SURVEY OF HIGHWAY CONSTRUCTION MATERIALS

IN THE TOWN OF JOHNSON, LAMOILLE COUNTY, VERMONT

Prepared by

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION

ENGINEERING GEOLOGY SUBDIVISION

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Agency of Transportation
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Acknowledgments

This project acknowledges the surficial geological information obtained from Professor D. P. Stewart of Miami University, Oxford, Ohio and the bedrock information from the Centennial Geologic Map of Vermont, C. G. Doll.

History

The Materials Survey Project was initiated in 1957 by the Vermont Department of Highways with the assistance of the Bureau of Public Roads to compile an inventory of highway construction materials in the State of Vermont. Previously, investigations for highway construction materials were conducted only as the immediate situation required and only limited areas were surveyed. Since no overall picture of material resources was available, highway contractors or resident engineers were required to locate the materials for their respective projects and the samples were tested by the Materials & Research Division. The additional expense of exploration for construction materials resulted in higher construction costs being paid by the State. The Materials Survey Project was formed to minimize this factor by enabling the State and the contractors to use available information on material resources and to project cost estimates. Knowledge of locations of suitable materials is an important factor in planning 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 furnish information of particular use to contractors and construction personnel, and should be studied together for maximum benefit.

Enclosures

Included in this report are two surface-geology maps, one defining the location of tests on bedrock, the other defining the location of tests on

granular materials. These maps are based on 15-minute or 7-½-minute quadrangles of the United States Geological Survey enlarged or reduced to 1:31250 or 1" = 2604'. The various rock formations and types are delineated on the Bedrock Map of the township. This information is obtained from: Vermont Geological Survey Bulletins, Vermont State Geologist Reports, United States Geological Survey Bedrock Maps, Centennial Geologic Map of Vermont, the Surficial Geologic Map of Vermont and other references.

The granular materials map shows areas of various types of glacial deposits (outwash, moraines, kames, kame terraces, eskers, etc.) which are potential sources of gravel and sand. This information was obtained primarily from a survey conducted by Professor D. P. Stewart of Miami University, Oxford, Ohio, who mapped the glacial features of the State of Vermont during the summer months from 1956 to 1966. Further information is obtained from the Soil Survey (Reconnaissance) of Vermont (conducted by the Bureau of Chemistry and Soils of the United States Department of Agriculture), available Soil Surveys of individual counties (by the Soil Conservation Service of the United States Department of Agriculture), Vermont Geological Survey Bulletins, United States Geological Survey Quadrangles, aerial photographs and other sources. The location of each test area is represented by a Map Identification Number.

This report contains data sheets with detailed information on each test taken in the Granular and Bedrock areas. Data is also used from an active card file compiled by the Materials & Research Division over a period of years. Some cards are not used because they are incomplete or have unusable information on the location of the deposit.

Work sheets containing more detailed information and a field sketch of the area, and laboratory test results are on file in the Materials & Research Division of the Agency of Transportation, State of Vermont.

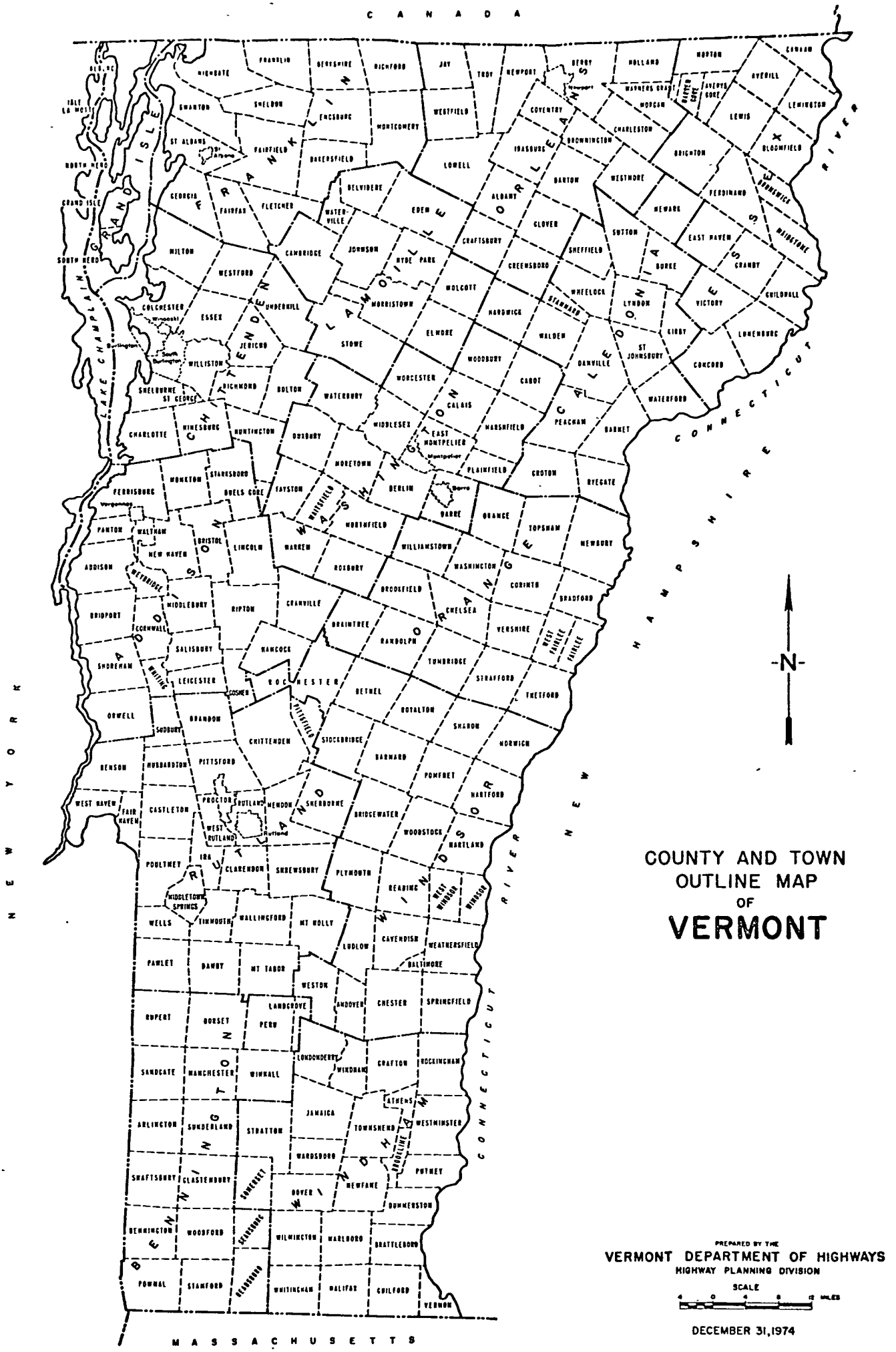
LOCATION

The town of Johnson is in the north-central part of Lamoille County in the northwest section of north-central Vermont. It is bounded on the north by Belvidere, the northeast by Eden, the east by Hyde Park, the southeast and south by Morristown, the west by Cambridge, and the northwest by Waterville (see County and Town Outline Map of Vermont on the following page).

The western half of Johnson lies in the Green Mountain Physiographic Subdivision, and the eastern half lies in the Vermont Piedmont Physiographic Subdivision of the New England Upland. The Green Mountains are characterized by steep-sided hills and mountains in the south, southwest, and north corners of town. The Vermont Piedmont is characterized by rounded hills of moderate relief. Elevations range from 3,300 feet atop a peak south of Daniels Notch, to below 450 feet in the western corner of Johnson where the Lamoille River crosses the Cambridge Town Line. East of the mountains the land is typified by rounded hills of less relief.

Primary drainage is northwestward via the Lamoille River, its south-flowing tributaries: Foote, Joe, Bell, Muckler, Gihon, and Wild Brooks, and its north-flowing tributaries: Smith, French Hill, Boulley, Waterman, Hall, and Belding Pond Brooks. Judevine Brook rises in the northwest corner of Johnson and flows westward through Waterville and Cambridge.

Belding Pond is the only significant body of standing water in Johnson.


CANADA
LAKE CHAMPLAIN
GRAND ISLE
FRANKLIN
ORLEANS
ESSEX
CALEDONIA
LAMOILLE
WASHINGTON
ORANGE
CHITTENDEN
ADDISON
RUTLAND
WINDSOR
WINDHAM
BENNINGTON
NEW YORK
CONNECTICUT RIVER
NEW HAMPSHIRE
MASSACHUSETTS
N
COUNTY AND TOWN
OUTLINE MAP
OF
VERMONT
PREPARED BY THE
VERMONT DEPARTMENT OF HIGHWAYS
HIGHWAY PLANNING DIVISION
SCALE
DECEMBER 31, 1974

SURVEY OF ROCK SOURCES

Procedure for Rock Survey

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

The office investigation is conducted during the winter months and comprises the mapping and description of rock types perused from many reference sources, as acknowledged in the bibliography. These references differ considerably in dependability due to subsequent developments and studies that have contributed to the obsolescence of a number of reports. The results of samples taken by other individuals are analyzed, and their location is mapped when possible. As complete a correlation as possible is made of the available geological information concerning the area under consideration.

The field investigation is begun by making a cursory survey of the entire town. The information obtained from the preliminary survey, and that from the office investigation, is used to determine where sampling will be concentrated. When a promising source has been determined by rock type, volume of material, accessibility, adequate exposure and relief, chip samples are taken with a hammer across the strike or trend of the rock, and are submitted to the Materials & Research Division for abrasion testing by the Deval Method (AASHTO T-3) and the Los Angeles Method (AASHTO T-96). Samples taken by the chip method are often within the weathered zone of the outcrop and thus may give a less satisfactory test result than fresh material from unweathered rock. When the rock is uniform, and the chip samples yield acceptable abrasion test results, the material source is listed in this report as being satisfactory.

Discussion of Rock and Rock Sources

The information on the Rock Materials Map (Plate II) is simplified. For a more detailed description of the respective rock formations, see the Summary of Rock Formations included in this report.

Occasionally, rocks belonging to the same formation and exhibiting similar characteristics (i.e., color and texture) produce different abrasion test results owing to differing physical properties or chemical compositions. Therefore, in no case should satisfactory test results obtained in one area be construed to mean that the same formation, even in the same area, will not later produce unsatisfactory materials; this is particularly true of metamorphic rocks.

Metamorphic rocks of the Green Mountain Sequence underlie the town. Rocks of the Hazens Notch Formation are mapped as underlying most of Johnson. The Pinnacle Formation schist, and the Underhill schist and phyllite comprise nearly all of the remainder of the rocks in town. The schists, and the phyllites and schists have not yielded satisfactory construction material where sampled in other towns, either.

The Hazens Notch schist was sampled at Map Identification Number 2 but yielded unsatisfactory abrasion test results. A talc mine in an ultramafic rock body in the northeast corner of town yielded rock from the grout piles which had satisfactory abrasion test results; however, there might be difficulty in getting the necessary permits to use this rock for construction purposes.

The Formations mapped as underlying Johnson from west-to-east are: the Underhill schist and phyllite, the Hazens Notch schist, quartzite, and gneiss, the Pinnacle schist, a small (mapped)zone of Stowe greenstone, the Hazens Notch schist, and the Plutonic rocks (Ultramafics).

SURVEY OF SAND AND GRAVEL SOURCES

Procedure for Sand and Gravel Survey

The method used for conducting the survey of possible sources of sand and gravel for highway construction is divided into two main stages: office and field investigations.

The office investigation is conducted during the winter months and comprises the mapping of potentially productive areas from various references. Of these references, the survey of glacial deposits mapped by Professor Stewart is particularly helpful when used with soil-type maps, aerial photographs, and United States Geological Survey Quadrangles. The last two are used in the recognition and location of physiographic features indicating glacial deposits, and in the study of drainage patterns. The locations of existing pits are mapped, as are the locations in which samples were taken by other individuals.

The field investigation is begun by making a cursory survey of the entire town. All pits, and any areas that show evidence of glacial or fluvial deposition are noted, and later investigated by obtaining samples from pit faces and other exposed surfaces. Test holes in pit floors and extensions are later dug with a backhoe to a depth of approximately 11 feet to obtain material which is submitted to the Materials & Research Division for gradation, sieve analysis and AASHTO T-4 Method stone abrasion test.

Discussion of Sand and Gravel Deposits

Results of this survey indicate that granular deposition in Johnson is limited to features between 450 feet and 850 feet elevation. There are several pits having acceptable Sand Borrow and Cushion Item 703.03, and Gravel for Sub-base Item 704.05, which are not in any mapped granular feature. These pits were found from 830 feet to 850 feet elevation. Many sources of granular material are mapped as occurring in lake sediment areas.

The most promising sources of Gravel for Sub-base Item 704.05 are listed with the most favorable first: pits at Map Identification Numbers 32, 30, 31, and 19. Many good sources of gravel occur between 500 feet and 700 feet elevation.

Good sources of Sand Borrow and Cushion occur mainly between 525 feet and 850 feet elevation. The most promising sources of Sand Borrow and Cushion Item 703.03 are listed with the most favorable first: Map Identification Numbers 30, 5, 11, 9, 10, and 2; all are pits except Numbers 5, 9, and 10.

There are several other granular areas with acceptable material; however, these were not listed because they were very close to depletion, or there are plans for commercial, residential, or agricultural development.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF JOHNSON

Green Mountain Sequence

Stowe Formation, greenstone and amphibolite: Epidote-albite-chlorite rocks contain actinolite and hornblende where more metamorphosed.

Plutonic Rocks: Ultramafic: serpentinite, carbonate rock, talc-carbonate rock, and steatite.

Camels Hump Group

Underhill Formation: Silvery, gray-green, quartz-sericite-albite-chlorite-biotite schist containing abundant lenticular segregations of granular white quartz; locally quartz-sericite-albite-chlorite phyllite; porphyroblasts of albite, garnet, and magnetite are common and locally very abundant in gneissic facies in axial anticlines of the Green Mountain anticlinorium.

Pinnacle Formation (Foot Brook member): Sericite (muscovite-paragonite)-quartz-chlorite-chloritoid schist; minor carbonaceous interbeds.

Hazens Notch Formation: Interbedded carbonaceous and non-carbonaceous quartz-sericite-albite-chlorite schist; grades to quartzite and gneiss.

