SURVEY OF HIGHWAY CONSTRUCTION MATERIALS
IN THE TOWN OF BRANDON, RUTLAND COUNTY, VERMONT

prepared by

Engineering Geology Section, Materials Division
Vermont Department of Highways

in cooperation with

United States Department of Commerce
Bureau of Public Roads

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Acknowledgments

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

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

History

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

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

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

Inclosures

Included in this folder are two surface-geology maps, one defining the location of tests conducted on bedrock sources, the other defining the location of tests conducted on granular materials. These maps are derived from 15-minute or 7½-minute quadrangles of the United States Geological Survey enlarged or reduced to 1:31250 or 1" = 2604'. Delineated on the Bedrock Map are the various rock types of the area. This information was obtained from numerous sources: Vermont Geological Survey Bulletins, Vermont State Geologist Reports, United States Geological Survey Bedrock Maps, and the Centennial Geological Map of Vermont, as well as other references.

The granular materials map depicts areas covered by various types of glacial deposits (outwash, moraines, kames, kame terraces, eskers, etc.) by which potential sources of gravel and sand may be recognized. This information was obtained primarily from a survey being conducted by Professor D.P. Stewart of Miami University, Oxford, Ohio, who has been mapping the glacial features of the State of Vermont during the summer months since

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

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

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

LOCATION

The town of Brandon is located in northern Rutland County in the west part of the State. It is bounded on the north by Leicester, on the west by Sudbury, and on the south by Pittsford. The towns of Chittenden and Goshen lie to the east.

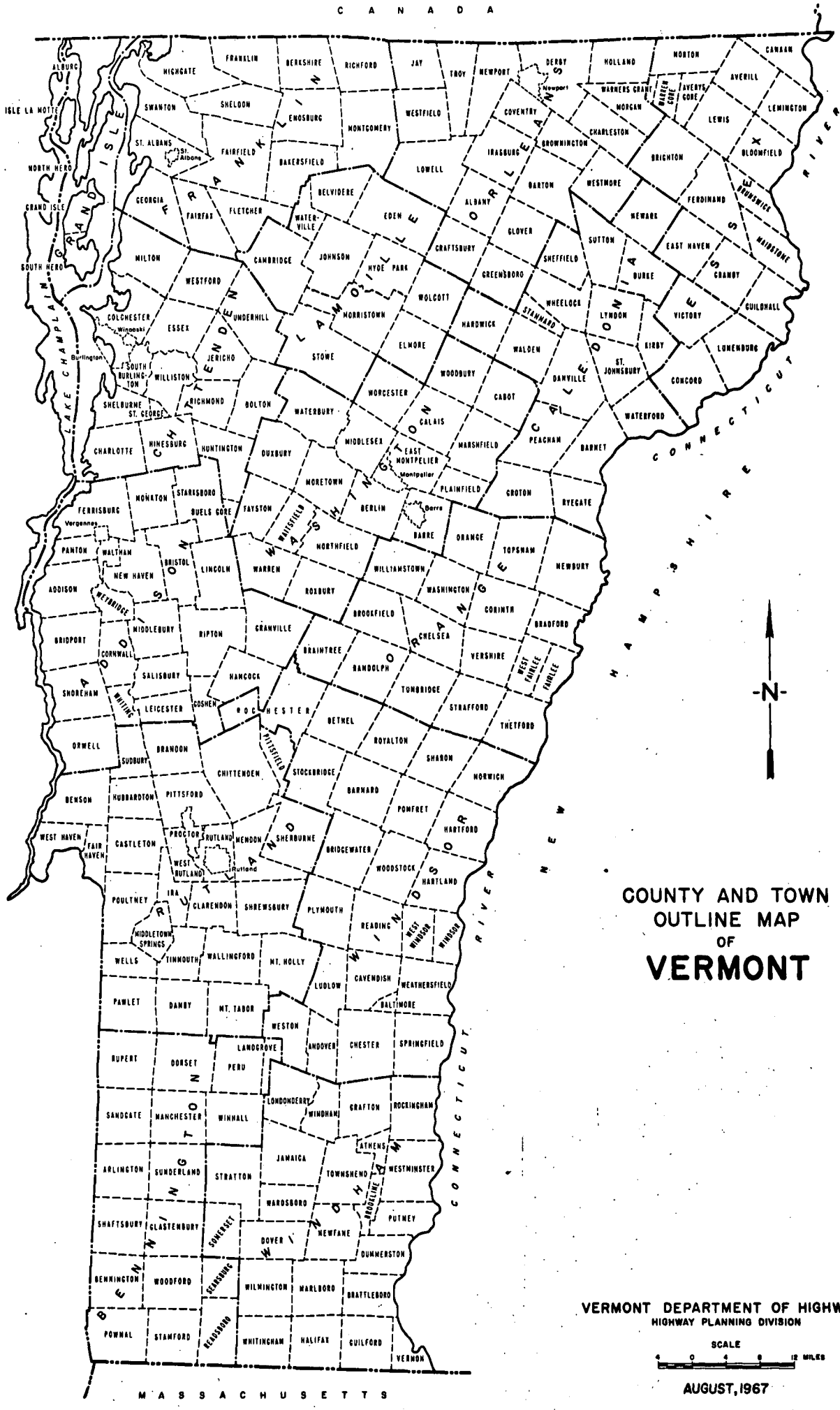
Brandon is mainly in the Green Mountains and Champlain Lowland Physiographic Regions. A small area in the southwest corner of the township has rugged terrain of moderate elevation that forms the northernmost hills of the Taconic Range. The Vermont Valley or Limestone Valley Physiographic Region is located between the Taconics and the Green Mountains and joins the Champlain Lowland just south of Brandon Village.

