.5.	5/0.	#4	#100	#2/0	T-21	T-4-35	Spec.	Remarks Bed rock hit at 4.5 feet.
	1965	1-9	0-1	No	100	100	64.4	47.0	10.0 6.4*	11/2			Owner: Wendell Achilles Test was taken on knoll east of State Aid #4 in the south- west part of town. Material is a silty sand with pebbles- probably a sandy till Acceptable for Item 105.
	1965	1-3	0-1	No	100	100	85.0	41.0	15.0 12.8*	2			Owner: Lawrence Davidson Test was taken on knoll on north side of Town Road #86, 0.6 mile east of State Aid #4. Material is a silty sand with stones, too silty for Item 105
	1965	0-3	None	Yes	31.2	2 74.	1 58.	5 23.0	6.0 3.5*	1		Borrow I	Owner: Elmer Ferris This is a 100 foot by 60 foot pit on the west side of Town Road #74 south of Harvey Lake. Test #1, taken from pit floor encountered a gravelly mater- tal with excess very fine sand and silt for Item 201. Bed-
Α	1965	1-4.5	0-1	Yes	93.4	77.1	61.8	26.0	7.0 4,3*	11/2	1	Gran. T Borrow p M w a	cock and water at 3 feet. Test #2A taken in west face of Test it. Test a gravelly sand, Test ith minor but excess silt, Test nd too few stones for Item O1.
В	1965	4.5-7	0-4.5	Yes					3.70*		1	Borrow for Samuel	est #2B taken on lower west ace below #2A. ample had excess material assing the 100 and 270 mesh ieves for Item 202.
В		1965	1965 4.5-7	1965 4.5-7 0-4.5	1965 4.5-7 0-4.5 Yes					3.70%		3.70*	1965 4.5-7 0-4.5 Yes 100 100 97.9 26.0 3.75 1 Gran. Borrow f. S. p.

TABLE I

No. Tested (Ft.) (Ft.) Pit 14 5/8 #4 #100 #270 T-21 T-4-35 Spec. Remarks This deposit shows some stratification and may be a fluvial deposit laid down in an ancient stream flowing north from Blue Mountain through Harvey Lake and down Stevens Brook. 24 1 1965 1.5-15 0-1.5 Yes 100 100 88.7 38.0 17.0 1 Owner: Leonard Roy Area is a pit on the north side of Town Road #91 west of Jewett Brook and south of Harvey Lake. Test #1 sampled from 15 feet north face, consisted of very fine sand with silty layers; is a sandy silt unacceptable for Item 105. 2 1965 0-10 None Yes 100 100 68.0 17.7 6.0 1 Gran. Test #2 was taken from floor Borrow of pit. (Sand) Material is a fine white sand, but with excess retained on the #4 screen for Item 202. Pit is small and is in a wooded area.	Map	Field	Year	Depth of		Exist-				Ana 1	ysis	Color	Abrasion		
This deposit shows some stratification and may be a fluvial deposit laid down in an ancient stream flowing north from Blue Mountain through Harvey Lake and down Stevens Brook. 24 1 1965 1.5-15 0-1.5 Yes 100 100 88.7 38.0 17.0 1 Owner: Leonard Roy Area is a pit on the north side of Town Road #91 west of Jewett Brook and south of Harvey Lake. Test #1 sampled from 15 feet north face, consisted of very fine sand with silty layers; is a sandy silt unacceptable for Item 105. Test #2 was taken from floor Borrow of pit. (Sand) Material is a fine white sand, but with excess retained on the #4 screen for Item 202. Pit is small and is in a wooded area. Deposit is of unknown extent, possibly only a very local accumulation laid down in quiet water occupying the small valley south of Harvey Lake. Probably of same origin as sandy and gravelly material of Area #23. Owner: Calvin Bogie	Ident.	Test No.	Field Tested	Sample (Ft.)	burden (Ft.)	ing Pit	11/211	5/8"	% Pas #4	sing_ #100	#270	AASHO T-21	AASH0 T-4-35	VHD Spec.	Remarks
Area is a pit on the north side of Town Road #91 west of Jewett Brook and south of Harvey Lake. Test #1 sampled from 15 feet north face, consisted of very fine sand with silty layers; is a sandy silt unacceptable for Item 105. Gran. Test #2 was taken from floor Borrow of pit. (Sand) Material is a fine white sand, but with excess retained on the #4 screen for Item 202. Pit is small and is in a wooded area. Deposit is of unknown extent, possibly only a very local accumulation laid down in quiet water occupying the small valley south of Harvey Lake. Probably of same origin as sandy and gravelly material of Area #23. NOT SAMPLED Owner: Calvin Bogie Owner: Calvin Bogie															stratification and may be a fluvial deposit laid down in an ancient stream flowing north from Blue Mountain through Harvey Lake and
Harding the state of the state	24				0-1.5	Yes					15.1*	1			Area is a pit on the north side of Town Road #91 west of Jewett Brook and south of Harvey Lake. Test #1 sampled from 15 feet north face, consisted of very fine sand with silty layers; is a sandy silt unacceptable
NOTSAMPLED Owner: Calvin Bogie		2	1965	0-10	None	Yes	100	100	68.0	17.7		1		Borrow	Test #2 was taken from floor of pit. Material is a fine white sand, but with excess retained on the #4 screen for Item 202. Pit is small and is in a wooded area. Deposit is of unknown extent, possibly only a very local accumulation laid down in quiet water occupying the small valley south of Harvey Lake. Probably of same origin as sandy and gravelly
	25	1													Owner: Calvin Bogie