Hazens Notch Formation schist: Sericite-quartz-chlorite-albite-magnetite schist, near Hyde Park.

GLOSSARY OF SELECTED GEOLOGIC TERMS

Actinolite: A variety of amphibole occurring in greenish bladed crystals or in masses.

Albite: The light-colored, sodium end-member of the continuous plagioclase feldspar series which is found in alkali rocks. The name is often compounded with the names of rocks containing the mineral.

Amphibolite: A green-to-black, schistose, metamorphic rock consisting mostly of amphibole (i.e., tremolite, actinolite, hornblende, or arfvedsonite).

Anticline: A fold of rock strata that is convex upward, in which the older formations occur toward the center of curvature.

Anticlinorium: A composite fold consisting of connected anticlines and synclines which, grouped together, form an arch. The term applies to relatively large features extending for several miles.

Bedding: The arrangement of rock or soil in layers, strata, or beds.

Bedrock: The more or less solid, undisturbed rock in place at the surface, or beneath superficial deposits of gravel, sand, or soil.

Biotite: A platy, dark silicate mineral commonly known as black mica.

Carbonaceous: Containing carbon.

Carbonate Rocks: Rocks composed of the molecule CO_3 combined with calcium, magnesium, etc. Includes limestones, dolomites, and marbles.

Chlorite: A group of green hydrous silicates of aluminum, ferrous iron, and magnesium which occur as plate-like crystals or scales in metamorphic rocks.

Chloritoid: A brittle member of the mica mineral group.

Delta: A predominantly alluvial deposit built by a stream entering a standing body of water. It usually is formed like the Greek letter delta.

Drainage basin: A part of the surface of the earth that is occupied by a drainage system or contributes surface water to that system.

Epidote: A calcium-aluminum-iron silicate mineral that usually occurs in rocks as formless grains or masses. It is usually some shade of green, but pistachio-green or yellowish-green are most common.

Facies: The composite nature of sedimentary deposits that reflects the conditions and environment of their origins.

Garnet: An important group of minerals in which aluminum, calcium, chromium, ferric- and ferrous iron, magnesium, and manganese combine with a silicate.

They are commonly deep red, brown, or black, but may be any color except possibly blue.

Gneiss: A metamorphic rock having alternate banks of light minerals (rich in feldspar and quartz), and dark minerals (rich in hornblende and mica).

Gneissic: Having the banded, streaked, and foliated appearance and texture of gneiss which is a more or less banded metamorphic rock with the mineral composition of granite.

Greenstone: A field term for rocks so metamorphosed or otherwise altered that they assume a distinctive color owing to the presence of chlorite, epidote, or actinolite. Greenstone is usually derived from dark igneous rocks. Normally tough and hard, it is crushed to produce good-to-excellent aggregate.

Hornblende: A common, dark variety of the amphibole group of silicate minerals. It is usually black, dark green, or brown, has a hardness of 5 to 6, a specific gravity of about 3.0, and often occurs in prismatic masses in igneous and metamorphic rocks.

Interbeds: Occur between, or lie adjacent and parallel to, other beds of usually a different nature.

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

Kame Terrace: Stratified sands and gravels deposited by streams flowing between a glacier and an adjacent valley wall.

Lenticular: Pertains to a mass of rock or earth that thins out in all directions from the center like a double-convex optical lens.

Magnetite: A magnetic mineral composed of iron ferrate (Fe_3O_4, or $Fe \cdot Fe_2O_3$).

Metamorphic Rocks: Rocks formed from pre-existing rocks altered by heat, pressure, or the infiltration of gases and liquids below the zones of oxidation and cementation. Metamorphic rocks are reconstructed in place while remaining essentially solid.

Muscovite: An important member of the mica group of silicate minerals; known also as white mica, potash mica, or isinglass.

Paragonite: A mica similar in appearance to muscovite but containing sodium instead of potassium.

Phyllite: A fine-grained, metamorphic rock intermediate between the mica schists and slates, into which it may grade. Its cleavage is due to the high content of the potash mica, sericite, which gives the rock a distinctive silvery appearance. Its fracture is intermediate between the rather splintery fissility of schist, and the smooth, even cleavage of slate; however, the rock is not as tough as slate.

Physiographic: Pertaining to the physical divisions of the earth's surface.

Piedmont: Lying, or formed at the base of mountains.

Plutonic: Pertaining to the depths of the earth, generally applied to rocks and intrusions that have consolidated at great depths. Such rocks have cooled slowly under great pressure and are typically entirely crystalline and non-porphyritic. In a more general way the term is used to designate any igneous rock of deep-seated origin.

Porphyroblasts: Large crystals which have formed in place within the fine-grained matrix of a metamorphic rock. They are produced by heat, pressure, and infiltrating solutions in pre-existing rocks.

Quartz: The most common mineral (SiO_2). It occurs as hexagonal crystals or amorphous masses. It is transparent, translucent, opaque, or variously colored due to impurities.

Quartzite: The common, siliceous rock which is the metamorphic equivalent of sandstone composed of quartz grains so firmly bonded that fractures occur with equal ease across the grains and the cementing material.

Relief: The relative difference in elevation between the summits and the lowlands of a particular region.

Schist: A crystalline, metamorphic rock having secondary foliation or lamination based on the parallelism of platy or needle-like grains which causes a tendency to split along the foliation.

Sediments: All materials deposited from the waters of streams, lakes, seas, or more generally, deposited by wind or ice.

Segregation: The concentration of one or more minerals that have formed together during crystallization of molten rock in place.

Sericite: A metamorphic mineral very similar to muscovite; it occurs in minute flakes or scales in schists, gneisses, and phyllites.

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

Shoal: A sand-or gravel-bar that makes the water shallow; specifically an elevation which is not rocky, and on which there is a depth of water of six fathoms (36 feet) or less. The material is sorted and coarsened by subsequent wave-action.

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

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

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

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PARTIAL SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MATERIALS

Listed below are partial specifications for Highway Construction Materials as they apply to this report at date of publication. For a complete list of specifications see Standard Specifications for Highway and Bridge Construction, approved and adopted by the Vermont Department of Highways, March, 1976.

DIVISION 700 - MATERIALS

703.03 SAND BORROW AND CUSHION. Sand borrow shall consist of material reasonably free from silt, loam, clay, or organic matter. It shall be obtained from approved sources and shall meet the requirements of the following table:

TABLE 703.03A - SAND BORROW AND CUSHION

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE	SAND PORTION
2"	100	
1½"	90-100	
½"	70-100	
No. 4	60-100	100
No. 100		0- 30
No. 200		0- 12

703.05 GRANULAR BORROW. Granular borrow shall be obtained from approved sources, consisting of satisfactorily graded, free draining, hard, durable stone and coarse sand reasonably free from loam, silt, clay, or organic material.

The Granular Borrow shall meet the requirements of the following table:

TABLE 703.05A - GRANULAR BORROW

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE	SAND PORTION
No. 4	20-100	100
No. 200		0- 15

The maximum size stone particles of the Granular Borrow shall not exceed 2/3 of the thickness of the layer being spread.

704.05 GRAVEL FOR SUB-BASE. Gravel for Sub-base shall consist of material reasonably free from silt, loam, clay, or organic matter. It shall be obtained from approved sources and shall meet the following requirements:

(a) Grading. The gravel shall meet the requirements of the following table:

TABLE 704.05A - GRAVEL FOR SUB-BASE

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE	SAND PORTION
No. 4	20-60	100
No. 100		0- 18
No. 200		0- 8

The stone portion of the gravel shall be uniformly graded from coarse to fine, and the maximum size stone particles shall not exceed 2/3 the thickness of the layer being placed.

(b) Percent of Wear. The percent of wear of the gravel shall be not more than 25 when tested in accordance with AASHTO T-4, or more than 40 when tested in accordance with AASHTO T-96.

704.06 CRUSHED STONE FOR SUB-BASE. Crushed stone for sub-base shall consist of clean, hard, crushed stone, uniformly graded, reasonably free from dirt, deleterious material, pieces which are structurally weak and shall meet the following requirements:

(a) Source. This material shall be obtained from approved sources and the area from which this material is obtained shall be stripped and cleaned before blasting.

(b) Grading. This material shall meet the requirements of the following table:

TABLE 704.06A - CRUSHED STONE FOR SUB-BASE

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE
4½"	100
4"	90-100
1½"	25- 50
No. 4	0- 15

(c) Percent of Wear. The percent of wear of the parent rock shall be not more than 8 when tested in accordance with AASHTO T-3, or the crushed stone a percent of wear of not more than 40 when tested in accordance with AASHTO T-96.

(d) Thin and Elongated Pieces. Not more than 30 percent, by weight, of thin and elongated pieces will be permitted.

Thin and elongated pieces will be determined on the material coarser than the No. 4 sieve.

(e) Filler. The filler shall be obtained from approved sources and shall meet the requirements as set up for Sand Cushion, Subsection 703.03.

(f) Leveling Material. The leveling material shall be obtained from approved sources and may be either crushed gravel or stone screening produced by the crushing process. The material shall consist of hard durable particles, reasonably free from silt, loam, clay or organic matter.

This material shall meet the requirements of the following table:

TABLE 704.06B - LEVELING MATERIAL

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE
3/4"	100
1/2"	70-100
No. 4	50- 90
No. 100	0- 20
No. 200	0- 10

704.07 CRUSHED GRAVEL FOR SUB-BASE. Crushed gravel for sub-base shall consist of material reasonably free from silt, loam, clay or organic matter. It shall be obtained from approved sources and shall meet the following requirements:

(a) Grading. The crushed gravel shall be uniformly graded from coarse to fine and shall meet the requirements of the following table:

TABLE 704.07A - CRUSHED GRAVEL FOR SUB-BASE

GRADING	Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE	SAND PORTION
COARSE	4"	100	
	No. 4	25- 50	100
	No. 100		0- 20
	No. 200		0- 12
FINE	2"	100	
	1½"	90-100	
	No. 4	30- 60	100
	No. 100		0- 20
	No. 200		0- 12

(b) Percent of Wear. The percent of wear of the parent gravel shall be not more than 20 when tested in accordance with AASHTO T-4, or the crushed gravel a percent of wear of not more than 35 when tested in accordance with AASHTO T-96.

(c) Fractured Faces. At least 30 percent, by weight, of the stone content shall have at least one fractured face.

Fractured faces will be determined on the material coarser than the No. 4 sieve.

704.09 DENSE GRADED CRUSHED STONE FOR SUB-BASE. Dense graded crushed stone for sub-base shall consist of clean, hard, crushed stone, uniformly graded, reasonably free from dirt, deleterious material and pieces which are structurally weak, and shall meet the following requirements:

(a) Source. This material shall be obtained from approved sources and the area from which this material is obtained shall be stripped and cleaned before blasting.

(b) Grading. This material shall meet the requirements of the following table:

TABLE 704.09A - DENSE GRADED CRUSHED STONE FOR SUB-BASE

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE
3½"	100
3"	90-100
2"	75-100
1"	50- 80
½"	30- 60
No. 4	15- 40
No. 200	0- 10

(c) Percent of Wear. The percent of wear of the parent rock shall be not more than 8 when tested in accordance with AASHTO T-3, or the crushed stone a percent of wear of not more than 40 when tested in accordance with AASHTO T-96.

(d) Thin and Elongated Pieces. Not more than 30 percent, by weight, of thin or elongated pieces will be permitted.

Thin and elongated pieces will be determined on the material coarser than the No. 4 sieve.

704.10 GRAVEL BACKFILL FOR SLOPE STABILIZATION. Gravel backfill for slope stabilization shall be obtained from approved sources, consisting of satisfactorily graded, free draining, hard, durable stone and coarse sand reasonably free from loam,

silt, clay, and organic material.

The gravel backfill shall meet the requirements of the following table:

TABLE 704.10A - GRAVEL BACKFILL FOR SLOPE STABILIZATION

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE	SAND PORTION
No. 4	20-50	100
No. 100		0- 20
No. 200		0- 10

The stone portion of the gravel backfill shall be uniformly graded from coarse to fine, and the maximum size stone particles shall not exceed 2/3 the thickness of the layer being placed.

704.11 GRANULAR BACKFILL FOR STRUCTURES. Granular backfill for structures shall be obtained from approved sources, consisting of satisfactorily graded, free draining granular material reasonably free from loam, silt, clay, and organic material.

The granular backfill shall meet the requirements of the following table:

TABLE 704.11A - GRANULAR BACKFILL FOR STRUCTURES

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves TOTAL SAMPLE	SAND PORTION
3"	100	
2½"	90-100	
No. 4	50-100	100
No. 100		0- 18
No. 200		0- 8

TA 404 2C Rev. 2/79

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION - GEOLOGY SUB-DIVISION

JOHNSON GRANULAR DATA SHEET NO. 1

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
1	1	1979	1-12	0-1	No	68	68	62	53	52	27	-	-	Owner: Maurice Hoadley. Area is a meadow with a lower level on the east side of the Gihon River. Area is 0.1 mile west of Town Highway No. 28 (in the northeast corner of town). Access is on the west side of Town Highway, 0.11 mile south of the Hyde Park Town Line. Area is just west of, and above a low horse pasture with large boulders and heavy, wet soil. Test No. 1 was in the southwest corner of meadow. Material is: 0'-1', overburden; 1'-12', silty fine sand with angular stones; bottom, silty fine sand with angular stones.
	2	1979	0.5-4	0-0.5	Yes	100	98	85	63	5	3	-	Sand	Test No. 2 was in a very tiny pit near a field-ditch. Material is: 0'-0.5', overburden; 0.5'-4', pebbly gravel or gravelly sand; bottom, till. Material is just a skim.
	3	1979	0.5-6	0-0.5	No	90	82	58	39	9	5	19.7%	Gravel	Test No. 3 was in the southwest end of a small field on the lower level. Material is: 0'-0.5', overburden; 0.5'-6', coarse

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JOHNSON GRANULAR DATA SHEET NO. 2

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														gravel with some boulders; bottom, silty fine sand. This is a recent fluvial gravel. Rocks up to 24" were excavated.
	4	1979	1.5-6	0-1.5	No	85	85	66	47	11	5	22.3%	Gravel	Test No. 4 was in northeast end of small, lower field, 100' N75°E of Test No. 3. Material is: 0'-1.5', overburden; 1.5'-6', gravel; bottom, bedrock or boulders. What material there is, looks good, but there is not much.
2	1-A	1978	1-5	0-1	Yes	100	90	76	62	3	2	28.2%	Sand	Owner: Raymond Chauvin. Former owner: Jude Spear. Owner says material is available if he can sell enough to make it worthwhile. Area is a pit in cornfields, 0.05 mile northwest of Town Highway No. 28; access is 0.49 mile north of the junction of Town Highways No. 28 and 29.
														Test No. 1-A was in the north face of upper level of pit. Material is: 0'-1', overburden; 1'-5', interbedded sand, pebbly gravel, and fine gravel; bottom, Test No. 1-B. Material is mostly a sand with a skim of pebbly gravel.