Low-lying, poorly drained lands flank Otter Creek on its northward course through the west side of Brandon. Generally the Vermont Railway follows the transition from the marsh land to higher terrain between Otter Creek and the Green Mountains. This terrain is characterized by north-south oriented rock ridges and low hills about which glacial sediments were deposited. Brandon Village is situated on a plain formed of lake sediments that were deposited in Glacial Lake Vermont, by the southwest-flowing Neshobe River.

Present drainage within the town ship is effected by Bresee Mill Brook and its tributaries from the Taconics; by the Neshobe River and its tributaries from the Green Mountains; and by a sluggish route available to a few small streams through Smalley Swamp, Jones Mill Pond, and Jones Brook, into Otter Creek. Sugar Hollow Brook carries the run-off of the Green Mountain front southward through a small valley into Pittsford where that brook eventually reaches Otter Creek.

Elevations on Otter Creek drop from about 360 feet in the south to about 350 feet near the Leicester Town Line. Average elevations of the glacial

terrain, between the Vermont Railway and the longitude of Forest Dale, range from about 400 feet to about 750 feet. The heights of the Green Mountains in Brandon range from about 1400 feet to about 2200 feet.



COUNTY AND TOWN OUTLINE MAP OF VERMONT

VERMONT DEPARTMENT OF HIGHWAYS
HIGHWAY PLANNING DIVISION

SCALE
4 0 4 8 12 MILES

AUGUST, 1967

SURVEY OF ROCK SOURCES

Procedure for Rock Survey

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

The office investigation is conducted primarily during the winter months and comprises the mapping and description of rock types as indicated in various reference sources. Many different sources of information are utilized, as indicated in the bibliography. These references differ considerably in dependability due to new developments and studies that have contributed to the obsolescense of a number of reports. In addition, the results of samples taken by other individuals are analyzed, and the location at which these samples were taken is mapped when possible. In other words, as complete a correlation as possible is made of all the information available concerning the geology of the area under consideration.

The field investigation is begun by making a cursory preliminary survey of the entire area. The information obtained in the preliminary survey, together with the information assimilated in the office investigation, is employed to determine the areas where testing and sampling will be concentrated. When a promising source has been determined by rock type, volume of material, accessibility, and adequate exposure and relief, chip samples are taken with a hammer across the strike or trend of the rock. The samples are submitted to the Material Testing Laboratory for abrasion testing both by the Deval Method (AASHO T-3) and the Los Angeles Method (AASHO T-96). It should be kept in mind that the samples taken by the chip method are often within the weathered zone of the outcrop and consequently may give a less satisfactory test result than fresh material deeper in the rock structure. When the material is uniform and acceptable abrasion tests result from the chip samples, the material source is included in this report as being satisfactory.

Discussion of Rock and Rock Sources

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

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

The rocks of the town of Brandon consist mainly of the limestones, marbles, dolomites, and quartzites of the Vermont Valley Sequence. The southwest corner of the town has rocks of the Taconic Sequence, which was not sampled because of the prevalence of slates and phyllites of the St. Catherine and Brezee formations. These rock types are unsuitable for crushed rock. The Green Mountain Sequence, mapped in the east part of town, is represented by the Pinnacle Formation, a graywacke. This was not sampled due to its inaccessibility.

Map Identification Numbers 1 and 2 appear to be the most promising sources of Sub-base of Crushed Rock, Item 204, in town. These are the north and south ends of Hawk Hill, owned by the Otter Valley Union High School. The rock is the Dunham Dolomite. There is plenty of rock with good relief and sufficient area for a crushing operation. Map Identification Numbers 3 and 4 are

adjacent to the proposed location of the Arterial Project Line; No. 3 is in the Dunham Dolomite, and No. 4 is in the Winooski Dolomite. Map Identification No. 5, in the Shelburne Formation and Clarendon Springs Dolomite, belongs to Donald Howland. It would be a good source of crushed rock, with plenty of relief and a large outcrop area. Map Identification No. 6, owned by B. L. Flanders, has limestone and dolomite that breaks somewhat sharp or angular. From that standpoint this area is the least desirable of the six areas sampled.