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	TABLE	Ī			BAKNEI	GRANC	JLAK I	DATA	ושמחכבו	140				
Map Ident.	Field Test	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	11/211	- %	e Ana Passi #4	ng	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
No.	NO.	rested	((())	(1007)			<i>51</i> °							side of Town Road #63 north of Town Road #81. Test hole was started, but hit bedrock at 1 foot.
26	1	1965	1-4.5	0-1	No	100	100	62.6	31.0	7•5 4•7*	2		Gran. Borrow	Owner: Calvin Bourtelle Material sampled in Test #1 was a silty and sandy glacial till. Deposit may possibly have been reworked by stream action. Material is acceptable for Item 105, but is of un- known extent.
27	1	1965	1-10-5	0-1	No	100		100		9.0*	1 ¹ 2		Gran. Borrow	Owner: Claude Somers Area consists of nearly- flat knolls beside cemetery and west of Town Road #94 near McIndoe Falls. A small old pit about 0.2 mile south of knolls is in- cluded. Test #1 dug on knoll north- west of cemetery. Material is a very fine silty sand too fine for Item 202.
	2	1965	1-11	0-1	Ио	100	100	100	40.0	8.0*	1			Test #2 was sampled west of cemetery. Material from 1'-7' is silt or sandy silt; from 7'-11' a fine white sand noted. Composite is a fine silty sand.
	3	1965	1-11	0-1	No					13.0 * tal San				Test #3 was taken 500 south

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	IABLE				D/ 11/11/21									
Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over burden (Ft.)	Exist- ing Pit			Ana 1y Passi #4	ing	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Rema r k s
	ц	1965	1-11.5	0-1	No	100	100	100	68.0	8 .0 *	1		Gran. Borrow (Sand)	of Test #2 at west end of large knoll. Material is a very fine silty sand, almost a sandy silt, and is too fine for Item 105. Test #4 from east end of large flat knoll consisted of silty sand material, too fine for Item 202. The knolls and cemetery are located near the west edge of Dr. Stewart's 'Lake Sands' deposited in the Connecticut
	5	1965	0.5-10.5	0-0.5	Yes	76.2	62.0	50.2	2 23.0	0 6.0 3.0*	15	33.6%	Gran. Borrow (Grav.)	Valley glacial lake. Materials sampled were very fine silty sands, and may possibly cover coarser sands. Test #5 was dug above old pit in material mapped as lake sands by Dr. Stewart. Gravel was encountered with about 23% coarser than 2½ inches in diameter, and containing some silt
	6	1965	0.5-5	0-0.5	No	79.1	66.	50.	36.0	0 13.0 6.6*	2		Gran. Borrow (Grav.)	containing some silt. Has excess silt and wear for acceptance as Item 201. Test #6 was taken west of Test #5, along woods road. Material is finer and silt- ier than Test #5- a silty gravel, and was rejected for Item 201. Tests #5 and #6 were taken
				8		 * Per	centa	ge of	 Tota	al Samp	1e			in probable delta deposited by two streams which now

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Map Ident.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit		Sieve % 2''5/8''	Passi i	ng	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														flow into the Connecticut River, and which previously entered a glacial lake occupy ing the valley. And in the opinion of the materials survey party, Dr. Stewart's mapped 'Delta Gravel' should be located to the east and southeast at a lower eleva- tion. Further testing should be done in the area, west of Town Road #94 and south of cemetery knolis.
28	2	1965	1-12.5	0-1	No	100	100	94.9		11.0 10.4*	11/2		Gran. Borrow	Owner: Melvin Colby Area is sloping field above U.S. Route #5 at south edge of McIndoe Falls Village and is next to proposed I-91 location. Test #1 sampled near north end of fields, consisted of a gravelly material with slightly excess silt for Item 201. This material was sand and small pebble-size fragments. Test #2 was taken 90 feet from edge of U.S. Route 5 within area included in Dr. Stewart's 'Lake Sands'. Material is a very fine silty sand, unacceptable for Item 105.
						* P	ercent	age o	f Tot	al Samp	ole			

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Map Idnet. No.	Field Test	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit		Siev % Pa 5/8"		•		Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	3	1965	1-6.5	0-1	No	100	100	97•7	54.0	17.0 16.6*	1			Test #3 was sampled south of Test #2 near edge of highway. The contact between the lake deposits and unstratified material is shown crossing U.S. Route 5 from southeast to northwest, and Test #3 is located south of the contact, but very close. Material tested is a sandy silt, bottoming in silt clay and may be lake deposits; however, are not coarse enough for Items 105 and 202.
29	1	1965	1-8.5	0-1	No	100	100	98.3	58.0	17.0 16.7*	2 ¹ 2			Owner: Merwin Pearl Area is large field behind (east of) McIndoe Academy. It is part of a terrace of lake sands deposited in the glacial lake in the Connect- icut Valley. Test #1 taken from south end of field consisted of sandy silt-rejected for Item 105.
	2	1965	1-8	0-1	No	100	100	81.8	5.7	3.0	1		Sand	Material acceptable for Item 202-a coarse to very coarse pebbly sand-was sampled about 0.1 mile north of Test #1 along railroad tracks. Hole goes to silty sand or silt in bottom.
	3	1965	1-10	0-1	No		95.8 Percen	ļ		0.8 0.6* tal San	•		Sand	Test #3 was taken about 0.1 mile north northeast of Test #2 toward north end of terrace