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JOHNSON GRANULAR DATA SHEET NO. 3

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	1-B	1979	5-10	-	Yes	100	96	76	56	4	3	28.2%	Gran. Borrow (Gravel)	Test No. 1-B was below Test No. 1-A. Material is: 5'-10', quite uniform, pebbly, fine gravel (poorly graded); bottom, pebbly fine gravel.
	2	1979	1-12	0-1	No	100	100	96	86	7	3	-	Sand	Test No. 2 was in southeast corner of field, 550' S53°W of old barn. Material is: 0'-1', overburden; 1'-7', pebbly sand; 7'-8', sand; 8'-12', pebbly sand; bottom, pebbly sand.
	3	1979	1-11	0-1	No	100	98	76	57	3	2	28.6%	Gran. Borrow (Gravel)	Test No. 3 was in west corner of field, 470' N60°W of Test No. 2. Material is: 0'-1', overburden; 1'-11', quite uniform gravel; bottom, gravel.
	4	1979	2-10	0-2	No	100	100	94	85	7	4	-	Sand	Test No. 4 was in north corner of field, 500' N70°E of Test No. 3. Material is: 0'-2', overburden; 2'-6', pebbly sand; 6'-8', sand with some pebbles; 8'-10', pebbly sand; bottom, sand.
	5	1979	1-10	0-1	No	98	90	67	49	5	3	27.8%	Gran. Borrow (Gravel)	Test No. 5 was in field, 250' S70°W of Test No. 4. Material is: 0'-1', overburden; 1'-7', gravelly sand or fine gravel;

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JOHNSON GRANULAR DATA SHEET NO. 4

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														7'-8.5', silty sand; 8.5'-10', gravel; bottom, gravel.
	6	1979	2-10	0-2	No	100	100	97	91	30	12	-	Sand	Test No. 6 was near center of field, 170' south of Test No. 4. Material is: 0'-2', overburden; 2'-6', pebbly sand; 6'-10', sand; bottom, gravel.
	7	1979	1-11	0-1	No	100	100	90	86	18	4	-	Sand	Test No. 7 was near barn in northeast corner of field, 440' N70°E of Test No. 6. Material is: 0'-1', overburden; 1'-7.5', pebbly sand; 7.5'-11', sand; bottom, sand.
	8	1979	1-11	0-1	Yes	100	100	100	97	28	10	-	Sand	Test No. 8 was in pit floor, 50' S10°W of Test No. 1-B. Material is: 0'-1', overburden; 1'-4', pebbly sand and fine gravel; 4'-5', sand; 5'-7.5', pebbly fine gravel; 7.5'-11', sand; bottom, sand.
	9	1979	1-12	0-1	Yes	100	100	100	98	86	38	-	-	Test No. 9 was in floor of lower level of pit. Material is: 0'-1', overburden; 1'-12', silty fine sand; bottom, silt-clay.

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JOHNSON GRANULAR DATA SHEET NO. 5

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	10	1979	1-11	0-1	No	100	100	100	97	15	6	-	Sand	Test No. 10 was in southwest corner of field north of pit. Material is: 0'-1', overburden; 1'-11', quite uniform sand; bottom, sand.
	11	1979	0.5-10	0-0.5	No	100	100	100	97	18	3	-	Sand	Test No. 11 was in the northwest corner of the field north of pit, 315' N20°E of Test No. 10. Material is: 0'-0.5', overburden; 0.5'-4', sand; 4'-5', pebbly sand; 5'-10', sand; bottom, sand.
	12	1979	1-11	0-1	No	100	100	100	96	28	12	-	Sand	Test No. 12 was in northeast corner of field north of pit, 465' S75°E of Test No. 11. Material is: 0'-1', overburden; 1'-2', sand; 2'-3', dirty gravel; 3'-6', pebbly sand; 6'-7', dirty gravel; 7'-11', sand; bottom, silty sand and water.
	13	1979	1-11	0-1	No	100	88	82	79	21	6	-	Gran. Borrow (Sand)	Test No. 13 was near farm house in southeast corner of field north of pit, 360' S35°W of Test No. 12. Material is: 0'-1', overburden; 1'-5.5', gravelly sand; 5.5'-7', pebbly sand; 7'-8', sand; 8'-11', silty

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JOHNSON GRANULAR DATA SHEET NO. 6

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														sand; bottom, silty sand.
	14	1979	0.5-10	0-0.5	No	100	100	94	85	4	3	-	Sand	Test No. 14 was near the center of the field north of pit, 310' S75°W of Test No. 12, and 240' N25°W of Test No. 13. Material is: 0'-0.5', overburden; 0.5'-4', pebbly sand; 4'-5', sand; 5'-6', pebbly sand; 6'-10', sand; bottom, sand.
3	1	1978	1-9	0-1	Yes	86	86	65	52	10	6	21.9%	Gravel	Owner: Roy Lamphear. Former owner: Elvin Howard. Area is a sprawling, shallow pit which seems to be nearly depleted. Area is 0.04 mile southeast of Vermont Route 100-C; access is 0.24 mile northeast of the junction of Town Highway No. 26 and Vermont Route 100-C. Test No. 1 was in spur on upper face of east end of pit. Material is: 0'-1', overburden; 1'-8', gravel; 8'-9', sand; bottom, sand.
	2	1979	0-9	-	Yes	100	100	100	100	34	14	-	Gran. Borrow (Sand)	Test No. 2 was in northeast face of lower (active) level in the northeast end of pit, 50' S40°W of Test No. 1.

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JOHNSON GRANULAR DATA SHEET NO. 7

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Material is: 0'-9', layers of sand, fine sand, and silty fine sand; bottom, fine sand.
	3	1979	0.5-10	0-0.5	Yes	86	80	67	46	5	3	28.4%	Gran. Borrow (Gravel)	Test No. 3 was in face in northwest corner of pit, 25' south of Vermont Route 100-C. Material is: 0'-0.5', overburden; 0.5'-9', gravel; 9'-10', pebbly gravel; bottom, sloughed material. This site was sampled only to get an indication of the nature of material across the road.
	4	1979	2-8	0-2	Yes	85	79	55	42	16	12	22.6%	Gran. Borrow (Gravel)	Test No. 4 was in overgrown south face near pit road. Material is: 0'-2', overburden; 2'-8', dusty gravel; bottom, sloughed material and many roots (hard digging). Feature drops down quite a bit just south of pit, so there is not much extension in this direction.
	5	1979	0-9	-	Yes	100	87	72	58	2	1	21.3%	Gravel	Test No. 5 was in south face of small lobe in southwest corner of pit. Material is: 0'-9', a clean-looking gravel which

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JOHNSON GRANULAR DATA SHEET NO. 8

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														caves very readily; bottom, sloughed material. There is very little extension to the southwest.
	6	1979	1-13	0-1	Yes	74	74	58	39	7	4	23.4%	Gravel	Test No. 6 was in northwest face of small lobe in southwest part of pit. Material is: 0'-1', overburden; 1'-13', gravel; bottom, sloughed material.
	7	1979	0.5-9	0-0.5	Yes	100	100	97	92	50	16	-	-	Test No. 7 was in floor in south side of middle of pit. Material is: 0'-0.5', overburden; 0.5'-2', pebbly sand; 2'-6', sand; 6'-9', silty fine sand; bottom, silty fine sand and water.
	8	1979	0.5-10	0-0.5	Yes	100	100	97	90	63	24	-	-	Test No. 8 was in floor near access road, 250' N80°W of Test No. 7. Material is: 0'-0.5', overburden; 0.5'-2', fine gravelly sand; 2'-4', pebbly sand; 4'-6', sand; 6'-10', silty fine sand; bottom, silty fine sand and water.
	9	1979	0-10	-	Yes	94	92	84	69	7	4	-	Gran. Borrow (Sand)	Test No. 9 was in southeast floor of west lobe of pit, 40' northeast of Test No. 5.

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JOHNSON GRANULAR DATA SHEET NO. 9

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Material is: 0'-10', layers of pebbly fine gravel and pebbly sand; bottom, fine gravel, pebbly sand, and water.
4	1-A	1978	0-5	-	Yes	100	100	100	100	21	15	-	Gran. Borrow (Sand)	Owner: Town of Johnson. Area is a pit complex and an uncut field. Pit is part of the Johnson Land Fill, 0.15 mile west of Town Highway No. 28. Access is 0.23 mile north of the junction of Town Highways No. 28 and 29. Test No. 1-A was in southeast face of the southernmost lobe of pit. Material is: 0'-5', silty fine sand, becoming moist from 3'-5'; bottom, gravel.
	1-B	1978	5-10	-	Yes	90	84	53	36	7	5	23.5%	Gravel	Test No. 1-B was below Test No. 1-A. Material is: 5'-10', hard-packed gravel; bottom, sloughed material.
	2-A	1978	Stock	- pile	Yes	100	100	-	51	15	10	40.6%	Gran. Borrow (Crushed Gravel)	Test No. 2-A was from a stock-pile of crushed gravel near south lobe of pit.

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JOHNSON GRANULAR DATA SHEET NO. 10

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2-B	1978	Stock	- pile	Yes	100	100	-	57	16	10	42.1%	Gran. Borrow (Crushed) Gravel	Test No. 2-B was from a stockpile of crushed gravel near south lobe of pit.
	3	1978	1.5-8	0-1.5	Yes	68	60	43	34	4	2	24.8%	Gravel	Test No. 3 was in east face of east lobe of pit near access road. Material is: 0'-1.5', overburden; 1.5'-6', hard-packed gravel; 6'-7', gravelly sand; 7'-8', pebbly sand; bottom, sloughed material.
	4-A	1978	0.5-6	0-0.5	Yes	93	90	65	36	3	2	22.9%	Gravel	Test No. 4-A was in the northwest face of the southermost lobe of pit, 200' N60°W of Test No. 1. Material is: 0'-0.5', overburden; 0.5'-6', gravel with a silt-clay coating; bottom, sand (Test No. 4-B).
	4-B	1978	6-8	-	Yes	100	100	100	94	5	4	-	Sand	Test No. 4-B was below Test No. 4-A. Material is: 6'-8', sand; 8'-11', sloughed material; hole caved too much to sample.
	5	1978	0-5.5	-	Yes	100	100	98	90	4	2	-	Sand	Test No. 5 was in northwest face of small northwest lobe of pit. Material is: 0'-1', pebbly fine gravel; 1'-2', pebbly sand; 2'-2.5', a layer of cemented

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JOHNSON GRANULAR DATA SHEET NO. 11

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														pebbles with a silt-clay coating; 2.5'-5', coarse pebbly sand; 5'-5.5', sand with some cobbles; bottom, sloughed material.
	6-A	1978	Stock	pile	Yes	100	100	-	57	16	12	43.2%	Gran. Borrow (Crushed Gravel)	Test No. 6-A was from a stock-pile of crushed gravel.
	6-B	1978	Stock	pile	Yes	100	100	-	72	26	5	40.2%	Gran. Borrow (Crushed Gravel)	Test No. 6-B was from a stock-pile of crushed gravel.
	7	1979	1.5-10	0-1.5	Yes	100	100	100	100	7	2	-	Sand	Test No. 7 was in upper floor in east lobe of old pit, 200' north of land-fill access. Material is: 0'-1.5', overburden; 1.5'-3', gravelly sand; 3'-10', sand; bottom, silty fine sand or silt-clay.
	8	1979	6-11	0-6	Yes	100	100	100	98	80	36	-	-	Test No. 8 was in floor, 60' S60°W of, and 10' below Test No. 7. Material is: 0'-6', overburden; 6'-11', sand or silty fine sand; bottom, silty fine sand.

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JOHNSON GRANULAR DATA SHEET NO. 12

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	9	1979	2-8	0-2	No	93	82	52	39	7	4	27.5%	Gran. Borrow (Gravel)	Test No. 9 was in the southwest corner of the field east of the land fill. Material is: 0'-2', overburden; 2'-8', gravel with 1" to 3" stones; bottom, sand.
	10	1979	1-11	0-1	No	90	87	67	48	10	6	24.0%	Gravel	Test No. 10 was in the southeast corner of field, 450' S45°E of, and 7' below Test No. 9. Material is: 0'-1', overburden; 1'-5.5', sand or silty sand; 5.5'-7', gravel; 7'-8.5', sand; 8.5'-11', gravelly sand; bottom, gravel.
	11	1979	2.5-12	0-2.5	No	92	83	59	40	11	6	27.7%	Gran. Borrow (Gravel)	Test No. 11 was in field near pit drive, 265' N25°E of Test No. 10. Material is: 0'-2.5', overburden; 2.5'-12', gravel; bottom, gravel.
	12	1979	0.5-11	0-0.5	Yes	100	100	100	100	68	21	-	-	Test No. 12 was in floor along blocked access road, 115' N25°W of Town Highway No. 28. Material is: 0'-0.5', overburden; 0.5'-6.5', silty fine sand; 6.5'-8.5', layer of silt-clay; 8.5'-11', sand; bottom, silty fine sand.

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JOHNSON GRANULAR DATA SHEET NO. 13

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	13	1979	1-12	0-1	Yes	100	100	100	100	83	26	-	-	Test No. 13 was in floor, 140' N10°W of Test No. 12. Material is: 0'-1', overburden; 1'-4', fine sand; 4'-5', layer of silt-clay; 5'-8', sand; 8'-9', layer of silt-clay; 9'-12', sand; bottom, sand.
	14	1979	1-12	0-1	Yes	100	100	96	93	37	12	-	Gran. Borrow (Sand)	Test No. 14 was in floor, 160' S75°E of Test No. 13. Material is: 0'-1', overburden; 1'-12', sand or silty fine sand; bottom, silty fine sand.
	15	1979	0.5-14	0-0.5	Yes	85	85	58	45	7	5	25.6%	Gran. Borrow (Gravel)	Test No. 15 was in north face of old pit, 40' N75°E of Test No. 14. Material is: 0'-0.5', overburden; 0.5'-4', gravel; 4'-6', sand; 6'-6.5', layer of silt-clay; 6.5'-12', gravel; 12'-14', sand; bottom, sand.
	16	1979	1-12	0-1	Yes	100	100	100	100	57	16	-	-	Test No. 16 was in floor, 135' N5°W of Test No. 14. Material is: 0'-1', overburden; 1'-7', silty fine sand; 7'-8', layer of silt-clay; 8'-12', silty fine sand; bottom, silty fine sand.