There are several locations which were not sampled. The most promising of these was discovered late in the year and was not sampled because of the snow cover. It is about 1,500 feet east of Town Highway No. 15 on property owned by Henry Harris. The rock, mapped as the Winooski Dolomite, forms a ridge with 20'-30' relief. It extends for over 0.25 mile north on Harris's land and is located close to the proposed Arterial Project.

Another area which was not sampled, and which might yield some material suitable for Sub-base of Crushed Rock, Item 204, is a series of heavily wooded hills which trend north south. The hills are located east of Town Highway No. 31, south of Town Highway No. 34, and just west of Smalley Swamp. The rock was not exposed enough to sample, but due to the relief and the extent of the hills, this area should not be overlooked as a source. The proposed location of the Arterial Project crosses the hills, and its construction perhaps would make possible a better evaluation of the rock. This area is mapped as being near the contact between the Monkton Formation, a quartzite, and the Winooski Formation, a siliceous dolomite. Both formations are good crushed rock sources.

Two small, water-filled quarries were not sampled because they are too close to U. S. Route 7. They are both on the east side of the highway. One is north of Brandon Village, 0.30 mile north of Vermont Route 73. The one

south of the village is the High Street Quarry, formerly owned by the Vermont Marble Company, located 0.30 mile north of Town Highway No. 43.

The Vermont Marble Company retains the mineral rights to the old Granito Quarry, which is southwest of Town Highway No. 28. There is a large supply of rock, mapped as the Dunham Dolomite, but the quality would be adversely affected by zones of thin-bedded, highly fractured rock which yields thin, splintery pieces.

A possible source of material, close to the proposed location of the Arterial Project Line and north of Town Highway No. 17, is Lion Hill. It would be difficult to develop a quarry site on this hill, but the area should not be ruled out as a source. The Winooski Dolomite, Monkton Quartzite, and the Dunham Dolomite are mapped as outcropping on Lion Hill. The greatest relief occurs on the east side of the hill northwest of Burnell Pond.

SURVEY OF SAND AND GRAVEL SOURCES

Procedure for Sand and Gravel Survey

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

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

The field investigation is begun by making a cursory preliminary survey of the entire town. All pits and other areas which show physiographic features that give evidence of glacial or fluvial deposition are noted. These locations are later investigated by obtaining samples of pit faces and other exposed materials. Tests pits, dug with a backhoe to a depth of approximately 11 feet, are also sampled. The samples are submitted to the Materials Testing Laboratory where they are tested for gradation and stone abrasion, the latter by the Deval Method (AASHO T-4).

Discussion of Sand and Gravel Sources

Deposits of granular material in the town of Brandon consists of very fine to coarse sands of glacial lake and possible outwash origin; sands and gravels of lake shore features; and cobbly to fine gravels and minor sands deposited in kame moraines, kame terraces, an outwash terrace, and an esker. There is a small area near the southwest corner of Brandon that D. P. Stewart has mapped as a delta. Gravel acceptable for Item 201, Sub-base of Gravel, was sampled in Map Identification Numbers 78 and 79, and represents this feature.

D. P. Stewart has mapped and designated numerous lake shore features as beach gravels. These features were probably associated with the different levels of Glacial Lake Vermont. With three exceptions, the beach gravels were generally found to be neither granular nor extensive. Map Identification Numbers 29 and 31, on the west side of State Aid Highway No. 8, in the east-central part of town, are in an extensive beach gravel deposit. Number 29 is mainly a source of Item 202, Sub-base of Sand; Number 31 is a wooded area with a small pit where gravel acceptable for Item 201, Sub-base of Gravel was sampled. Sand and gravel acceptable for highway use was also sampled in Map Identification Numbers 18 through 22. Number 22 is a wooded hill, and would be difficult to develop. The other areas have limited amounts of granular material. Another beach deposit is exposed in Map Identification No. 69, a large pit north of Brandon Village on the east side of U. S. Route 7. Here a small amount of gravel and a large quantity of sand acceptable for highway use would be available.

The major sources of sand for Item 202, Sub-base of Sand, that represent deposition in Glacial Lake Vermont, are Map Identification Numbers 5 and 6 (two large pits), 13, 28, 35, and 36. The last is a wooded area containing a small pit. Map Identification Numbers 11 and 12 might be sources of lesser

amounts of sand, and with Number 13, are near the proposed location of the Arterial Project. Map Identification No. 8 is a large flat meadow in which one sample was taken of acceptable sand. The meadow, however, would not be available as a source.