TABLE I

BARNET GRANULAR DATA SHEET NO. 18

Map Ident. No.	Fiel! Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit		- %	Anal Passi #4	ng		Color AASH0 T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	4	1965	1-6	0-1	No	96.	185.8	65.6	2.6	2.3 1.5*	1		Mark Comment of the C	Material is a very coarse pebbly sand going to silty sand in the bottom of hole. Test #4, sampled 0.1 mile east of Test #3 near east side of terrace, was a gravelly sand with excess stones for Item 202. Hole bottoms in silt or silt clay. Area would be an excellent source for Items 105 and 202. More testing should be done in the area, especially toward the east side.
30		1965	1-10	0-1	No	100	100	94.7	14.2	3.5 3.3*	1		Sand	Owner: Melvin Colby This is continuation of Area #29. Test #1 was taken northeast of Test #2-Area #29. Access is via Town Road #95 from McIndoe Falls Village. Sample was taken at north end of 0.2 mile long field. Material is a fine sand acceptable for Item 202. This area would be an extension of Area #29-lake sands deposited in the Connecticut Valley glacial lake and left as a large terrace above the present river.
31	1	1965	1-12	0-1	No		100 rcent	91.0 age of	16.4 Tota	4.0 13.6*	1		Sand	Owner: Claude Somers

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit			Anal Passin	#270	Color AASH0 T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1965	1-12	0-1	No	100	100	100	5•3*	1		Gran. Borrow	Area is field on west side of U.S. Route 5 at north end of McIndoe Falls Village. Test #1 dug behind(southwest of) farm buildings, in field which is located in Dr. Stewart's 'Lake Sands'. Material sampled is a fine sand with a few very small pebbles. Proposed location of I-91 passes just west of Test #1. (Area would be close source for Items 202 and 105.) Test #2 was dug in north end of field 50 feet west of Southbound Station 823+0. (Station to be renumbered later.) Material is a very fine silty sand unacceptable for Item 202.
	3	1965	7-11	0-7	No		100 ge of	100	2.5*	1	चं ∯. का तं	Sand	Test #3 taken west of South-bound Station 819+0. Top 7 feet of material is a silt or silty sand; from 7 - 11 feet is a very fine sand acceptable for Item 202. The edge of the lake sand deposits is clearly defined on the north by an erosional scarp showing sands and silts Its west edge is less well defined, but is probably located just east of Town Road

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Ident	Field •Test	Field	Depth of Sample	burden	Exist-		- %	Analy Passi	ng	#270	Color AASHO	Abrasion AASHO	VHD	Rema rks
No.	No.	Tested	(Ft.)	(Ft.)	Pit	2	5/8"	#4	#100	#2/0	T-21	T-4-35	Spec.	#81
														More tests could be taken o this large field to better determine quality and quant ity of granular materials.
32	1	1965	0.5-10.5	0-0.5	No	100	100	100	50.0	14.0*	1			Owner: Albert Gilmour Area is quite flat land wes of and above owner's build- ings on U.S. Route 5 south of Barnet Village. Test #1 was sampled near drainageway, 600 feet north west of buildings, and near east edge of flat area. Material is a sandy silt too fine for Item 105.
	2	1965	1-3.5	0-1	No	100	100	100	20.0	5•0*	1		Gran. Borrow	Test #2 taken about 1300 feet southwest of Test #1, and about 85 feet east of Base Line Station 890+0. (Station to be renumbered.) Material is a silty sand, acceptable for Item 105. Bedrock hit at 3.5 feet.
	3	1965	1-3.5	0-1	No	100	100	100	98.0	96.5	2			Test #3 sampled from 55 fee west of Base Line Station 883+0. Material is A-7-6 clay un- acceptable for Item 105.
	4	1965	1-5.5	0-1	No	100	100	95.2	6.7	2.3 2.1*	1	÷	Sand	Test #4 taken about 560 feed north of Test #1 near north end of flat pasture land. Material is a coarse sand for 5.5 feet bottoming in silt or silty sand.

TABLE I

Map Ident	Field	Year Field	Depth of	Over- burden	Exist-		Sfe		nalysi ssing	s		Abrasion AASHO	Passes VHO	
No.	No.	Tested		(Ft.)	1 -	The	5/820			#270	T-21	T-4-35	Spec.	Remarks of and above outlines of "Lake Sands" as mapped by Dr. Stewart. Wicinity of Tests# and #4 may possibly be a patch of lake sediments overlying silty-end sandy till, or a gramular till from which much of the clay-and silt size has been washed by a stream just north of the flat area. Tests #1 and #2 are in a till deposit.
33		1965	1-8.5	0-1	No	100	100	93.2	22.4	6.0 5.6*			Barrow	Owner: Reginald Moore Area is along Stevens Brook east of Barnet Village. Test Hole #1 was dug at in- tersection of Town Road nos, 57 and 58, and near inter- section of a tributary stream embering Stevens Brook. Material is a very fine silty
	2	1965	1-10	0-1	No		100 ercen			4.3±	ple		Borrow (Sand)	Test #2 dug in field above houses located on Town Road #57. Test is about 250 feet south southeast Northbound Station 6417+50 on I-91. Material is a very fine sand, too fine for Item 202, but becoming somewhat coarser helow 5 feet.