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JOHNSON GRANULAR DATA SHEET NO. 14

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	17	1979	1-10	0-1	Yes	100	100	100	99	64	16	-	-	Test No. 17 was in floor, 210' west of Test No. 16. Material is: 0'-1', overburden; 1'-2', pebbly sand; 2'-10', sand; bottom, silt-clay.
	18	1979	1-11	0-1	Yes	100	100	99	96	52	14	-	Gran. Borrow (Sand)	Test No. 18 was in floor of upper lobe near land fill 210' N35°W of Test No. 17. Material is: 0'-1', overburden; 1'-2', pebbly sand; 2'-11', sand; bottom, moist silt-clay.
	19	1979	0-10	-	Yes	100	100	100	99	61	35	-	-	Test No. 19 was in floor, 190' S55°W of Test No. 18. Material is: 0'-10', sand; bottom, silt-clay.
5	1	1979	1-11	0-1	No	100	100	94	84	6	4	-	Sand	Owner: Bingham G. Day. As of May, 1979 property was for sale through Marble R. E. Area is a large flat field northeast of the junction of Town Highways No. 5 and 28 and Vermont Route 100-C. Access is north from Town Highway No. 28, 0.12 mile east of the above junction. Area was formerly part of the sod farm.

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JOHNSON GRANULAR DATA SHEET NO. 15

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Test No. 1 was in field, 130' N15°E of Town Highway No. 28. Material is: 0'-1', overburden; 1'-4', sand; 4'-7', pebbly sand; 7'-11', sand; bottom, sand. Test-hole caved very readily.
	2	1979	1-11	0-1	No	100	100	100	89	16	5	-	Sand	Test No. 2 was in field, 240' N25°E of Test No. 1. Material is: 0'-1', overburden; 1'-5', sand; 5'-9.5', pebbly sand; 9.5'-11', sand; bottom, sand. Test-hole caved very readily.
	3	1979	0.5-12	0-0.5	No	100	100	93	86	5	3	-	Sand	Test No. 3 was in field, 280' N60°W of Test No. 2. Material is: 0'-0.5', overburden; 0.5'-2', sand; 2'-4', pebbly sand; 4'-5', sand; 5'-8.5', pebbly sand; 8.5'-12', sand; bottom, sand. The material in Test No. 3 was in thinner beds and more varied than that in Tests No. 1 and 2.
	4	1979	0.5-12	0-0.5	No	100	100	100	94	7	3	-	Sand	Test No. 4 was near tree line at north end of field, 340' N72°E of Test No. 3. Material is: 0'-0.5', overburden; 0.5'-2', sand; 2'-3', pebbly sand;

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JOHNSON GRANULAR DATA SHEET NO. 16

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														3'-6', sand; 6'-10', pebbly sand; 10'-12', sand; bottom, sand. Material is not as pebbly as that in Test No. 1, 2, and 3.
	5	1979	0.5-11	0-0.5	No	100	100	92	84	6	4	-	Sand	Test No. 5 was in field, 390' S27°E of Test No. 4. Material is: 0'-0.5', overburden; 0.5'-5', sand; 5'-9', pebbly sand; 9'-11', sand; bottom, sand.
	6	1979	1-9	0-1	No	100	100	100	96	11	6	-	Sand	Test No. 6 was in east edge of field, 445' S35°E of Test No. 5. Material is: 0'-1', overburden; 1'-6', sand; 6'-9', coarse sand; bottom, bedrock or large boulder.
	7	1979	1-11	0-1	No	100	100	100	100	9	3	-	Sand	Test No. 7 was in northeast corner of field near woods, 270' N30°E of Test No. 6. Material is: 0'-1', overburden; 1'-11', fairly clean, coarse, quite uniform sand; bottom, sand.
	8	1979	1-11	0-1	No	100	100	92	81	7	5	-	Sand	Test No. 8 was in field near road, 330' N75°W of Test No. 6, 130' north of road. Material is: 0'-1', overburden; 1'-4', sand; 4'-5', fine gravelly sand;

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JOHNSON GRANULAR DATA SHEET NO. 17

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														5'-8', pebbly sand; 8'-11', sand with some pebbles; bottom, sand.
6	1	1978	0.5-11	0-0.5	Yes	100	91	66	51	4	3	26.6%	Gran. Borrow (Gravel)	Owner: Bingham G. Day. As of May, 1979 property was for sale through Marble R. E. Area is a pit in field, 0.1 mile south of Town Highway No. 28. Access is 0.55 mile east of the junction of Town Highways No. 5 and 28, and Vermont Route 100-C. Field was once part of the Turf Farm, but is now overgrown. Test No. 1 was in west face of shallow pit. Material is: 0.5'-5.5', hard-packed gravel; 5.5'-11', sand, pebbly sand, and fine gravel beds; bottom (floor-level), gap-graded gravel which is mostly small cobbles and sand. Only extension is west and northwest.
	2	1979	0-9	-	Yes	100	100	100	97	36	11	-	Gran. Borrow (Sand)	Test No. 2 was in floor, 20' east of Test No. 1. Material is: 0'-3', coarse sand; 3'-9', sand; bottom, silty fine sand.

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JOHNSON GRANULAR DATA SHEET NO. 18

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	3	1979	0-12	-	Yes	100	100	100	100	21	5	-	Sand	Test No. 3 was in floor, 270' N60°E of Test No. 2. Material is: 0'-12', sand; bottom, sand.
	4	1979	3-6.5	0-3	No	97	97	78	58	21	15	33.8%	Gran. Borrow (Gravel)	Test No. 4 was in field, 135' N45°E of telephone pole #01. Material is: 0'-3', overburden; 3'-6.5', silty gravel; bottom, silt-clay and water.
	5-A	1979	1-5.5	0-1	No	100	100	93	84	27	13	-	Gran. Borrow (Sand)	Test No. 5-A was in field, 135' N55°W of Telephone pole #01. Material is: 0'-1', overburden; 1'-5.5', sand; bottom, gravel (Test No. 5-B).
	5-B	1979	5.5-10.5	-	No	91	88	72	58	9	6	21.6%	Gravel	Test No. 5-B was below Test No. 5-A. Material is: 5.5'-10.5', gravel; bottom, gravel and water.
	6	1979	1.5-7.5	0-1.5	No	96	94	72	59	10	5	23.1%	Gravel	Test No. 6 was in field, 180' S30°W of Telephone pole #01. Material is: 0'-1', overburden; 1'-6.5', gravel; 6.5'-7.5', pebbly gravel; bottom, sand.
	7	1979	1-12	0-1	No	100	95	72	52	6	4	33.2%	Gran. Borrow (Gravel)	Test No. 7 was in small clearing, 110' N60°of, and 12'

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JOHNSON GRANULAR DATA SHEET NO. 19

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														above Test No. 3. Material is: 0'-1', overburden; 1'-12', gravel or pebbly gravel; bottom, gravel.
7	1	1979	1.5-11	0-1.5	No	100	87	80	71	7	4	-	Gran. Borrow (Sand)	Owner: Merrill Locke. Area is a long meadow northeast of Town Highway No. 30. The access is 0.43 mile southeast of the junction of Town Highway No. 30 and Vermont Route 100-C. Land is leased as meadow to a local farmer. Test No. 1 was along the north-east edge of meadow. Material is: 0'-1.5', overburden; 1.5'-3', pebbly fine gravel; 3'-5', pebbly sand; 5'-6', sand; 6'-11', pebbly sand; bottom, sand. Excess pebbles could be easily screened from this material to produce a good sand.
8	1	1979	1-5	0-1	Yes	100	100	100	100	91.0	87.3	-	-	Owner: David Lane. Area is a tiny pit in large field north-east of Town Highway No. 30,

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JOHNSON GRANULAR DATA SHEET NO. 20

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														just west of the Hyde Park Town Line. Test No. 1 was in floor of small pit at east end of field. Material is: 0'-1', overburden; 1'-5', silt-clay. Material is classed as silt.
	2	1979	1-7	0-1	No	100	100	100	100	48	17	-	-	Test No. 2 was in corner of field, 90' N65°E of, and 7' above Test No. 1. Material is: 0'-1', overburden; 1'-7', sand; bottom, silt-clay and a seep of water.
9	1	1979	1-10	0-1	No	100	100	100	99	26	7	-	Sand	Owner: Raymond Gilbert. Area is a large corn field west of Town Highway No. 30. Access is 0.1 mile northwest of the Hyde Park Town Line. Test No. 1 was along edge of northwest corner of corn field. Material is: 0'-1', overburden; 1'-10', uniform sand; bottom, sand.
	2	1979	1-10.5	0-1	No	100	100	100	100	32	9	-	Gran. Borrow (Sand)	Test No. 2 was along edge of field, 250' N85°E of Test No. 1. Material is: 0'-1', overburden;

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JOHNSON GRANULAR DATA SHEET NO. 21

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														1'-10.5', quite uniform sand; bottom, sand.
	3	1979	1-12	0-1	No	100	100	100	100	21	5	-	Sand	Test No. 3 was in corner of field, 670' S20°W of Test No. 2. Material is: 0'-1', overburden; 1'-12', quite uniform sand; bottom, sand.
	4	1979	1-12	0-1	No	100	100	100	100	48	33	-	-	Test No. 4 was near west edge of field road, 375' N5°W of Test No. 3. Material is: 0'-1', overburden; 1'-12', quite uniform, brown sand; bottom, sand.
	5	1979	1-7.5	0-1	No	100	100	100	100	81	32	-	-	Test No. 5 was near middle of field, 275' S80°E of Test No. 4, and 280' S10°E of Test No. 2. Material is: 0'-1', overburden; 1'-7.5', sand, bottom, silt-clay.
10	1	1979	1-10	0-1	No	100	100	95	87	26	10	-	Sand	Owner: Merrill Locke. Area is a meadow leased by owner to a local farmer. Field is southwest of Town Highway No. 30; access is 0.4 mile southeast of the junction of Town Highway No. 30 and Vermont Route 100-C.

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JOHNSON GRANULAR DATA SHEET NO. 22

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Test No. 1 was in the south corner of meadow. Material is: 0'-1', overburden; 1'-3', pebbly sand; 3'-4', sand; 4'-6', pebbly sand; 6'-10', pebbly sand with smaller pebbles than in the 4'-6' interval; bottom, sand.
11	1	1978	0.5-15	0-0.5	Yes	100	100	100	99	5	3	-	Sand	Owner: Raymond Inkel. Area is a large field with an over-grown pit at the southeast edge (bordering Vermont Route 100-C). Field is rented to Wayne Stearn who has it planted to alfalfa. Access is 0.1 mile south of the junction of Town Highway No. 30 and Vermont Route 100-C. Neighbor said that a nearby drilled-well went through 85' of white sand to reach water. Test No. 1 was in face at west end of pit and was sampled to show what the material in the field was like. Material is: 0'-0.5', overburden; 0.5'-15', sand; bottom, sloughed material (sand, but caves too much to sample).

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JOHNSON GRANULAR DATA SHEET NO. 23

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2	1979	0.5-12	0-0.5	Yes	100	100	100	97	6	4	-	Sand	Test No. 2 was at edge of meadow atop the northwest face of pit. Material is: 0'-0.5', overburden; 0.5'-12', uniform sand; bottom, sand.
	3	1979	0.5-12	0-0.5	Yes	100	93	90	83	30	7	-	Sand	Test No. 3 was in floor of pit. Material is: 0'-0.5', overburden; 0.5'-12', very uniform pebbly sand with three layers of oxidized sand; bottom, sand. Test-hole caved very readily.
12	1-A	1978	0.5-7.5	0-0.5	Yes	78	78	57	46	6	4	32.2%	Gran. Borrow (Gravel)	Owner: Mrs. Leo Stearns. Area is a pit along the south edge of fields. Sampling in pit only was allowed. Pit is 0.4 mile west of Vermont 100-C. Access is 0.36 mile south of the junction of Town Highway No. 30 and Vermont Route 100-C. Access was via a woods road which was a bit wet in places. Test No. 1-A was in upper part of northwest face of pit. Material is: 0'-0.5', overburden; 0.5'-7.5', dusty gravel; bottom, sand (Test No. 1-B).