Ice contact deposits, mapped by D. P. Stewart as a kame moraine, are by far the most important source of gravel and sand in Brandon. Map Identification Numbers 40 through 43, 45 through 49, and Number 55 represent these deposits, and are located in the north part of town between Vermont Route 53 and Town Highway No. 18. This large granular area is wooded and has rolling topography. Numerous pits expose the material which ranges from bouldery and fine gravels in Map Identification No. 41 to fine gravels and fine sands in Map Identification Numbers 45 and 46.

Outwash material, apparently sand, is mapped in contact with the kame moraine in the vicinities of Map Identification Numbers 45, 46, 47 and 55. Two test locations in the above vicinity showed sand acceptable for Item 202, Sub-base of Sand and silt unacceptable for Item 105, Granular Borrow, from north to south. Other mapped outwash was sampled in Map Identification Numbers 34 and 37 where gravel acceptable for Item 201, Sub-base of Gravel was found.

Possible kame terraces were sampled in Map Identification Numbers 72, 73, and 74, which are in the once huge Railroad Pit where immense quantities of gravel were removed; and Numbers 80, 81, and 82, located in the southwest corner of Brandon on the lower northwest slopes of the Taconic Range. There are only small amounts of gravel left in the old Railroad Pit; the other areas are too small to be important sources of granular material.

An esker, exposed on the west side of U. S. Route 7, north of Brandon

Village, has been utilized as a granular source in years past. Map Identification Numbers 65 and 67 have very little gravel remaining. Map Identification No. 64, farther north on the esker, is a pasture with good potential as a gravel source.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF BRANDON

VERMONT VALLEY SEQUENCE

Beldens Member (of the Chipman Formation) - Interbedded buff to brown heavily scored dolomite and white to blue-gray marble and limestone.

Weybridge Member (of the Chipman Formation) - Gray limestone with thin interbeds of sandy limestone ½ to 2 inches thick and 1 to 4 inches apart.

Burchards Member (of the Chipman Formation) - Blue-gray limestone with irregular spots of light, buff dolomite that give weathered surface a mottled appearance.

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

Cutting Dolomite - Typically, a massive, gray-weathered, non-descript dolomite with a finely laminated calcareous sandstone at the base.

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

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

Danby Formation - Comprised of white vitreous or glassy quartzite beds, often cross-laminated, interbedded with gray dolomite. White quartzite beds, more than a foot thick, separated by 10 to 12 feet of dolomite in eastern areas, increase westward to continuous sections of white to pink weathered, massively bedded Potsdam quartzite, west of Orwell thrust.

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

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

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

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

Moosalamoo Phyllite - Gray to black sericite-quartz phyllite; sericite-quartz-chlorite phyllite occurs locally.

Forestdale Marble - Buff- to rusty-weathered white, buff and pink and white mottled dolomite containing local interbeds of dolomitic sandstone, gray-green phyllitic quartzite, and cross-bedded sandy dolomite.

GREEN MOUNTAIN SEQUENCE

Pinnacle Formation - Schistose graywacke, gray to buff, commonly striped, quartz-albite-sericite-biotite-chlorite rock predominates; quartz-cobble and boulder conglomerate is common, chiefly near base.

TACONIC SEQUENCE

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

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

GLOSSARY OF SELECTED GEOLOGIC TERMS

Alluvial - Pertaining to material carried or deposited by running water.

Beach - As used here the term applies to the material of shoreline deposits which may consist of any grain size and gradation of sediment. The beach often consists of well-sorted sand and pebbles.

Clacareous - Pertaining to or containing calcium carbonate.

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

Delta - A predominantly alluvial deposit built by a stream entering the sea or other body of water. Usually it has the form of the Greek letter delta.

Dolomite - A rock consisting predominantly of the mineral calcium magnesium carbonate (dolomite), containing carbon dioxide 47.7%, lime 30.4%, and magnesia 21.9%.

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

Gneiss - Originally meaning a more or less banded metamorphic rock with the mineral composition of granite. The term now designates a foliated metamorphic rock with no specific composition implied, but having layers that are mineralogically unlike and consisting of particles visible to the eye. Usually gneiss displays an alternation of granular minerals and schistose minerals with the rock tending to split along the schistose bands.

Graywacke - An old rock name loosely applied. Most writers now apply it to a dark-colored, hard sandstone consisting of angular grains of quartz, feldspar, and rock fragments embedded in a fine, compact matrix composed of micas, clay minerals, and chlorite.

Ice Contact - Refers to sediments which have accumulated in contact with stagnant or wasting glacial ice. They assume the varied topographic forms expressed by eskers, kames, and kame terraces.

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

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

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

Limestone - A bedded sedimentary rock consisting chiefly of calcium carbonate. The most important and widely distributed of the carbonate rocks.

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

Metamorphic Rocks - Rocks that owe their distinctive characteristics to the transformation of preexisting rocks through intense heat or pressure or both.

Outwash - Stratified sands and gravels that are stream-built beyond the glacier - deposited by meltwater streams issuing from the face of the glacial ice.