	Field .Test No.	Year Field Tested	Dapth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit			Sieve % Pa #4	ssing		Color AASHO T-21	Passes VHD Spec.	Remarks
	3	1965				CN		SAM					Test Hole #3 dug northeast of Test #2. Material is a silt-clay, and was not sampled. This area is not included in 'Lake Sands' as mapped by Dr. Stewart. However, due to its location in a tributary valley, it is possible they are of lacustrine origin, and have escaped erosion.
34	1	1965	1-8	0-1	No	87.9	74.6	63.9	42.0	13.5 8.6*	1	 	Owner: Ernest Cheney This is a sidehill field on the east side of Town Road #59 at Barnet Village. Material is a silty sand with too few stone for Item 201, and excess silt for Item 105. Boulders or bedrock hit at 8 feet. Material is probably a stong glacial till reworked some- what by streams.
35	1	1965	1-9.5	0-1	No	100		100		45.0% tal San		 	Owner: Albert Gilmour Area is long field beside Connecticut River north of Barnet Village. Test #1 was taken at south end of field near contact between 'Lake Sands' and alluvial material as mapped by Dr. Stewart.



	Field t.Test	Year Field Te s ted	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit	11/11		eve Ai % Pas:			Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
NO.	2	1965	1-8	0-1	No		100	100		13.0*				Material is a silty sand- rejected for Item 105. Test #2 taken .15 mile north of Test #1. Material is a sandy silt-re- jected for Item 105.
	3	1965	1-11	0-1	No	100	100	100	34.6	7•5 7•4*	1			Water in bottom of hole. Test #3 sampled .25 mile north of Test #2. Material is a silty sand similar to other tests.
	4	1965	7.5-11	0-1	No	60.	8 42.5	27.1	19.0	6.0 1.6*	12	13.6%	Borrow	Test #4 is a gravel with a very fine silty sand matrix and fails to meet VHD Specifications for Item 201. Overlying gravel is a 7.5 feet layer of silt or silty sand.
	5	1965	1-11	0-1	No		100 ercent	100		7.0* al Samp	1 1e		Borrow	Test #5 taken near north end of field, encountered a silty sand, too fine for Item 202. Area is within a deposit of lake sediments, too fine for Item 202. Gravel sampled may be of kamic origin, deposited at the margin of glacial ice before it retreated. The fine sediments were laid down later in the lake that filled the valley. Further exploration should be done in the vicinity of Test Hole #4 to determine extent of deposit.

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	Field	Year	Depth of	Over-	Exist-			eve A			The state of the contraction of the state of	Abrasion		1
	.Test	Field	Sample	burden	ing		- '0	_ % Pa	ssing		AASH0	AASH0	VHD	
	No.	Tested	(Ft.)	(Ft.)	Pit	1/21	5/8"	#4	#100	#270	T-21	T-4-35	Spec.	Remarks
36	1	1965	0-12.5	None	Yes	100	94.6	85.3	21.3	3.0 2.6*	1			Owner: Mrs. Hazel Shute A small pit located on the north side of State Aid #1 near Barnet Center, on Stevens Brook. Pit is located in a deposit of lake sediments, denoted by Dr. Stewart as 'pebbly sands'. Pit is shallow and sample consisted of a very fine sand going to a silty sand in the bottom where bedrock or boulders were hit. Sand has excess passing the #100 mesh sieve for Item 202. Sand contains small pebbles.
37	1	1965	1-3.5	0-1	No	100	100			2.0*	1			Owner: Ora Bailey (Malaren) This is a field on the east side of U.S. Route 5 on the south edge of East Barnet Village.
	2	1965	1-4	0-1	No		100		8.4	1.9*	1		Sand	Tests #1 and #2 sampled near the east side of the field were coarse sands, but very shallow, overlying silt or clay.
	3	1965	1-6.5	0-1	No		100			16.0* al Samp	1 1e			Test #3 was taken on side of sandy pasture south of field. Material is a sandy silt, unacceptable for Item 105. This area is within 'Lake Sand' as mapped by Dr. Stewar It is located above the junc-

	Field .Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit		5/8"	. % Pa	nalys ssing #100		Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														tion of the Passumpsic and Connecticut Rivers. Possibly coarser materials could be found with depth, and if an access could be found along the railroad tracks, this would be the area to investigate.
38	1	1965	1-12.5	0-1	No	100	100	100	59.0	8.0*	1			Owner: Donald Larocque This is a probable lake sand terrace on the west side of the Passumpsic River on Town Road #12. Test #1 taken near south end of terrace of Southbound Station 6592+0 of I-91. Material is a very fine silty sand too fine for Sub-base
	2	1965	1-5	0-1	No	100	100	83.1	28.0	11.0 9.1*	1 ¹ 2			of Sand, Item 202. Test #2 is a sandy silt sampled in upper field i.e. above terrace, north of Test #1. Material failed for Item 105. Ledge hit at 5 feet. Probably is a till outside the lake-
	3	1965	1-11	0-1	No	100	100	100	66.0	10.0	1		Gran. Borrow (Sand)	deposited materials. Test #3 taken on terrace near gorge formed by stream. Material is a very fine silty sand unacceptable for Item 202.
	4	1965	1-11.5	0-1	No	i	100 ercent	100						Test #4 dug across Town Road #12 in field. Material is a silt unaccept-