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JOHNSON GRANULAR DATA SHEET NO. 24

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Material is a skim of gravel and resembles a shoal or possibly a delta.
	1-B	1978	7.5-25	-	Yes	100	100	100	93	15	5	-	Sand	Test No. 1-B was below Test No. 1-A. Material is: 7.5'-17', sand; 17'-19', pebbly sand; 19'-19.5', layer of silt-clay; 19.5'-22', pebbly sand; 22'-25', layers of sand and silty sand; bottom, sand and pebbly sand.
	1-C	1978	25-40	-	Yes	100	96	85	73	19	8	-	Sand	Test No. 1-C was below Test No. 1-B. Material is: 25'-40'- layers of sand and pebbly sand; bottom, sand and pebbly sand. Face caved very readily.
	2-A	1978	0.5-7	0-0.5	Yes	95	95	81	69	11	5	-	Gran. Borrow (Sand)	Test No. 2-A was in top part of middle of south face of newest pit. Material is: 0'-0.5', overburden; 0.5'-7', layers of sand, pebbly sand, gravel, and a silt-clay seam; bottom, pebbly sand (Test No. 2-B).
	2-B	1978	7-16	-	Yes	100	100	94	83	11	6	-	Sand	Test No. 2-B was below Test No. 2-A. Material is: 7'-9', pebbly sand; 9'-10', gravel; 10'-11', pebbly sand; 11'-13', sand; 13'-14', silty fine sand;

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JOHNSON GRANULAR DATA SHEET NO.25 TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														14'-16', sand with a few random pebbles; bottom, sand and pebbly sand (Test No. 2-C).
	2-C	1979	16-23	-	Yes	100	100	97	85	34	27	-	-	Test No. 2-C was below Test No. 2-B. Material is: 16'-23', layers of sand and pebbly sand; bottom, sand and pebbly sand. Test caved very readily; very difficult getting this sample.
	3	1979	0.5-10.5	0-0.5	Yes	100	96	84	79	19	8	-	Sand	Test No. 3 was in northwest floor of pit, 15' southeast of Test No. 1-C. Material is: 0'-0.5', overburden; 0.5'-2', pebbly sand; 2'-3', sand; 3'-5', pebbly sand; 5'-10.5', sand; bottom, sand.
	4	1979	0-12	-	Yes	100	100	95	87	22	8	-	Sand	Test No. 4 was in floor, 15' northeast of Test No. 2-C. Material is: 0'-5', pebbly sand; 5'-12', sand; bottom, sand.
	5	1979	0-13	-	Yes	100	100	94	85	25	8	-	Sand	Test No. 5 was in floor of small, north lobe of lower (south) pit. Material is: 0'-13', sand with a few pebbles; bottom, sand.
	6	1979	1-11	0-1	Yes	100	100	89	76	14	7	-	Sand	Test No. 6 was in floor near east end of pit, 170' N80°E of

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JOHNSON GRANULAR DATA SHEET NO. 26

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Test No. 4. Material is: 0'-1', overburden; 1'-7', layers of sand, silty sand, and pebbly sand; 7'-10', fine gravelly sand; 10'-11', sand; bottom, sand.
	7	1979	1-13	0-1	Yes	89	89	82	80	35	11	-	Gran. Borrow (Sand)	Test No. 7 was in floor of lowest, easternmost level of pit, 130' east of Test No. 5. Material is: 0'-1', overburden; 1'-13', uniform sand; bottom, sand.
13	1	1978	0.5-11	0-0.5	Yes	100	100	96	85	11	6	-	Sand	Owner: Kenneth Brimmer. Area consists of 2 pits in woods south of Town Highway No. 18; access is 0.69 mile east of the junction of Town Highways No. 16 and 18. Both pits seem to be nearly depleted. The access is a bit steep in places, and has a culvert which needs some repairs. Test No. 1 was in northwest face of lower (south) pit. Material is: 0'-0.5', overburden; 0.5'-2', silty sand; 2'-3', layer of gravel; 3'-6', layer of sand and pebbly sand;

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JOHNSON GRANULAR DATA SHEET NO. 27

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														6'-7', cobbles; 7'-9', pebbly sand and coarse sand; 9'-10', layer of gravel; 10'-11', sand; 11'-13', sloughed material.
	2	1978	0.5-8	0-0.5	Yes	100	100	95	82	6	4	-	Sand	Test No. 2 was in west face of lower (south) pit, 70' S35°W of Test No. 1. Material is: 0'-0.5', overburden; 0.5'-3', sand and pebbly sand; 3'-4', fine gravel layer; 4'-6', sand; 6'-7', some cobbles over a layer of silt-clay; 7'-8', sand; bottom, sloughed material. The pit floor seems to be close to silt-clay.
	3	1979	1-6	0-1	Yes	96	87	73	59	14	5	8.6%	Gravel	Test No. 3 was in small clearing just west of access road. Material is: 0'-1', overburden; 1'-2', sand; 2'-6', dirty gravel; bottom, silty fine sand. The topography and material are quite similar to that of Map Identification No. 1. Note: Bedrock was encountered at 1' below floor in the southern most pit, and 2' below the

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JOHNSON GRANULAR DATA SHEET NO. 28

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														floor in two places in the middle and north lobes of the southern pit.
14	1	1978	1-9	0-1	Yes	100	100	85	73	28	15	-	Gran. Borrow (Sand)	Owner: Charles Patch, Jr. Former owner. Phil Stearns. Area is a small, inactive pit in a small field, 0.03 mile west of Town Highway No. 39; access is 0.09 mile south of the junction of Town Highways No. 1 and 39. Area appears to be nearly depleted. Test No. 1 was in northwest face of pit. Material is: 0'-1', overburden; 1'-9', non-descript, poorly sorted pebbly sand, pebbly gravel, and several layers of silt-clay; bottom, sloughed material.
	2	1978	1-6.5	0-1	Yes	92	92	82	61	16	11	-	Gran. Borrow (Sand)	Test No. 2 was in southwest face of pit, 60' south of Test No. 1. Material is: 0'-1', overburden; 1'-3', dusty fine gravel; 3'-5.5', layers of silt-clay; 5.5'-6.5', sand and pebbly sand; bottom, pebbly fine gravel.

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JOHNSON GRANULAR DATA SHEET NO. 29

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	3	1978	1-11	0-1	No	100	89	69	48	12	7	26.0%	Gran. Borrow (Gravel)	Test No. 3 was in face of bank at south end of field, 140' south of Test No. 2. Material is: 0'-1', overburden; 1'-11', zones of dirty, silty gravel, sand, rock fragments, and gravel; bottom, sloughed material.
	4-A	1979	0.5-7	0-0.5	No	100	100	100	89	35	14	-	Gran. Borrow (Sand)	Test No. 4-A was near tree line, 10' west of, and above Test No. 2. Material is: 0'-0.5', overburden; 0.5'-7', sand or silty fine sand; bottom, dirty gravel (Test No. 4-B).
	4-B	1979	7-10	-	No	100	100	72	54	25	16	32.0%	-	Test No. 4-B was below Test No. 4-A. Material is: 7'-10', dirty gravel; bottom, silty fine sand.
	5	1979	0.5-7	0-0.5	Yes	95	92	77	61	36	22	30.7%	-	Test No. 5 was in floor, 15' east of Test No. 2. Material is: 0'-0.5', overburden; 0.5'-2', pebbly sand; 2'-4', boulders; 4'-7', silty fine sand and stones; bottom, silty fine sand and stones. There were many 4" to 8" stones.
	6	1979	1.5-10	0-1.5	No	96	87	71	53	15	9	18.9%	Gran. Borrow (Gravel)	Test No. 6 was near tree line, on lower level of meadow, 175' S35°W of Test No. 5.

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JOHNSON GRANULAR DATA SHEET NO. 30

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Material is: 0'-1.5', overburden; 1.5'-10', quite uniform but dirty gravel; bottom, gravel.
15	1	1978	1-19	0-1	Yes	100	100	98	87	12	5	-	Sand	Owner: Luther Hooper. Area is a pit between fields and a wooded knoll. Pit is 0.09 mile east of Town Highway No. 39. Access is 0.38 mile south of the junction of Town Highways No. 1 and 39. Many pines were planted on the wooded knoll. Pit is on the north edge of the knoll. Test No. 1 was in south-southwest face of lower pit level. Material is: 0'-1', overburden; 1'-19', layers of sand, coarse sand, pebbly sand, and pebbles; bottom, sloughed material.
	2	1978	1-23	0-1	Yes	100	100	98	88	10	6	-	Sand	Test No. 2 was in upper part of middle of southeast face of lowest pit level, 90' N25°E of Test No. 1. Material is: 0'-1', overburden; 1'-7', pebbly, very fine, silty gravel; 7'-23', layers of sand, pebbly sand, and silty sand; bottom, sloughed material.

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JOHNSON GRANULAR DATA SHEET NO. 31

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	3	1978	0.5-13	0-0.5	Yes	100	100	100	93	17	6	-	Sand	Test No. 3 was in southeast face of upper level. Material is: 0'-0.5', overburden; 0.5'-2.5', pebbly fine gravel; 2.5'-13', sand with a few thin layers of pebbles and a bit of silt-clay; bottom, sloughed material.
	4	1978	0.5-18	0-0.5	Yes	100	100	100	97	29	13	-	Gran. Borrow (Sand)	Test No. 4 was in south face of upper south end of pit, 120' S70°W of Test No. 3. Material is: 0'-0.5', overburden; 0.5'-7', sand and pebbly sand layers; 7'-9', silt-clay; 9'-14', sand; 14'-16', silt-clay; 16'-18', sand; bottom, sloughed material.
	5	1979	0.5-10	0-0.5	Yes	100	100	99	86	15	7	-	Sand	Test No. 5 was in floor of northeast corner of the lowest, northeast lobe of pit. Material is: 0'-0.5', overburden; 0.5'-2.5', pebbly sand; 2.5'-5', sand;5'-6', pebbly sand; 6'-10', sand; bottom, silt-clay and boulder or bedrock.
	6	1979	1-11	0-1	Yes	100	100	92	77	14	5	-	Sand	Test No. 6 was in floor, 115' S60°W of Test No. 5. Material is: 0'-1', overburden; 1'-4', pebbly sand; 4'-5', sand; 5'-9', pebbly sand; 9'-11', sand; bottom, silt-clay and boulders.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	7	1979	1.5-6	0-1.5	No	100	100	92	83	42	23	-	-	Test No. 7 was in southeast corner of meadow north of pit. Material is: 0'-1.5', overburden; 1.5'-6', sand and pebbly sand; bottom, silt-clay and boulders.
	8	1979	0.5-10	0-0.5	Yes	100	100	100	95	26	11	-	Sand	Test No. 8 was in floor of small west lobe of pit just east of access road. Material is: 0'-0.5', overburden; 0.5'-10', sand; bottom, moist, silty fine sand.
	9	1979	0-11	-	Yes	100	100	96	81	14	6	-	Sand	Test No. 9 was in upper floor in south end of pit. Material is: 0'-5', pebbly sand; 5'-11', sand; bottom, sand.
	10	1979	0.5-11	0-0.5	Yes	100	100	100	96	45	17	-	-	Test No. 10 was in small clearing on wooded knoll atop pit. Material is: 0'-0.5', overburden; 0.5'-11', sand; bottom, sand. Test-hole caved very readily.
16	1	1978	0.5-9	0-0.5	Yes	100	100	100	100	26	23	-	-	Owner: Mrs. Evelyn Davis. Area is a small pit on the lower, southwest edge of field. Pit is 0.39 mile southwest of Town Highway No. 1; access is 0.21

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JOHNSON GRANULAR DATA SHEET NO. 33

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														mile northwest of the junction of Town Highways No. 1 and 11. Pit is on the east end of a low, wooded knoll.
	2	1979	0-6	-	Yes	100	100	100	100	32	15	-	Gran. Borrow (Sand)	Test No. 1 was near center of low pit face. Material is: 0'-0.5', overburden; 0.5'-8.5', silty fine sand with some silt-clay layers; 8.5'-9', sand; bottom, silty fine sand.
	3	1979	1-9	0-1	Yes	100	97	81	68	30	20	-	-	Test No. 2 was in north floor of pit. Material is: 0'-6', sand; bottom, silt-clay. (Note: there is some gravel and a lot of water from 8' to 12' in the Test hole).
17	1	1978	1.5-6	0-1.5	No	100	100	100	100	45	21	-	-	Test No. 3 was in floor in southwest corner of pit, 90' S15°W of Test No. 2. Material is: 0'-1', overburden; 1'-3', pebbly gravel; 3'-4', layer of silt-clay; 4'-6', boulders; 6'-9', gravel and water; bottom, bedrock or very large boulders.
														Owner: Edward French. Area is a large field south of Town Highway No. 37 (near a very sharp curve to the north).

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Access is 0.52 mile north of the junction of Town Highway No. 37 and Vermont Route 15.
	1	1979	1.5-6	0-1.5	No	100	100	100	100	48	15	-	Gran. Borrow (Sand)	Test No. 1 was in south face of low roadside bank. Material is: 0'-1.5', overburden; 1.5'-6', firmly packed, silty fine sand with thin seams of silt-clay; bottom, silt-clay.
	2	1979	1.5-12	0-1.5	No	100	100	100	100	48	15	-	Gran. Borrow (Sand)	Test No. 2 was in north end of meadow, just south of small wooded knoll. Material is: 0'-1.5', overburden; 1.5'-4', coarse sand; 4'-9', sand; 9'-12', slightly moist sand; bottom, moist, silty fine sand.
	3	1979	1-9	0-1	No	100	100	96	90	45	36	-	-	Test No. 3 was in southwest corner of field, 340' S35°W of Test No. 2. Material is: 0'-1', overburden; 1'-5', sand; 5'-6.5', silty fine sand; 6.5'-9', sand; bottom, silt-clay.
	4	1979	1-11	0-1	No	100	100	100	97	38	22	-	-	Test No. 4 was in west end of uncut field, 250' N85°W of Test No. 2. Material is: 0'-1',

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JOHNSON GRANULAR DATA SHEET NO. 35

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														overburden; 1'-6', sand; 6'-11', silty fine sand; bottom, silt-clay.
	5	1979	1-10	0-1	No	100	100	97	92	27	12	-	Sand	Test No. 5 was along south edge of field, 275' east of Test No. 4, and 220' S15°E of Test No. 2. Material is: 0'-1', overburden; 1'-4', fine sand; 4'-7', pebbly sand; 7'-10', silty fine sand; bottom, silt-clay.
	6	1979	2-10	0-2	No	100	100	100	91	37	28	-	-	Test No. 6 was in sag of field, 205' N55°W of Test No. 5. Material is: 0'-2', overburden; 2'-4', silty fine sand; 4'-6', pebbly sand; 6'-10', silty fine sand; bottom, silt-clay. Water was encountered at 7'.
	7	1979	1-12	0-1	No	100	100	95	90	31	16	-	-	Test No. 7 was atop a low rise near east end of field, 270' N70°E of Test No. 5. Material is: 0'-1', overburden; 1'-5', silty fine sand; 5'-6', pebbly sand; 6'-7.5', fine sand; 7.5'-8.5', pebbly sand; 8.5'-12', silty fine sand; bottom, silty fine sand.
	8	1979	1-6	0-1	No	100	100	100	100	80.7	80.4	-	-	Test No. 8 was in the south end of the lower meadow.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Material is: 0'-1', overburden; 1'-6', silt-clay; bottom, silt-clay.
18	1	1979	1-12	0-1	No	100	100	100	99	85	52	-	-	Owner: Erle Morse. Area is a lobate field which is southwest of Map Identification No. 17. Area is 0.18 mile south of Town Highway No. 37. Access is 0.52 mile north of the junction of Town Highway No. 37 and Vermont Route 15. Test No. 1 was near drop-off at south end of field. Material is: 0'-1', overburden; 1'-4', pebbly sand; 4'-12', fine sand; bottom, silty fine sand.
	2	1979	1-12	0-1	No	100	100	100	100	96	48	-	-	Test No. 2 was near edge of drop-off at north end of field, 160' N15°E of Test No. 1. Material is: 0'-1', overburden; 1'-4', pebbly sand; 4'-12', silty fine sand; bottom, silty fine sand.
	3	1979	1-5	0-1	No	100	100	100	100	96	61	-	-	Test No. 3 was in low point between two fields, 200' north