Phyllite - A fine-grained, foliated metamorphic rock intermediate between the mica schists and slates into which it may grade. The foliation is made possible by the development of a large amount of potash mica, sericite, which also gives the rock a distinctive silvery appearance.

Physiographic - Pertaining to the physical divisions of the earth.

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

Schist - A crystalline rock with a secondary foliation of lamination based on parallelism of platy or needle-like grains. The name refers to the tendency to split along the foliation.

Siliceous - Containing or pertaining to silica (silicon dioxide, SiO_2).

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

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

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PARTIAL SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MATERIALS

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

Item 105, Granular Borrow

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

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

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

Item 201, Sub-base of Gravel

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

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

"The percent of wear shall be not more than twenty-five (25) when tested by laboratory methods using Method T-4 or more than forty (40) when tested by AASHO Method T-96.

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

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

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

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

Item 202, Sub-base of Sand

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

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

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

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

Item 204, Sub-base of Crushed Rock

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

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

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

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

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

Item 205, Sub-base of Crushed Gravel

"Article 205.02 - Materials.

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

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

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

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

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

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

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

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

TABLE I

BRANDON GRANULAR DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
1	1	1968	1-6.5	0-1	No	100	100	98.5	98.0	---	---	---	---	Owner: Otter Valley Union High School. Area is pasture southwest of high school athletic field. D. P. Stewart has mapped rounded terraces standing above south-flowing streams as lake sands or sediments. Stream and tributary gully profiles are broad and rounded. Test #1 was dug in edge of pines about 460' southwest of baseball field. The material is clay, A-7-6, having 97.5% passing the #200 mesh sieve. The ground is lumpy and cracked in places. The sediments probably represent deposition in deep or quiet water of a glacial lake.
2	1	1968	1-8	0-1	No	92.9	92.9	75.5	16.6	6.0 4.5*	1	---	Gran. Borrow (Sand)	Owner: Herman Dodge. This area is hillside pasture above the east side of U. S. Route 7, northeast of the high school. Small rounded spurs or knolls extend out of general slope of hillside. Slope is steeper below knolls than above them, and both upper and lower slopes are bouldery. Test #1 was a hand sample taken from the slope of a knoll just south of an old fence, 160' up slope from a narrow patch of woods. Material in

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 2

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														the four or five shovel holes was pebbly to very fine sand with an occasional very small cobble. An 8-foot vertical section was sampled. An additional sieve analysis follows: Passing #10 - 64.7% Passing #40 - 44.4% Passing #80 - 29.9% Passing #200 - 14.5%
	2	1968	1-4	0-1	No	100	100	55.9	32.0	13.0	1	---	---	Test #2 was dug by backhoe 160' northeast of Test #1 at a point where woods road enters open pasture. This test is 20'-30' above elevation of #1. The material is silty and stony, going at 4' to silt and small stones and a boulder. This test is probably above the thin or narrow zone of water-worked material in the vicinity of Test #1.
	3	1968	N	O	T	S	A	M	P	L	E	D		Test #3 was dug 250' south of Test #1 on southernmost spur or knoll. The material to 5' looked like till, and was not sampled. Pasture seems to be only patches of somewhat sorted material on a till surface. An old pit is located about 300'-450'down to the west, and the surface is very stony, including boulders and cobbles. A spring in the pit area precluded sampling.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 3

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
3	1A	1968	1-5.5	0-1	No	N O T S A M P L E D								Owner: Herman Dodge. This area is rolling to flat pasture into which drainage gullies have been extended from the south. The pasture is located on the west side of U. S. Route 7, north of the high school. It slopes gently south. D. P. Stewart has mapped it within his lake sands or sediments. Test #1 was dug on the north side of the pasture about 250' west of the highway. The top 5.5', consisting of 1' of overburden and 4.5' of silty clay to silty sand was not sampled.
	1B	1968	5.5-11	---	No	100	100	100	10.0	1.5*	1-	---	Sand	Test #1B was taken from very fine sand at 5.5'-8.5', and fine sand at 8.5'-11'. The test hole bottomed in fine sand. An additional sieve analysis follows: Passing #10 - 93.9% Passing #40 - 81.8% Passing #80 - 32.6% Passing #200 - 10.5%
	2	1968	1-10	0-1	No	100	100	100	20.0	5.0*	1	---	Gran. Borrow (Sand)	Test #2 was dug 540' west of Test #1 between two gullies. The top 5.5' resembles Test #1A. Log of Test: 0-1', overburden; 1'-5.5', looks like silt to clay; 5.5'-9', sand; 9'-10', looks like silt.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 4