Map Ident No.	Field .Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit			eve A % Pas	sing_		AASHO		VHD	
140.	140.	Tested	(100)	(Ft.)	PIC	1-511	5/0"	#4	#100	#2/0	T-21	T-4-35	Spec.	Remarks able for Items 105 and 202.
39	2	1965	1-6.5	0-1	No		100	71.0		10.8 7.2*	2			Owner: Lee Larocque This is rolling land mapped by Dr. Stewart as 'Pebbly Sands'. Test #1 was dug in pasture west of owner's house. A silty and sandy till with broken rock fragments was encountered-rejected for Item 105. A-7-6 clay was sampled in Test Hole #2, dug southeast of Test #1 and near edge of
40	1	1965	1-8.5	0-1	No	100	100	63.3	47.0	14.3	1		•	steep wooded slope going down to river. Owner: Homer Fuller Area is field south of owner's house near junction of Town Roads #12 and #15,
						* F	ercen	tage	of Tot	al Sam	ple			and near proposed location of I-91. Material is a silty sand with angular, sharp small stones, too silty for Item 105. This area and Area #39 are within Dr. Stewart's pebbly sand area, which is shown on Plate I. However, field observations, air photo reconnaissance, and test results indicate that material is silty and clayey

Ident	Field Test	Field	Depth of Sample	Over- burden	Exist-				ssing		Color AASHO T-21	AASH0	VHD	Rema rks	
No.	No.	Tested	(Ft.)	(Ft.)	Pit	1/2/1	5/8"	#4	#1CO	#2/0	1-21	T-4-35	Spac.	with exposed ledge in places	
														and at shallow depths in others; not a granular material, but probably a glaciatil.	
41	1	1965	25-35	0-25	Yes	69.5	56.2	39.3	13.0	4.0*	1	40.8%	Borrow	Owner: Town of Barnet This is a large pit area on the east side of the Passump sic River south of Passumpsic Village. Feature has been defined as an esker by Dr. Stewart-appears to be a kame terrace. Test #1 was taken on south face of 285 x 105 foot re- entrant of pit area, top 25 feet of face consists of sand and gravel beds- a composite sandy gravel. Sample came from 25-35 feet, which was predominantly gravel. Stones are well rounded. Material had high wear re-	
	2	1965	0-10-5	None	Yes	74•	59 . 2	34.9	15.0	5.0*	1	46.9%	Borrow	jecting it for Item 201. Test #2 sampled from floor w Material was also a good (.)looking gravel, but was no acceptable for Item 201 because of excess wear.	
	3A	1965	40-45	0-40	Yes	100	100	99.6	22.9	5•3*	1		Borrow	Test #3A was taken from five foot section of sand face of)280 x 120 foot main pit.	
						*	Percen	tage o	f Tot	al Sam	ple			Sand overlies material sam- pled.	

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pît	11211		Passi		#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Rema rks
	8A	1965	0-6	None	Yes	100	100	93.7	2.8	1.5 1.4*	1		Sand	Material is a gravel, in gravel and sand beds of which only bottom 10 feet was sampled. Gravel barely fails to meet VHD Specifications for Item 201, because of excess silt needs to be resampled to obtain propersize stone for wear test. Test 8A was taken in floor of pit at north end of main
	3в	1965	6-11	0-6	Yes	84.4	72.0	53.8	22.0		1		Gran. Borrow (Grav.)	of pit at north end of mapit area. Upper 6 feet of Test Hole-Test #8A, is a very coarse pebbly sand, acceptable for Item 202 Test 8B sampled from 6-11 feet is a silty gravel, unacceptable for Item 201 The feature from which the foregoing materials were sampled is located at the
														side of the valley, brought up against the steep bed- rock wall. Its surface is nearly flat and it is probably a kame terrace. More testing should be done on this feature to
						* F	Percer	ntage	of To	otal Sa	mp1e			determine if gravels with acceptable wears can be found. It seems to be the character of Passumpsic Valley gravels, however,