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														of Test No. 2. Material is: 0'-1', overburden; 1'-5', silty fine sand; bottom, silt-clay.
	4	1979	0.5-12	0-0.5	No	100	100	100	100	67	29	-	-	Test No. 4 was in southwest corner of field north of low point, and 300' N15°W of Test No. 3. Material is: 0'-0.5', overburden; 0.5'-12', quite uniform fine sand; bottom, fine sand.
	5	1979	0.5-13	0-0.5	No	100	100	98	94	29	15	-	Gran. Borrow (Sand)	Test No. 5 was south of power line, 245' N65°E of Test No. 4. Material is: 0'-0.5', overburden; 0.5'-8', fine sand; 8'-13', silty fine sand; bottom, moist, silty, fine sand.
	6	1979	0.5-9	0-0.5	No	100	100	100	98	42	26	-	-	Test No. 6 was near northeast edge of field, 220' N33°E of Test No. 5. Material is: 0'-0.5', overburden; 0.5'-2', pebbly sand; 2'-7', sand; 7'-9', silty fine sand; bottom, silt-clay.
19	1	1979	28-34	0-1	Yes	96	84	52	38	6	4	16.7%	Gravel	Owner: Albert Nadeau. Area is a large pit which has a large

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														commercial aggregate operation in the yard. Area is north of Vermont Route 15. Access is via plant's driveway, 0.55 mile southeast of the junction of Town Highway No. 51 and Vermont Route 15. Working face is 0.25 mile from entrance. Owner said he would not sell to the State. Test No. 1 was in the lower part of steep, southwest face of east lobe of pit. Material is: 0'-1', overburden; 1'-28', treacherous, vertical face of uniform, pebbly, fine gravel (inaccessible); 28'-34', sand and fine gravel; bottom, sloughed material.
	2	1979	35-41	0-1	Yes	100	100	93	83	25	13	-	Sand	Test No. 2 was in bottom of east face, 120' N35°E of Test No. 1. Material is: 0'-1', overburden; 1'-35', sloughed material (sand, silt, and some stones); 35'-41', sand with a few stones; bottom, sloughed material.
20	1	1978	17-28	0-2	Yes	100	100	100	87	6	4	-	Sand	Owner: George Desmarais. Area is a pit in woods, 0.42 mile south and west of Town

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Highway No. 51. Right-of-way to property is owned by Chellis Collins. Access is 0.55 mile east of, and uphill from, the junction of Town Highway No. 51 and Vermont Route 15. Area is limited by property lines. Test No. 1 was in northeast face of pit. Material is: 0'-2', overburden; 2'-17', sand and pebbly sand on a vertical face which is not accessible; 17'-22', pebbly sand; 22'-24', sand; 24'-26', pebbly sand; 26'-27', sand; 27'-28', silty fine sand; bottom, silty fine sand.
	2	1978	10-20	0-1	Yes	92	92	76	57	8	5	19.8%	Gravel	Test No. 2 was in middle of face at south end of pit. Material is: 0'-1', overburden; 1'-10', gravel on a vertical face which is not accessible; 10'-14', gravel; 14'-15', sand; 15'-16', pebbly coarse sand; 16'-20', pebbly sand; bottom sloughed material.
	3	1979	0-10.5	-	Yes	100	100	100	98	76	42	-	-	Test No. 3 was in floor, 60' northeast of Test No. 2.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4	1979	0-10.5	-	Yes	100	100	92	82	21	10	-	Sand	Material is: 0'-3', sand; 3'-6.5', silty fine sand; 6.5'-10.5', silty sand; bottom, silty sand. Test No. 4 was in floor at west end of pit, 90' N75°W of Test No. 3. Material is: 0'-2.5', pebbly sand; 2.5'-5', sand; 5'-6', pebbly sand; 6'-10.5', gravelly sand; bottom, gravelly sand.
21	1	1978	1-8	0-1	Yes	100	100	99	92	7	6	-	-	Owner: Chellis Collins. Area is a large pit 0.35 mile south of Town Highway No. 51. The access is 0.55 mile northeast of, and uphill from the junction of Town Highway No. 51 and Vermont Route 15. Pit is in woods. Extension is southwesterly into woods. Test No. 1 was in southwest face of north lobe of pit. Material is: 0'-1', overburden; 1'-5', pebbly sand; 5'-8', coarse sand; bottom, sloughed material.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2	1978	1-8	0-1	Yes	100	100	96	78	12	4	-	Sand	Test No. 2 was in southeast face of north lobe of pit, 65' N65°E of Test No. 1. Material is: 0'-1', overburden; 1'-4.5', pebbly sand; 4.5'-6', sand; 6'-7', pebbly coarse sand; 7'-8', sand; bottom, sloughed material.
	3	1978	1-19	0-1	Yes	100	91	81	68	20	15	15.6%	Gran. Borrow (Sand)	Test No. 3 was in face of upper south-southwest end of pit. Material is: 0'-1', overburden; 1'-2', sand; 2'-5', poorly graded gravel with sand; 5'-6', sand; 6'-7', layer of silt-clay; 7'-9', sticky, silt-clay coated gravel; 9'-10', sand; 10'-12', gravel; 12'-15', silty sand; 15'-17', layer of silt-clay; 17'-19', sand and poorly graded fine gravel; bottom, silt-clay coated gravel.
	4-A	1978	0.5-12	0-0.5	Yes	100	100	100	95	11	6	-	Sand	Test No. 4-A was in upper face in northeast corner of pit. Material is: 0'-0.5', over-burden; 0.5'-12', sand with some pebbly sand zones and a few random small cobbles near the base of upper slope; bottom sloughed material.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4-B	1978	0.5-6	0-0.5	Yes	100	100	95	81	15	9	-	Sand	Test No. 4-B was in lower face in northeast corner of pit. Material is: 0'-0.5', overburden; 0.5'-2', sand; 2'-4', pebbly fine gravel; 4'-5', fine sand; 5'-6', sand with random small cobbles; bottom, sand.
	5	1978	1-14	0-1	Yes	100	100	92	89	19	10	-	Sand	Test No. 5 was in southeast face in upper level of pit. Material is: 0'-1', overburden; 1'-5', sand; 5'-6', layer of pebbly sand; 6'-14', sand; bottom, sand.
	6	1979	0.5-10.5	0-0.5	Yes	100	100	93	49	7	5	17.9%	Gravel	Test No. 6 was in northwest floor of upper level of pit, 90' south of Test No. 1 and 165' S85^{O}W of Test No. 7. Material is: 0'-0.5', overburden; 0.5'-10.5', very uniform, pebbly fine gravel (most stones are 1" or smaller); bottom, pebbly fine gravel.
	7	1979	0-12	-	Yes	100	100	100	99	20	7	-	Sand	Test No. 7 was in southeast floor of upper level of pit. Material is: 0'-2.5', coarse pebbly sand; 2.5'-5', sand; 5'-12', sand and fine sand; bottom, fine sand.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	8	1979	0.5-11	0-0.5	Yes	100	100	98	94	33	19	-	-	Test No. 8 was in floor, 80' east of Test No. 6. Material is: 0'-0.5', overburden; 0.5'-6', pebbly sand; 6'-11', silty fine sand; bottom, silty fine sand.
	9	1979	0-12	-	Yes	100	100	100	97	29	16	-	-	Test No. 9 was in southwest floor of upper level of pit, 95' S30°E of Test No. 6. Material is: 0'-1', pebbly sand; 1'-7', sand; 7'-12', fine sand; bottom, silty fine sand.
	10	1979	1-13	0-1	Yes	100	100	98	94	41	20	-	-	Test No. 10 was in brushy clearing atop pit, 30' S25°E of Test No. 3. Material is: 0'-1', overburden; 1'-13', uniform fine sand; bottom, fine sand.
	11	1979	0-12	-	Yes	100	100	100	98	36	19	-	-	Test No. 11 was in small clearing atop pit, 35' east of Test No. 5. Material is: 0'-12', silty fine sand; bottom, silty fine sand.
	12	1979	1-12	0-1	No	100	100	99	95	21	10	-	Sand	Test No. 12 was in small clearing, 100' southeast of the junction of two access roads. Material is: 0'-1', overburden; 1'-6', sand; 6'-7', pebbly layer; 7'-12', pebbly sand; bottom, sand.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	13	1979	1-12	0-1	Yes	100	100	90	75	17	8	-	Sand	Test No. 13 was in lowest floor at north end of pit, 90' north of Test No. 2. Material is: 0'-1', overburden; 1'-5', sand; 5'-9', pebbly sand; 9'-12', fine sand; bottom, fine sand.
22	1	1967	1.5-9	0-1.5	No	100	100	96.3	86.5	6.1	1.0	-	Sand	Owner: George Davis, Jr. Area is a field on terrace, south of Vermont Route 15. Access is across from Town Highway No. 51. Area was proposed for a school site as of 11-8-65. Test No. 1 was in field on upper terrace. Material is: 0'-1.5', overburden; 1.5'-9', sand and silty sand with a very narrow layer of fine gravel or pebbly sand; bottom, sand.
	2	1967	2-6	0-2	No	100	100	100	100	97.5	93.5	-	-	Test No. 2 was in field, 60' south of Test No. 1. Material is: 0'-2', overburden; 2'-6', silt; bottom, silt-clay.
	M-1	1967	2-8.5	0-2	No	100	100	95.8	87.5	8.8	7.0	-	Sand	Test No. M-1 was in field, 165' southwest of Test No. 2. Material is: 0'-2', overburden;

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														2'-5', sand; 5'-6', fine gravel or pebbly sand; 6'-8.5', sand; bottom, sand.
	M-2	1967	3-7.5	0-3	No	100	100	100	100	98.5	96.5	-	-	Test No. M-2 was in lower level of meadow, 285' southeast of Test No. M-1. Material is: 0'-3', overburden; 3'-7.5', silt; bottom, silt-clay.
	M-3	1967	2-8	0-2	No	100	100	98.8	93.8	45.0	21.0	-	-	Test No. M-3 was in lower level of meadow, 155' east of Test No. M-1. Material is: 0'-2', overburden; 2'-8', silty sand; bottom, silty sand.
	M-4	1967	3-10	0-3	No	100	100	91	82.4	3.3	1.0	-	-	Test No. M-4 was in lower level of meadow, 155' southwest of Test No. M-2. Material is: 0'-3', overburden; 3'-5', coarse sand; 5'-6', pebbly sand or fine gravel; 6'-10', coarse sand; bottom, sand.
	M-5	1967	3-8.5	0-3	No	100	100	94.8	89.6	11.7	3.8	-	Sand	Test No. M-5 was in west end of lower level of meadow, 305' southwest of Test No. M-4. Material is: 0'-3', overburden; 3'-5', sand; 5'-6', fine sand; 6'-8.5', sand; bottom, sand.

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JOHNSON GRANULAR DATA SHEET NO.46

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	M-6	1967	3-8	0-3	No	100	100	82.2	59	3	1.5	-	Gran. Borrow (Sand)	Test No. M-6 was in west end of lower level of meadow, 290' south of Test No. M-5. Material is: 0'-3', overburden; 3'-5', sand; 5'-6', silty sand; 6'-8', sand; bottom, sand.
	M-7	1967	3-6	0-3	No	100	100	100	99.3	92.5	88.5	-	-	Test No. M-7 was near center of terrace, 190' southeast of Test No. M-6. Material is: 0'-3', overburden; 3'-6', silt; bottom, silt-clay.
	M-8	1967	2-7	0-2	No	100	89.6	81.4	63.4	2.5	1.3	-	Gran. Borrow (Sand)	Test No. M-8 was in field, 200' northeast of Test No. M-7. Material is: 0'-2', overburden; 2'-7', sand with some gravelly sand layers; bottom, sand.
	M-9	1967	2.5-9	0-2.5	No	100	100	100	100	48	24	-	-	Test No. M-9 was in field, 190' south of Test No. M-8. Material is: 0'-2.5', overburden; 2.5'-9', silty sand; bottom, silty sand.
	M-10	1967	1.5-8	0-1.5	No	100	100	86.2	68.3	2.7	0.8	-	Sand	Test No. M-10 was in field, 200' east of Test No. M-9. Material is: 0'-1.5', overburden; 1.5'-8', pebbly sand and sand; bottom, sand

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
23	1	1978	0.5-19	0-0.5	Yes	100	100	100	99	9	7	-	Sand	Owner: Perry Blanchard. Former owner: Robert Venticinque. Area is a small pit with gently sloping faces which almost seem to be like a bull-dozed and smoothed slope of a pit. The material extends easterly in a wooded knoll. Area is 175' south of the east end of Town Highway No. 46. Access is 0.86 mile east of the junction of Town Highways No. 45 and 46. Small pit was inactive at time of sampling. Test No. 1 was on north face of wooded knoll. Material is: 0'-0.5', overburden; 0.5'-19', well-sorted and well-drained sand; bottom, sloughed sand.
	2	1978	0.5-11	0-0.5	Yes	100	100	100	99	8	6	-	Sand	Test No. 2 was on west face of wooded knoll, 30' southwest of Test No. 1. Material is: 0'-0.5', overburden; 0.5'-11', sand; bottom, sloughed sand. The top of Test No. 1 is higher than, but east of the top of Test No. 2.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
24	1	1978	2.5-11	0-2.5	Yes	100	100	93	81	8	5	-	Sand	Owner: Lawrence Rogers. Former owner Katherine Patch (owner's grandmother). Area is a large corn field with a pit on a wooded knoll in the southwest corner of the field. Area is at the south end of a private drive, 0.21 mile south of Town Highway No. 46. Access is 0.34 mile southeast of the junction of Town Highways No. 45 and 46. Corn fields are leased to McClure. Test No. 1 was in north face of pit. Material is: 0'-2.5', overburden; 2.5'-3', silty, hard-packed gravel; 3'-5', layer of silt; 5'-11', inclined beds of clean, coarse sand and coarse, pebbly sand; bottom, sloughed material.
	2-A	1978	3.5-11	0-3.5	Yes	79	69	51	36	8	6	23.9%	Gravel	Test No. 2-A was in south face of pit, 120' south of Test No. 1. Material is: 0'-3.5', overburden; 3.5'-11', gravel with a coating of silt-clay; (material caved very readily); bottom, gravel (Test No. 2-B).