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	3	1968	N	O	T	S	A	M	P	L	E		D	Overall the material is a coarse sand, but with excess fines for Sub-base of Sand, Item 202. An additional sieve analysis follows: Passing #10 - 94.5% Passing #40 - 77.8% Passing #80 - 41.1% Passing #200 - 19.0% Test #3 dug 285' southwest of Test #2 west of broad, rounded gully. The hole was dug to 5' and no sample was taken. Material was clay. Area could be source of Granular Borrow, Item 105 in vicinity of Test #2. However, there would probably be too much stripping required in most of the pasture.
4	1	1968	1-6	0-1	Yes	90.4	82.7	63.6	14.0	2.0	1½	---	Gran. Borrow (Grav.)	Owner: Ryan Auto Franchise. This is small, shallow diggings behind the Chevrolet dealership. Material from here has been used only for fill. Flat lacustrine deposits lie west of the diggings; a bouldery slope extends up to the east. The feature in which the diggings are located extends both south and north along the change in slope between the valley slope and the valley

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 5

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														bottom. Herman Dodge's old pit area below Map Ident. No. 2 is in the same feature. The deposits may be wave-worked material, or may be earlier ice-contact deposits, laid down at the edge of the glacial ice. A six-foot vertical section was sampled with hand shovel. The material is a gravelly sand overlying silt or clay. Only a few stones exceed 1½". The sample had too few stones retained on the #4 screen for Item 201. The deposit appears to have a maximum width of about 40' and is no more than 6'-8' deep. Its extension would be north onto adjacent property.
5	1A	1968	0-11	---	Yes	100	100	100	11.0	1.3*	1	---	Sand	Owner: Vermont Marble Company. Area is that part of huge pit which is south of the access road. The pit is located west of U. S. Route 7 and its junction with State Aid Highway No. 8. The northeast lobe of this area is 60' from the highway. The pit's east, southeast, and southwest extensions are wooded. Its west extension is limited by rock at the foot of Hawk Hill. The pit's south extension has brush and small trees, and abuts an

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 6

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				adjoining property 250' south of the face. The distances from the east face to U. S. Route 7 vary from 200' to 300'. An antique shop limits eastward extension of pit's south lobe to about 140'. Most of pit faces have some slough, and some small trees and brush grow about the pit. This part of the owner's holdings is inactive. Test #1 was sampled on the south face of narrow, northeast lobe of the pit. It was taken 135' from its east end, or about 195' from the highway. An area along the face 175' east-west by 40'-45' north-south has been stripped. Some cobbles and boulders show through the slough in places on the face. Test #1A in top 11' was of coarse sand from 1'-2', very fine sand with an occasional cobble from 2'-5', and fine sand from 5'-11'. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 75.4% Passing #80 - 17.5% Passing #200 - 3.2% Test #1B was very fine sand from 11'-18'. The bottom 5' of the 23-foot face was slough.
	1B	1968	11-18	---	Yes	100	100	100	29.0	6.0*	1	---	Gran. Borrow (Sand)	

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 7

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														An additional sieve analysis follows: Passing #10 - 99.4% Passing #40 - 80.0% Passing #80 - 40.0% Passing #200 - 10.3%
	2A	1968	0-10	---	Yes	100	100	100	4.0	1.0*	1	---	Sand	Test #2A was sampled on the east face about 200' south of Test #1. The material is a uniform fine sand, underlain by somewhat finer sand to 16'.
	2B	1968	10-16	---	Yes	100	100	100	14.0	1.3*	1	---	Sand	Test #2B was from 10'-16' and bottomed in silt. An additional sieve analysis for Test #2A follows: Passing #10 - 100.0% Passing #40 - 45.0% Passing #80 - 6.5% Passing #200 - 1.5% An additional sieve analysis for Test #2B follows: Passing #10 - 100.0% Passing #40 - 80.8% Passing #80 - 22.7% Passing #200 - 2.9% An east extension of the pit from Test #2A-2B is wooded for about 150'.
	3	1968	1-9.5	0-1	Yes	100	100	100	7.0	1.0	1	---	Sand	Test #3 was sampled on the 13-foot face in the extreme south end of the pit. The extension south of this test has brush and scattered small trees, and is limited by an adjoining property about 250' south of the face. The material down

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 8

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				to 3.5' is a fine sand with occasional small pebbles. From 3.5'-9.5' is a fine sand. The bottom 3.5' of the face is slough. The sand is sharp. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 58.3% Passing #80 - 14.6% Passing #200 - 2.9%
	4	1968	0.5-4	0-0.5	Yes	100	100	100	14.0	2.0	1	---	Sand	Test #4 was sampled on east face at extreme southeast corner of pit. Top 4' or so is fine to coarse sand over clay, brown and plastic. Possibly eastward extension in south part of pit was discontinued because of the clay. An additional sieve analysis follows: Passing #10 - 95.9% Passing #40 - 69.2% Passing #80 - 27.9% Passing #200 - 7.0%
	5A	1968	0.5-10.5	0-0.5	Yes	100	98.7	98.7	7.9	2.5*	1	---	Sand	Test #5A was dug on top of north face just south of point where pit access road turns north into northern part of pit. The material is a fine sand with a silt seam near the top of the face. An additional sieve analysis follows: Passing #10 - 99.1% Passing #40 - 57.5%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 9