TABLE I

Map	Field	Year	Depth of		Exist-				lysis		Color	Abrasion	Passes	
Ident.	Test	Field	Sample	burden	ing			Pass			AASHO	AASHO	VHD	
No.	No.	Tested	(Ft.)	(Ft.)	Pit	1/211	5/8"	#4	#100	#270	T-21	T-4-35	Spec.	Remarks
	3B	1965	45-50	0-45	Yes	84.9	64.3	42.4	9.0	3.0*	1	46.0%	Gran. Borrow (Grav.)	Sand is very fine and has excess passing the 100 and 270 mesh sieves for acceptance as Item 202. Underlying Test #3A is a gravel bed, 5 feet of which was sampled in Test #3B. This material as well is rejected for Item 201, Subbase of Gravel, because of
	4	1965	0-7.5	None	Yes	85-6	72.9	44.5	14.0	4.5%	1	46.4%	Gran.	excess wear. Test #4 was taken from
			,,,,	None	163		7-47	71.0	14.0	4. J	•	40.4/8	Borrow (Grav.)	floor of pit near Test #3, Material is a gravel with slightly excess silt and a high wear for Item 201. Hole bottoms in sand.
	5	1965	8-15	0-8	Yes	100	100	98.0	27.4	8.5 8.3*	1		Gran. Borrow (Sand)	Test #5 dug on north face of pit at south end of feature. Top 8 feet of face is a very fine sand going to fine sand toward
	6	1965	0-10	None	Yes	100	100	99•3	26.8	6.0*	1		Gran. Borrow (Sand)	the bottom where material was sampled. Sand is silty and unacceptable for Item 202. Test #6 was taken in floor of 245 x 65 foot south pit. Material is a very fine silty sand with excess fines for Item 202, Sub-base of
	7	1965	30-40	0-30	Yes			i		4.0☆	2		Gran. Borrow (Grav.)	Sand. Test #7 was dug from east face of pit at north end of pit area.
		i		I	•	* P	ercen	tage	of To	tal Sa	mp1e			



Map Ident.	Field Test	Year Field	Depth of Sample	Over- burden	Exist-				alysi sing_		Color AASHO	Abrasion AASHO	Passes VHD	
No.	No.	Tested	(Ft _o)	(Ft.)	Pit	11/21	5/8"	#4	#100	#270	T-21	T-4-35	Spec.	Remarks
				-										that the stones are very soft, having been derived from schistose or micaceous rocks. Further, it is possible that the origin of the gravels in Area #41 can be ascertained by more testing and observations.
42	1	1965	1-8	0-1	No	100	100	100	65.0	33.0*	1			Owner: Henry Denile Area is rolling farmland southeast of Passumpsic Village. Test #1 was taken on north east-southwest ridge which resembles an esker, but which is covered appar-
	2	1965	1-8.5	0-1	oli	100	100	100	63.0	25.0 *	1			ently by silt or silt-clay Test #2 was sampled north of Test #1 on same ridge and near owner's house. Material is a silt unac- ceptable for Item 105.
	3	1965	1-9	0-1	No	100	100	97.2	19.4	4.0 3.9*	1		Gran. Borrow (Sand)	Test #3 taken in field between ridge and river, but close to ridge. Material is a very fine silty sand, too fine for
	4	1965	1-9.5	0-1	Мо	100	100	100	62.0	38.5*	1			Item 202. Test #4 dug in north end of field west of owner's buildings. Material is silt.
	5	1965	1.5-8	0-1.5	No entage o		95.2	82.1		3.0 2.5*	1		Sand	Test #5 dug on west side of field above large pit (Area # 43).

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft.)	Over- burden (Ft.)	Exist- ing Pit			_% Pa	nalys ssing #100		Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Rema rks
	6	1965	1-10	0-1	Мо	100	100	100	16.0	3.5*	2 ¹ / ₂		Sand	Material is a coarse peb- bly sand, appearing quite clean toward bottom. Test #6 was also taken on west edge of field near edge of pit. Material is a fine sand becoming white in the bot
	7	1965	1-11.5	0-1	No	100	100		55.0	17.5*	1			Test #7 dug in field 170 feet east of Test #6. Material is a sandy silt rejected for Item 105. The ridge on which Tests nos. 1 and 2 were taken has the sinuous form of are sker. However, not enough information is available to determine for certain its origin, or the origin of the terrace-like field terminating on the west in the Canadian Pacific Railroad pit (Area #43). Tests within the pit seem to indicate that coarser materials could underlie the field where holes 5, 6, and 7 were dug. Access into this area and perhaps the pit as well, would be via Town Road #1 and owner's field drive.
43	1	1965	10-15 * Percent	0 -1 0 age of T	Yes otal Sar		40.0	31.9	10.0	5.0 1.6*	11/2	15.8%	Gravel	



Map Ident.	Field Test	Year Field	Depth of Sample	Over- burden	Exist- ing			e Ana Passi	lysis		Color AASHO	Abrasion AASHO	Passes VHD	
No.	No.	Tested	(Ft.)	(Ft.)	Pit	11/211	5/81	#4	#100	#270	T-21	T-4-35	Spec.	Remarks
	2	1965			Yes	100	100	99•3	8.0	1.0*	1		Sand	A pit south of Passumpsic Village on the east side of the river. C.P. R.R. siding runs through pit. Test #1 taken on face. Material is a gravel with about 30% of stones exceeding 2 inches in diameter, and stones are well rounded. Test #2 sampled randomly from pit face below gravel Material is fine sand acceptable for Item 202. Most of pit appears to consist of similar sand. Dr. Stewart has mapped pit vicinity and east side of river, south of pit as an esker; he has defined the area east of the pit (Area # 42, including the esker-like ridge) as 'Lake Sands From air photos the area resembles a kame terrace as does Area #44 across the river. However; the stone content of Test #43-1 has a much higher resistance to wear than any sample in the vicinity. (15.8% vs 37.66%-46.9%) And the stones were described as being well rounded, which two facts