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2-B	1979	11-14	-	Yes	88	77	61	48	19	11	22.1%	Gran. Borrow (Gravel)	Test No. 2-B was below Test No. 2-A. Material is: 11'-12', gravel with sub-rounded stones; 12'-14', gravel with a high silt-clay content and angular stones; bottom, same.
	3	1979	1-10	0-1	Yes	100	100	100	95	99	60	-	-	Test No. 3 was in northwest floor of pit, 90' N25°E of Test No. 2. Material is: 0'-1', overburden; 1'-7', fine silty sand; 7'-10', silty fine sand and some layers of silt-clay; bottom, silt-clay and silty fine sand; water was encountered at 9'.
	4	1979	2.5-10.5	0-2.5	No	100	92	56	39	9	7	20.0%	Gravel	Test No. 4 was in corn field, 170' S55°E of Test No. 3. Material is: 0'-2.5', overburden; 2.5'-6', gravel (a bit on the coarse side); 6'-7', bouldery gravel; 7'-10.5', fine gravel; bottom, fine gravel.
	5	1979	4-11.5	0-4	No	92	84	66	50	35	22	37.3%	-	Test No. 5 was in field, 225' S30°W of Test No. 4. Material is: 0'-4', overburden; 4'-6', bouldery gravel; 6'-11.5', silty gravel; bottom, silty gravel.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	6	1979	1-8	0-1	No	80	80	66	60	32	16	-	-	Test No. 6 was in field near brook, 140' S60°E of, and 6' below Test No. 5. Material is: 0'-1', overburden; 1'-3', silty fine sand; 3'-4', gravel; 4'-5.5', layer of boulders (8" to 24"); 5.5'-8', silty gravel; bottom, silty gravel. Water was encountered at 8'.
	7	1979	2-6	0-2	No	74	70	49	32	12	6	16.5%	Gravel	Test No. 7 was in northeast corner of field, 360' N50°E of Test No. 6. Material is: 0'-2', overburden; 2'-3.5', fine gravel with tabular stones; 3.5'-6', gravel and much water; bottom, gravel with tabular stones and much water.
	8	1979	2-7	0-2	No	86	82	63	47	13	7	15.9%	Gravel	Test No. 8 was in field near road and trailer, 255' N30°W of Test No. 7. Material is: 0'-2', overburden; 2'-7', gravel with tabular stones; bottom, gravel with tabular stones. Water was encountered at 5'.
	9	1979	4-8	0-4	No	79	69	47	37	20	10	21.3%	Gran. Borrow (Gravel)	Test No. 9 was in field, 130' S40°W of, and 6' above Test No. 8, and 160' N30°E of Test No. 4.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Material is: 0'-4', overburden (mostly sand--not sampled); 4'-8', gravel; bottom, sand. Water was encountered at 8'.
	10	1979	2-9	0-2	No	79	79	63	52	26	11	35.1%	Gran. Borrow (Gravel)	Test No. 10 was in field, 105' S30°W of Test No. 4, and 120' N30°E of Test No. 5. Material is: 0'-2', overburden; 2'-7' dirty gravel; 7'-9', a layer of boulders; bottom, silty fine sand. Most of the stones are from 3" to 8".
	11	1979	1.5-11	0-1.5	No	83	77	57	39	15	7	23.5%	Gravel	Test No. 11 was in field, 150' S80°E of Test No. 10 (at edge of drop-off). Material is: 0'-1.5', overburden; 1.5'-5', pebbly fine gravel; 5'-8', bouldery gravel with 8" to 24" stones; 8'-11', gravel; bottom, gravel. A water seep was encountered at 11'.
	12	1979	1.5-9	0-1.5	No	100	93	64	43	32	22	22.3%	-	Test No. 12 was in field near fenced-in stripped area, 170' S30°W of Test No. 1. Material is: 0'-1.5', overburden; 1.5'-4', fine gravel; 4'-7', bouldery coarse gravel with angular-to-tabular, 12" to 30" stones; 7'-9', gravel; bottom, moist gravel and silt-clay.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
25	1	1979	1.5-10	0-1.5	No	100	100	97	92	89	65	-	-	Owner: Lawrence Rogers. Area is an irregularly sloping field east of Town Highway No. 45. Access is 0.3 mile south of the junction of Town Highways No. 45 and 46. Test No. 1 was 155' south of the north end of field, and 120' east of Town Highway No. 45. Material is: 0'-1.5', overburden; 1.5'-10', silty fine sand; bottom, silty fine sand.
	2-A	1979	1.5-4.5	0-1.5	No	100	89	68	55	25	13	25.9%	Gran. Borrow (Gravel)	Test No. 2-A was in corn field, 240' S20°W of Test No. 1. Material is: 0'-1.5', overburden; 1.5'-4.5', silty gravel; bottom, sand (Test No. 2-B).
	2-B	1979	4.5-10	-	No	100	100	87	77	52	21	-	-	Test No. 2-B was below Test No. 2-A. Material is: 4.5'-10', sand or silty fine sand; bottom, silty fine sand.
26	1	1978	8-16	0-1	No	100	100	100	100	93.5	71.0	-	-	Owner: Katherine Patch. Area is a steep-faced bank adjacent to the southwest side of Town Highway No. 45.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Test No. 1 was on slope of bank. Material is: 0'-1', overburden; 1'-8', vertical face of silt-clay, not accessible; 8'-16', very hard-packed layers of silt and silt-clay; bottom, sloughed silt or silt-clay.
27	1	1978	3-15	0-3	Yes	100	100	89	81	48	35	-	-	Owner: Frederick Dezaine, Jr. Area is an inactive, nearly depleted, heavily overgrown, trash-strewn, sloughed pit adjacent to the west side of Town Highway No. 45. Access is 0.55 mile east of the junction of Town Highways No. 2 and 45. Test No. 1 was in northwest face of pit. Material is: 0'-3', overburden; 3'-8', silty fine sand; 8'-10', sand; 10'-13', pebbly sand or pebbly very fine gravel; 13'-15', sand; bottom, sloughed material and vegetation.
28	1	1978	1-40	0-1	Yes	100	91	82	74	17	10	-	Sand	Owner: Manchester Lumber Co. Area is an inactive, nearly depleted, steep-faced pit which

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JOHNSON GRANULAR DATA SHEET NO. 54

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														is adjacent to the northwest side of Town Highway No. 45, and northeast of the railroad tracks. The pit is used for log storage and lumber storage, and there is no extension. The access is 0.35 mile east of the junction of Town Highways No. 2 and 45. Test No. 1 was on the high face of steep bank west of the road. Material is: 0'-1', overburden; 1'-3', gravel; 3'-5', sand; 5'-7', pebbly fine gravel; 7'-8', layer of silt-clay; 8'-12', pebbly sand; 12'-15', sand; 15'-30', sand; 30'-32', pebbly sand; 32'-36', poorly sorted, hard-packed gravel with a silt-clay coating; 36'-40', poorly graded gravel consisting of mostly sand and cobbles (not much intermediate sizes); bottom, sand and sloughed material.
29	1	1978	3-21	0-1	Yes	100	100	98	90	18	10	-	Sand	Owner: Floyd Tinker, Jr. Area is a tiny, sloughed, overgrown, inactive, nearly depleted

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														pit just west of Town Highway No. 5. Access is 0.05 mile south of the junction of Town Highways No. 5 and 44. Test No. 1 was in west-southwest face of pit. Material looks good, but is so limited as to be uneconomical. Material is: 0'-1', overburden; 1'-3', pebbly sand which is too steep to reach; 3'-5', pebbly sand; 5'-7', sand; 7'-12', pebbly fine gravel; 12'-15', sand; 15'-17', layer of silt-clay or silty fine sand; 17'-21', sand with a bit of silty fine sand; bottom, sloughed material.
30	1-A	1978	1-11	0-1	Yes	94	91	69	45	21	11	25.5%	Gran. Borrow (Gravel)	Owner: Clifton Wescom. Area consists of two pits alongside Town Highway No. 82, and the extension into a large field south of the pits. Owner stated that the pits were limited and he wants the material for his own use and in the trailer park nearby. Pits are 0.4 mile south of the junction of Vermont Route 15 and Town Highway No. 82.

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JOHNSON GRANULAR DATA SHEET NO. 56

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Test No. 1-A was in the southwest face of lower level of pit north of Town Highway No. 82. Material is: 0'-1', overburden; 1'-7', hard-packed gravel; 7'-9', zone of pebbly gravel; 9'-11', cobbles and sand, (a gap-graded gravel); bottom, sloughed material.
	1-B	1979	11-16	-	Yes	100	100	86	69	16	10	-	Sand	Test No. 1-B was below Test No. 1-A. Material is: 11'-16', gravelly sand; bottom, sand.
	2	1978	0.5-10	0-0.5	Yes	100	100	98	92	11	5	-	Sand	Test No. 2 was in low east face of pit west of Town Highway No. 82. Material is: 0'-0.5', overburden; 0.5'-5', layers of sand, silty sand, and pebbly sand; 5'-6', pebbly coarse sand; 6'-10', sand; bottom, sloughed material. Deposit seems to have been a delta or shoal.
	3	1979	0.5-12	0-0.5	Yes	95	91	65	42	16	7	-	Gravel (Gradation only)	Test No. 3 was in southwest floor of main pit, 25' southeast of Test No. 1. Material is: 0'-0.5', overburden; 0.5'-12', gravel; bottom, gravel. A

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														large amount of the stones were over 4" and would need a crusher to use them. There was no wear test on this material due to mechanical failure of test machine.
	4	1979	1.5-12	0-1.5	Yes	81	78	60	41	42	39	-	-	Test No. 4 was in floor, 240' N70°E of Test No. 3. Material is: 0'-1.5', overburden; 1.5'-6', gravel; 6'-8', layer of 8" to 20"boulders; 8'-12', gravel; bottom, gravel. The gravel has a lot of silt-clay coating which might account for the high percent of fines.
	5	1979	0.5-12	0-0.5	Yes	100	100	100	100	16	9	-	Sand	Test No. 5 was in upper pit level near access road. Material is: 0'-0.5', overburden; 0.5'- 7', sand; 7'-11', silty fine sand; 11'-12', sand; bottom, sand.
	6	1979	0.5-7	0-0.5	No	100	94	82	68	22	20	27.8%	-	Test No. 6 was at edge of upper level of terrace in field west of access road. Material is: 0'-0.5', overburden; 0.5'-3.5', pebbly fine gravel; 3.5'-5', sand; 5'-7', gravelly sand or sandy gravel; bottom, silt-clay.

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	7	1979	0.5-11	0-0.5	Yes	100	100	85	65	8	5	23.0%	Sand	Test No. 7 was in floor of small pit, below and west of Town Highway No. 82. Material is: 0'-0.5', overburden; 0.5'-11', gravelly sand; bottom, gravel.
	8-A	1979	1-6	0-1	No	100	100	100	99	47	24	-	-	Test No. 8-A was near the south corner of large, uncut field southwest of pit. Material is: 0'-1', overburden; 1'-6', sand; bottom, gravel (Test No. 8-B).
	8-B	1979	6-12	-	No	100	96	72	55	14	8	-	Gravel Gradation only)	Test No. 8-B was below Test No. 8-A. Material is: 6'-12', quite uniform gravel; bottom, gravel. There is no wear test on this material due to mechanical failure of test machine.
	9-A	1979	1-7	0-1	No	100	100	100	100	36	27	-	-	Test No. 9-A was near fence in north corner of field, 380' N2°W of Test No. 8. Material is: 0'-1', overburden; 1'-7', sand; bottom, gravel (Test No. 9-B).
	9-B	1979	7-12	-	No	79	77	57	45	12	8	23.8%	Gravel	Test No. 9-B was below Test No. 9-A. Material is: 7'-12',

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														quite uniform river gravel; bottom, gravel.
	10	1979	1.5-12	0-1.5	No	94	94	86	76	8	4	19.4%	Gran. Borrow (Sand)	Test No. 10 was in east corner of field near pit, 450' S50°E of Test No. 9, and 360' N77°E of Test No. 8. Material is: 0'-1.5', overburden; 1.5'-4', sand; 4'-6', layers of sand and pebbly sand; 6'-8.5', pebbly fine gravel; 8.5'-10', pebbly sand; 10'-12', fine gravel; bottom, gravel.
	11-A	1979	2-6	0-2	No	100	100	100	100	14	4	-	Sand	Test No. 11-A was in field, 200' N75°W of Test No. 10. Material is: 0'-2', overburden; 2'-6', sand; bottom, gravel (Test No. 11-B).
	11-B	1979	6-12	-	No	83	71	54	44	11	6	21.0%	Gravel	Test No. 11-B was below Test No. 11-A. Material is: 6'-12', quite uniform river gravel; bottom, gravel.
	12	1979	5.5-11	0-5.5	No	100	95	71	53	18	13	16.0%	Gran. Borrow (Gravel)	Test No. 12 was near west end of narrow field between the river and Town Highway No. 82. Material is: 0'-5.5', overburden; 5.5'-6.5', pebbly sand;

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														6.5'-7', sand; 7'-11', gravel; bottom, gravel.
	13	1979	4-11	0-4	No	100	81	66	48	8	5	21.9%	Gravel	Test No. 13 was in field north of pit access road, 320' N65°E of Test No. 12. Material is: 0'-4', overburden; 4'-11', gravel; bottom, gravel.
	14	1979	0.5-8.5	0-0.5	No	100	100	100	100	82	53	-	-	Test No. 14 was in field southeast of Town Highway No. 82, 245' N55°E of Test No. 13. Material is: 0'-0.5', overburden; 0.5'-8.5', silty fine sand; bottom, gravel.
31	1	1979	1-9	0-1	No	90	87	59	43	17	7	18.0%	Gravel	Owner: Camille Lehouiller. Area is a large corn field with a tiny pit on the northeast edge of a terrace. Area is just south of Vermont Route 15, and east of Foote Brook. Access is 0.04 mile east of the junction of Vermont Route 15 and Town Highway No. 39. Test No. 1 was in northwest corner of large corn field. Material is: 0'-1', overburden; 1'-3', pebbly sand;

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TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														3'-4', pebbly gravel; 4'-5', sand; 5'-8', coarse gravel with 4" to 8" stones; 8'-9', fine gravel; bottom, wet, silty sand. Owner allowed only this one hole in northwest corner of field, but he said the whole field is gravel under a couple of feet of topsoil.
	2	1979	1-10	0-1	Yes	92	92	77	47	11	8	19.3%	Gravel	Test No. 2 was in floor of tiny pit, 555' west of Test No. 1. Material is: 0'-1', overburden; 1'-10', uniform fine gravel; bottom, fine gravel.
	3	1979	8-15	0-8	Yes	-	-	-	-	-	-	13.2%	Gravel (wear only)	Test No. 3 was in middle of face of pit near Foote Brook, 15' west of Test No. 2. Material is: 0'-8', silty fine sand or silt-clay in a vertical face which is inaccessible; 8'-15', gravel with a silt-clay coating; bottom, sloughed material. There was no gradation test run on this sample.