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Passing #80 - 12.8% Passing #200 - 3.7%
	5B	1968	10-20	---	Yes	100	100	100	5.0	1.0	1-	---	Sand	Test #5B was dug on lower north face. A gray, clean very fine sand. The bottom few feet of the face has reddish tan bands of fine sand. This test and Test #5A represent the material in the north part of a stripped area about 225' southeast-northwest x about 175' northeast-southwest. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 64.0% Passing #80 - 11.3% Passing #200 - 1.2%
	6A	1968	0.5-11	0-0.5	Yes	100	100	100	8.0	1.8*	1	---	Sand	Test #6A was a hand sample taken at the south end of a lobe at the far west side of the pit. The face is gullied and sloughed. Atop the south end has been stripped for about 60'. The west face of this lobe is grown to trees and its extension is limited within a short distance by bedrock. The material sampled varies from very fine or silty sand in the top 3' to a partially cemented seam of silty to coarse sand over a fine sand from 3'-11'. An additional sieve analysis follows:

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 10

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Passing #10 - 98.4% Passing #40 - 60.8% Passing #80 - 18.4% Passing #200 - 4.0%
	6B	1968	11-20	---	Yes	100	100	100	5.0	0.8*	1	---	Sand	Test #6B from 11'-20' on the 24-foot face was of beds of uniform gray medium sand. The bottom of the face is sloughed material concealing the sand. An additional sieve analysis follows: Passing #10 - 99.5% Passing #40 - 49.5% Passing #80 - 8.8% Passing #200 - 1.4%
	7A	1968	0.5-10	0-0.5	Yes	100	100	100	13.0	4.0*	1	---	Sand	Test #7A was dug on east face of material that remains between the far west lobe and the road into the north pit. The area is about 200' north-south x 50' east-west. A fine sand was encountered with a thin silt seam at 3.5'.
	7B	1968	10-21	---	Yes	100	100	100	9.0	1.3*	1	---	Sand	Test #7B from 10'-21' on the 27-foot face was fine sand. There is much slough on middle and lower face and bottom 6' had excess slough to dig through. Test bottomed in fine sand.
	8	1968	5-11	0-5	No	100	100	100	25.0	5.0*	1	---	Gran. Borrow (Sand)	Test #8 was dug in s outheast corner of area 300' southeast of pit and 90' north of property line. A dark brown silt or clay in the top 5' overlies at least 6' of fine sand with a

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 11

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														few silty sand seams. An additional sieve analysis follows: Passing #10 - 99.5% Passing #40 - 83.8% Passing #80 - 53.3% Passing #200 - 21.8% An access from U. S. Route 7 into the south part of the pit could be built through the brush and piney woods near Test #8.
	9	1968	1-4.5	0-1	No	100	100	100	17.0	1.0*	1	---	Sand	Test #9 was dug 230' west-southwest of Test #8, about 165' south of pit in brushy clearing. There is only about 3.5' of fine sand over a silt or clay. Test #8 and #9 indicate that a southeast to south extension of the pit would encounter unsatisfactory material both as overburden and as bottom material. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 80.8% Passing #80 - 29.8% Passing #200 - 3.2%
	10	1968	1-10	0-1	No	100	100	100	18.0	2.0*	1	---	Sand	Test #10 dug 265' west-northwest of Test #9 in the clearing 150' southwest of the pit. Log of Test: 0-1', overburden; 1'-3', fine sand; 3'-4.5',

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 12

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														silty seam; 4.5'-10', fine sand. This test represents southwest extension of south part of pit, and it appears that an extension in this direction is more promising than it is to the south or southeast. An additional sieve analysis follows: Passing #10 - 93.4% Passing #40 - 70.7% Passing #80 - 28.1% Passing #200 - 4.9%
	11	1968	1-10.5	0-1	No	100	100	100	8.0	1.5*	1	---	Sand	Test #11 was dug in a small clearing 220' northwest of Test #10. The test is 90' southwest of the low face that runs along the stripped area sampled in Tests #5A and #5B. The level of that stripped area is 6'-8' below Test #11. The material in Test #11 is a clean, sharp fine sand, uniform except for a silty sand seam at 6.5'. An additional sieve analysis follows: Passing #10 - 99.2% Passing #40 - 53.0% Passing #80 - 13.0% Passing #200 - 2.5%
	12	1968	0.5-10.5	0-0.5	No	100	100	100	6.0	1.0*	1	---	Sand	Test #12 was dug at the edge of the stripped area, 125' southeast of Test #6A. From 0.5'-3.5' is a reddish tan fine sand over a gray tan fine