Map Ident.	Fiel: Test	Year Field	Depth of Sample	burden	Exist-			Sieve % Pas	sing			Abrasion AASHO	VHD		
No.	No.	Tested	(Ft.)	(Ft.)	Pit	11/211	5/81	#4	#100	#270	T-21	T-4-35	Spec.	Remarks	
														argue for an origin dif- ferent from that of other features tested.	
44	1	1965	15-25	0-1	Yes	61.0	53.0	35.3	15.0	3.0 1.1*	1	37.6%	Gran. Borrow (Grav.)	on the east side of U.S. Route 5 below Passumpsic Village. Dr. Stewart has mapped pit vicinity as being located in the 'Lake Sand' area. May be a kame terrace. Test #1 sampled from middle of south face, which is composed of gravel and sand. Gravel sampled consisted of 16% coarser than 3 inches.	
	2	1965	25-40	0-1	Yes	63.3	61.0	45.4	18.0	6.0 2.7*	1	40.0%	Gran. Borrow (Grav.)	#i, and has excess silt	
	3 A	1965	0-6	None	Yes	100	100	88.3	26.5	10.0 8.8*	1		Gran. Borrow (Sand)	and wear for Item 201. Test #3A was sampled from floor. Material is a fine pebbly sand with excess fines for	
	3В	1965	6-9	0-6 * Perce	Yes entage			37.8 amp1e	12.0	4.0 1.5*	1		Gran. Borrow (Grav.)	acceptance as Item 202. Test #3B sampled from 6.	

TABLE I

Map Ident.	Field Test	Year Field	Depth of Sample	Over- burden				eve A	na lys	is	Color AASHO	Abrasion AASHO	Passes VHD	
No.	Ho.	Tested	(Ft.)	(Ft.)		1121		#4		#270	T-21	T-4-35	Spec.	Remarks
														Test #1 was sampled from lower part of 25 foot face. Material varies from very coarse pebbly sand to fine sand composite is a coarse sand acceptable for Item 202.
47	1	1965	1-8	0-1	No	100	100	100	53.0	22.0	1			Owner: William Dunnel Area is a knoll north of owner's buildings and Town Road #0. Material sampled is a silty till, rejected for Item 105.
43	71 to	1965	1-7	0-1	ilo	100	100	83.8	3 51.0	16.0 13.44	ī			Owner: Fred Albiser A sidehill west of Town Road #22. Material sampled in Test #1 is a silty till, re- jected for Item 105.
	2	1965	1-4	0-1	No	100	100	100	99•5	99.5*	To the second			Bedrock hit at 7 feet. Test #2 dug on knoll south of and behind buildings. Material is classified A - 7 - 6, clay-unacceptable for Item 105.
mention and continue to the state of the sta						* Pe	ercent	tage (of Tot	al Sam	ple			

GRANULAR PROPERTY OWNERS

G	RANULAR	PROPERTY	OWNERS			••-
				Map	Ident.	NO.
Achilles, Wendell					21	
Adams, Winston					9	
Aiken, Goldie (Mrs.)					16	
Albiser, Fred					48	
					• •	
Bailey, Ora W. (Mc CLAREN	1				37	
Barnet, Town of	/				41	
5//					10	
Benway, Melvin					1	
Bona, William					44	
Bunnel, Kenneth						
Bunnel, William					47	
Bogie, Calvin					25	
Bourtelle, Calvin					26	
					2 (2)	
Canadian Pacific Railroad					43	
Cheney, Ernest					34	
Colby, Melvin					28, 30	
Corriveau, Lyman					11	
Crown, Lyman					17	
, 2,22						
Davidson, Lawrence					22	
Denile, Henry					42	
Jenze, henry	~,					
Fenoff, Gordon					7	
Ferris, Elmer					23	
					40	
Fuller, Homer					40	
Cilmoum Albana					32, 35	
Gilmour, Albert					13	
Goss, Burns					13	
Washing Barre					18	
Hastie, Roy					10	
					20	
Jewett, Edward H.					20	
T D					20	
Larocque, Donald					38	
Larocque, Lee					39	
Lindsay, Guy					12	
					22	
Moore, Reginald					33	
December 1					29	
Pearl, Merwin					29	
D 7					24	
Roy, Leonard					24	
Charte Here!					36	
Shute, Hazel					27, 31	
Somers, Claude						
Somers, F.H. (Mrs.)					14	
Somers, Harvey					5	
Somers, Richard					15	
Strobridge, Edgar					19	
Stuart, Neal					6	

Granular Property Owners - Continued	TABLE I Supplement
	Map. Ident. No.
Whitehill, Austin Whitehill, John	8
Willey, Bernard	45 46 2 , 3
Mulf, Alfred	2, 3
Zabrasky, Joseph	4