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AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION - GEOLOGY SUB-DIVISION

JOHNSON GRANULAR DATA SHEET NO. 62

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
32	1-A	1978	1-18	0-1	Yes	90	90	76	57	12	8	17.7%	Gravel	Owner: Peter Kullman. Former owner was Audibert. Area is a high, silty-faced pit on the northeast corner of a high meadow terrace. Area is 0.23 mile southeast of Vermont Route 15. Access is 0.46 mile northeast of the junction of Town Highway No. 43 and Vermont Route 15, and 0.15 mile southwest of the junction of Town Highway No. 4 and Vermont Route 15. As of June, 1979 pit was active because owner had sold his herd and was in business selling material to Nadeau's in Johnson for aggregate. Test No. 1-A was in steep north face of pit. Material is: 0'-1', overburden; 1'-18', quite good-looking gravel which caves very easily; bottom, sand.
	1-B	1978	18-30	-	Yes	100	92	76	59	11	6	18.3%	Gravel	Test No. 1-B was below Test No. 1-A. Material is: 18'-20', sand; 20'-24', gravel with a silt-clay coating; 24'-26',

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JOHNSON GRANULAR DATA SHEET NO.63

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														fine gravel with a silt-clay binder which makes the gravel very hard-packed and very hard to dig; 26'-28', gravel with a silt-clay binder; 28'-30', gravel and gravelly sand with silt-clay; bottom, sloughed material.
	2	1979	0-11	-	Yes	96	88	62	34	18	13	18.7%	Granular Borrow (Gravel)	Test No. 2 was in northwest face of lowest level in pit. Material is: 0'-11', gravel; bottom, gravel. There was quite a bit of water on the floor of lowest (active) level, and quite a bit of fines--but these might have washed in from elsewhere. There is a large reserve of materials, but they would have to be checked as development proceeded - to determine how uniform it is.
33	1-A	1978	1-17	0-1	Yes	100	93	87	76	21	10	-	Sand	Owner: Claude Lehouiller. Area is a narrow pit below the east edge of a corn field. Pit is 0.04 mile south of Vermont

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JOHNSON GRANULAR DATA SHEET NO. 64

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														Route 15. The access is 0.21 mile east of the junction of Town Highway No. 43 and Vermont Route 15. The access is good but steep over the railroad tracks.
	1-A	1979	0-17	-	Yes	100	100	93	81	25	16	-	-	Test No. 1-A was in northwest face of middle lobe of pit. Material is: 0'-1', overburden; 1'-7', pebbly fine gravel; 7'-8', sand; 8'-10', layer of silt-clay; 10'-12', sand; 12'-13', pebbly fine gravel 13'-16', sand; 16'-16.5', pebbly sand; 16.5'-17', sand; bottom, sloughed material.
	1-B	1979	17-22	-	Yes	100	100	93	81	25	16	-	-	Test No. 1-B was below Test No. 1-A. Material is: 17'-22', layers of sand, pebbly sand, and fine gravelly sand; bottom, sand. Face caved very readily.
	2	1978	1-8	0-1	Yes	100	100	100	100	69	23	-	-	Test No. 2 was in northwest face of north lobe of pit. Material is: 0'-1', over-burden; 1'-4', silty fine sand; 4'-8', very silty fine sand or silt-clay.

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MATERIALS & RESEARCH DIVISION - GEOLOGY SUB-DIVISION

JOHNSON GRANULAR DATA SHEET NO. 65

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	3	1979	0-12	-	Yes	100	100	100	97	53	24	-	-	Test No. 3 was in floor of pit, 15' southeast of Test No. 1-B.
	4	1979	2-12	0-2	No	100	100	100	96	30	15	-	Gran. Borrow (Sand)	Test No. 4 was near access road in trash area northwest of and above pit. Material is: 0'-2', overburden; 2'-4', sand; 4'-12', silty fine sand; bottom, moist silty fine sand or silt-clay.
34	1	1979	0.5-8	0-0.5	Yes	100	100	100	100	46	11	-	Gran. Borrow (Sand)	Owner: Claude Lehouiller. Area is pit north of Vermont Route 15, west of picnic area. Access is 0.33 mile west of the junction of Town Highway No. 43 and Vermont Route 15. Pit was opened 5/2/79 and worked by Palazzi for the Pleasant Valley Road project in Underhill. Material seems quite fine and silty (very dusty in the area). Test No. 1 was in east face of pit. Material is: 0'-0.5', overburden; 0.5'-8', silty fine sand; bottom, sloughed material. Very dusty.

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JOHNSON GRANULAR DATA SHEET NO. 66

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2	1979	0-11	-	Yes	100	100	100	97	61	42	-	-	Test No. 2 was in floor in north end of pit. Material is: 0'-7', fine silty sand; 7'-11', silty fine sand; bottom, silty fine sand. There are very thin layers of silt-clay through part of Test No. 2.
	3	1979	7-12	0-7	Yes	100	100	100	100	97	90	-	-	Test No. 3 was in floor, 150' S70°W of Test No. 2. Material is: 0'-7', not in place (strippings that were buried); 7'-12', fine sand or silty fine sand; bottom, silt-clay.
	4	1979	0-11	-	Yes	100	100	100	100	45	29	-	-	Test No. 4 was in floor in south end of pit, 100'S50°E of Test No. 3, and 125' S25°W of Test No. 2. Material is: 0'-5', sand; 5'-11', silty fine sand; bottom, silty fine sand.
35	1	1979	6-18	0-6	Yes	100	100	100	100	94	65	-	-	Owner: Claude Lehouiller. Area is a small, inactive, and nearly depleted pit along north edge of plowed field, 0.3 mile northwest of Vermont Route 15. The access is 0.30 mile west of the junction of Vermont Route 15 and Town Highway No. 71. Access

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JOHNSON GRANULAR DATA SHEET NO. 67

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														branches to left from the pit road to Map Identification No. 34. Owner was thinking of flattening the feature and using it to plant corn.
	2	1979	1-8	0-1	Yes	100	100	100	100	47	17	-	-	Test No. 1 was in northwest face of small pit. Material is: 0'-6', overburden; 6'-7', silty fine sand; 7'-8', sand; 8'-12', silty fine sand with layers of silt-clay; 12'-18', layers of silt or silt-clay with random angular rock fragments; bottom, silt-clay. Test No. 2 was in floor, 15' southeast of Test No. 1. Material is: 0'-1', overburden; 1'-8', silty fine sand; bottom, silt-clay.
36	1	1978	1.5-9	0-1.5	Yes	100	95	85	70	35	21	-	-	Owner: Claude Lehouiller. Former owner: Maurice Smith. Area is an inactive, small, nearly depleted pit between the south edge of field and the Lamoille River. Pit has several manure piles on the floor. Access is 1.88 miles west of the

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JOHNSON GRANULAR DATA SHEET NO. 68

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														junction of Town Highway No. 4 and Vermont Route 15. Pit is 0.19 mile south of Town Highway No. 4. The faces are sloughed and overgrown.
	1													Test No. 1 was in north face of pit. Material is: 0'-1.5', overburden; 1.5'-2', silty fine sand; 2'-3.5', layer of silt-clay; 3.5'-4.5', pebbly fine gravel; 4.5'-5', silty fine sand; 5'-6', sand; 6'-6.5', silty fine sand; 6.5'-8', gravel; 8'-9', layer of silt-clay; bottom, sloughed material.
	2	1978	1-8	0-1	Yes	100	96	83	66	11	7	-	Sand	Test No. 2 was in face near access road in southwest corner of pit, 155' S30°W of Test No. 1. Material is: 0'-1', overburden; 1'-2', silty fine sand; 2'-8', fine gravel and pebbly sand layers; bottom, fine gravel. Material caves so quickly that thicknesses were not determined.
	3	1979	0.5-10.5	0-0.5	Yes	100	100	100	100	98	46	-	-	Test No. 3 was in floor, 20' southwest of Test No. 1. Material is: 0'-0.5', overburden; 0.5'-10.5', silty fine sand; bottom, silt-clay.

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MATERIALS & RESEARCH DIVISION - GEOLOGY SUB-DIVISION

JOHNSON GRANULAR DATA SHEET NO. 69

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4	1979	0.5-3	0-0.5	No	100	80	68	54	43	42	-	-	Test No. 4 was in stripped area west of access road in field, 185' N60°E of Test No. 1. Material is: 0'-0.5', overburden; 0.5'-2.5', gravel; bottom, silt-clay.
37	1	1978	0-2	-	No	100	94	67	40	2	1	15.9%	Gravel	Owner: Victor Hunt. Area is a gravel bar in the Lamoille River. Bar is 0.18 mile north of the junction of access road and Vermont Route 15. Access is 1.36 miles west of the junction of Town Highway No. 43 and Vermont Route 15. Area was sampled after quite a lot of material had been removed; there is new gravel brought in every spring. Test No. 1 was in very low face near south (upstream) end of gravel bar. Material is: 0'-2', gravel; bottom, gravel and water. There are several smaller bars downstream which might be usable for gravel. According to owner, there might be about 2,000 to 3,000 cubic yards of gravel deposited each

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JOHNSON GRANULAR DATA SHEET NO. 70

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
														year. Sample was taken at low water.
38	1-A	1978	1-20	0-1	Yes	88	87	81	60	5	3	23.1%	Gravel	Owner: A Johnson Lumber Co. Area is a small, high-altitude pit on the edge of a steep, wooded, irregularly shaped knoll. Area is on the east side of the Long Trail, 0.41 mile southeast of the junction of Town Highway No. 43 and the Long Trail. Pit is 0.8 mile south of Vermont Route 15. Access is via a rough woods road which has many, hidden, abrupt, rough water-bars. Feature might have been a delta formed by a stream flowing roughly northwesterly. Extension would be into wooded knoll uphill and southeast of the pit. Test No. 1-A was in upper part of southeast face. Material is: 0'-1', overburden; 1'-2', gravel; 2'-4', fine gravel; 4'-8', sand; 8'-14', pebbly sand or pebbly fine gravel; 14'-20', pebbly sand; bottom, pebbly fine gravel

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MATERIALS & RESEARCH DIVISION - GEOLOGY SUB-DIVISION

JOHNSON GRANULAR DATA SHEET NO. 71

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	1-B	1978	20-28	-	Yes	100	93	81	71	9	4	22.9%	Sand	(Test No. 1-B). Test No. 1-B was below Test No. 1-A. Material is: 20'-24', pebbly fine gravel; 24'-26', sand with a few small cobbles; 26'-28', gap-graded gravel consisting of a sand and cobbles with no intermediate-sized particles; bottom, sloughed material.
	2	1979	1-7	0-1	Yes	100	100	81	75	51	24	-	-	Test No. 2 was in floor of small pit. Material is: 0'-1', overburden; 1'-7', silty fine sand; bottom, silt-clay, boulders, and water.

TABLE I
SUPPLEMENT

JOHNSON PROPERTY OWNERS - GRANULAR	Map Identification Number
Blanchard, Perry	23
Brimmer, Kenneth	13
Chauvin, Raymond	2
Collins, Chellis	21
Davis, Evelyn (Mrs.)	16
Davis, George H., Jr	22
Day, Bingham G	5, 6
Desmarais, George	20
Dezaine, Frederick, Jr	27
French, Edward	17
Gilbert, Raymond	9
Hoadley, Maurice	1
Hooper, Luther	15
Hunt, Victor	37
Inkel, Raymond	11
Johnson, A., Lumber Co	38
Johnson, Town of	4
Kullman, Peter	32
Lamphear, Roy	3
Lane, David	8
Lehouiller, Camille	31
Lehouiller, Claude	33,34,35,36
Locke, Merrill	7,10
Manchester Lumber Co	28
Morse, Erle	18
Nadeau, Albert	19
Patch, Charles, Jr	14
Patch, Katherine (Mrs.)	26
Rogers, Lawrence	24,25
Stearns, Leo (Mrs.)	12
Tinker, Floyd, Jr	29
Wescom, Clifton	30

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MATERIALS & RESEARCH DIVISION
ENGINEERING GEOLOGY SUB-DIVISION

JOHNSON ROCK DATA SHEET NO. 1

TABLE II

Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHTO T-3	Abrasion AASHTO T-96	Remarks
1	1-A	1978	Ultra-mafics	Yes	Chip	-	36.5%	Owner: Eastern Magnesia Talc Co. Area is the grout piles south of the actual mine. Area is on the east side of Town Highway No. 5. Access is 0.57 mile north of the junction of Town Highways No. 5 and 18. In 1978 the mine was producing 300 tons of waste per month. The samples were taken along base of grout pile southwest of mine head. The rock is somewhat slippery and might not be usable for construction or highway projects.
	1-B	1979	Ultra-mafics	Yes	Chip	-	40.1%	
2	1	1978	schist	No	Chip	-	53.1%	Owner: Mahlon Bidwell. Area is an exposure of the Hazens Notch schist on the southwest side of a low, thinly wooded ridge, northeast of Town Highway No. 5. Access is 0.3 mile northwest of the junction of Town Highways No. 5 and 45.

TABLE II
SUPPLEMENT

JOHNSON PROPERTY OWNERS - ROCK	Map Identification Number
Bidwell, Mahlon.....	2
Eastern Magnesia Talc Co.....	1