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	IABLE II					DARRET ROCK BATA SHEET ROC .			
Map Ident	Field Test	Year Field Teste		Exist- ing Quarry	Method of Sampling	Abrasion AASH0 T-3	Remarks		
1	1	1965	Quartzite	No	Chip	3.8%	Owner: William Bona Area is on northeast side of Town Road #8 about 3 miles from the proposed location of I-91. Roadside outcrops across from County School were sampled for about 50 feet along strike. Area could be extended up wooded hill to the northeast. Rock sampled is a blue to gray calcareous quartzite belonging to the Waits River formation, and is quite hard. Sample met abrasion requirements for Item 204, Sub-base of Crushed Rock. However, further testing should be done across the strike to determine if rock is variable.		
2	1	1965	Granite	No	Chip	5.6%	Owner: Francis Roy Area is a sidehill on the east shore of Harvey Lake near its north end. Access is via Town Road #76 out of West Barnet Village and along a newly bulldozed road through a tenting and camping area. Random outcrops of a light colored granite were sampled; the entire hill is undoubtedly due to an igneous intrusive body. The outcrop area is mapped as a porphyritic granodiorite by Leo M. Hall in Bulletin #13, and is shown on Plate II. The granitic rock sampled meets VHD specifications for Item 204. However, the site is about 5 miles from the proposed Interstate location.		
3	1	1965	Granite	No	Chip	2.2%	Owner: Gordon Bogie Area is hillside on the northeast flank of Roy Mountain at the end of Town Road #80. A spine-like exposure of granite or quartz: monsonite about 75 feet wide occurs with the contacts of the Gile Mountain formation visible on either side. Rock is quite hard and fine-grained, and apparently has been sampled previously since an area of blasted-out rock was noted. Exposure has been mapped (Bulletin #13 of the Vermont State Geologist, and Plate II) on the south flank of the mountain. The ridge which was seen and sampled by the Materials Survey		



BARNET ROCK DATA SHEET NO. 2

Map Ident. No.	Field Test No.	Year Field Tested	1 7 1	Exist- ing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							Party is also shown on Plate II. The granite face is approximately 75 feet high and very likely a quarry could be located here.
4	2	1965	Schistose Quartzite Quartzite		Chip	No Test	Owner: Melvin Colby Ledge near Northbound Station 765+50 (to be renumbered) of Interstate 91 was sampled. Test #1 was a splintery schistose quartzite, which was not tested. The second sample consisted of less schistose quartzite and met abrasion requirements for Item 204. Area #4 is shown on Plate II, as being located within the out- crop area of the Albee Formation. However, no chloritic ma- terial nor greenish quartzites were seen at the elevation sampled. Lower down, near the edge of U.S. Route 5, quartzites and schists belonging to the Albee Formation were noted. Regardless of whether the rock is Albee or Gile Mountain, the material is too schistose in this location to be considered for a quarry producing Crushed Rock.
5	2	1965	Amphibolit and Quartzite Quartzite	e No	Chip Chip	5.0% 6.6%	Owner: Clyde Bimson Area is on the south side of State Aid #1 east of Barnet Village and is on the west side of the proposed location of I-91. Test #1 was taken for 115 feet across the strike beginning near Southbound Station 937+0 (to be renumbered). Rock is a hard, gray to black garnetiferous amphibolite associated with a dense quartzite. This sample met abrasion requirements for Item 204. Test #2 was sampled west of Southbound Station 925+0 for about 100 feet along the strike. Rock is a very massive hard quartzite, gray in color, and meets abrasion requirements for Item 204. This area should be tested further to determine to a greater extent the nature of the Gile Mountain Formation; and also with the intent to determine the site suitability for a quarry. Construction will possibly uncover a quarry site near the location of the Interstate.

TABLE II

BARNET ROCK DATA SHEET NO. 3

Map Ident.	COS 10.00	Year Field	Rock Type	Exist-	Method	Abrasion AASHO	
No.	No.	Tested		Quarry	Sampling		Remarks
6	2	1965	Diorite Diorite	No No	Chip	1.8%	Owner: Qwen Quimby This is an exposed face on the northwest side of State Aid #3, 1.2 miles east of East Barnet Village. Face is about 300 feet long and 75 feet high, and is exposed above a talus slope and rock piles reaching down to the edge of the road. Both Tests were taken along face. Rock is generally a fine— grained, gray to black metadiorite, occasionally coarse-grained or porphyritic. The rock easily meets abrasion requirements for Item 204. There may be difficulty in locating a quarry above State Aid #3, and between it and the face. If a workable face can be started in this location, it would be an excellent source of crushed rock.
7	2	1965	Diorite	No	Chip	3.4%	Owners: Locke and Stanley Matthews A diorite was sampled in two tests taken in heavily wooded area south of Town Road #16, and above a large field. About 25 feet relief in 175 feet of sample traverse. Random out crops were sampled. Rock is a coarse grained diorite, in contact with a fine-grain ed diorite about half way down hill toward buildings. Rock meets abrasion requirements for Sub-base of Crushed Rock, and area seems to be a good location for a quarry operation. Site would be about 3.2 miles from proposed location of I-91 near East Barnet Village. A quarry from which rock of this type (the Moulton Diorite) was taken for construction of the Frank D. Comerford Dam is located less than 0.5 mile south of the area. Permission to sample the quarry was denied, however.

ROCK PROPERTY OWNERS TABLE II Supplement Map Ident, No. 5 3 Methews, Locke and Stanley 7 6

2

Bimson, Clyde Bona, William Bogie, Gordon

Colby, Melvin

Quimby, Owen

Roy, Francis

GRANULAR

REVISIONS

BARNET