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 13

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														sand. The material is uniform except for 1 or 2 6-inch silty sand layers and 1 or 2 pebbles. The sand has a gentle east dip. There is a fine sand bottom. The area represented by Tests #6A and #12 is about 300' east-west x 60' north-south. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 58.4% Passing #80 - 11.2% Passing #200 - 2.7%
	13	1968	1-10	0-1	Yes	100	100	100	95.5	---	---	---	---	Test #13 was dug in stripped area between Tests #5 and #11, and is 100' south of Test #5A. Log of Test: 0-1', overburden; 1'-2', silty sand; 2'-3', fine sand; 3'-10', silt. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 98.0% Passing #200 - 93.5% The material is an A-4 silt.
	14	1968	1-10	0-1	No	100	100	100	20.0	6.0*	1	---	Gran. Borrow (Sand)	Test #14 was dug at west edge of clearing, about 140' east of the pit, and about 200' southeast of Test #1A. Log of Test: 0-1', overburden; 1'-6', sand; 6'-8', silt; 8'-10', sand. An occasional cobble was seen near the bottom.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 14

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														The eastward extension of the pit between Tests #1 and #2 is represented by this test. A narrow patch of woods would have to be cleared to extend the pit. An additional sieve analysis follows: Passing #10 - 99.6% Passing #40 - 88.9% Passing #80 - 38.3% Passing #200 - 16.5% This part of the huge sand pit was inactive at the time sampled. It is not known if the owner would make the sand available for highway use.
6	1A	1968	0.5-15	0-0.5	Yes	100	100	99.5	31.8	12.5 12.4*	1	---	---	Owner: Vermont Marble Company. Area is north to northwest of Map Ident. No. 5. It lies north of the access road into the pit, and is about 0.2 mile west of U. S. Route 7. This pit was active at the time sampled. Test #1A was a hand sample of the top 15' of the 48-foot west face taken at a point about 300' north-northeast of Test #6 of Map Ident. No. 5. The top 5' is fine to coarse sands interbedded with silt and clay seams, all dipping to the northeast. An additional sieve analysis follows:

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 15

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	1B	1968	15-36	---	Yes	100	100	100	7.0	1.8*	1	---	Sand	Passing #10 - 94.4% Passing #40 - 64.9% Passing #80 - 38.0% Passing #200 - 18.7% Test #1B was sampled from beds of fine to coarse sand and sand with occasional pebbles between 15' and 36'. The bottom 12' of the face had excess slough to dig through. An additional sieve analysis follows: Passing #10 - 97.6% Passing #40 - 45.4% Passing #80 - 10.8% Passing #200 - 2.7% About 120' of area has been stripped to the west of the face. There is very little distance remaining to the base of the ledge in Hawk Hill. The material on the west face appears to be of ice contact origin. (The beds are slumped and faulted in many places.) D. P. Stewart has mapped the deposit as lake sands or sediments, and this may be the case with the upper beds and the sands farther to the east.
	2	1968	3-23	0-3	Yes	100	76.6	65.4	2.6	1.3 0.9*	1	---	Gran. Borrow (Sand)	Test #2 was sampled on the 29-foot face in the northwest corner of the pit. From 3'-10' is coarse sand; 10'-23' is pebbly and gravelly sand. Sample taken was a composite

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 16

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														of face as it would most likely be worked, and it had excess stones for Item 202, Sub-base of Sand. The extent of the gravelly beds is concealed by slough to the southwest and east. An additional sieve analysis follows: Passing #10 - 56.9% Passing #40 - 19.7% Passing #80 - 4.7% Passing #200 - 1.3% The gravelly material also indicates an ice contact origin for the deposit on its west side, next to the hill.
	3A	1968	13-23	---	Yes	90.1	75.4	56.1	5.0	1.5	1	15.3%	Gravel	Test #3A was a hand sample from pebble sand beds and gravelly sand or gravel beds. Without the top 3'-13', the material has enough stones for Item 201, Sub-base of Gravel. The material on the top 13' of the face might meet Item 202, Sub-base of Sand requirements.

	3B	1968	19-29	---	Yes	75.1	66.9	50.2	3.0	1.0	1½	16.9%	Gravel	Test #3B was exposed by the backhoe on the bottom 10' of the face. Beds of fine gravel and gravelly sand were sampled. The face bottoms in gravelly sand. A composite of the face in the northwest corner, represented by Tests #2 and #3B,

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 17

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														would probably meet requirements for Item 201, Sub-base of Gravel. The gravel beds appear to dip south or southwest.
	4A	1968	0.5-12.5	0-0.5	Yes	100	100	100	45.0	8.0*	1	---	Gran. Borrow (Sand)	Test #4A was a hand sample dug on north face about 375' east of Test #2. The north extension of this face has been cleared for 50'-100'. Vermont Marble Company and the Brandon Rotary Club jointly provide a picnic area north of this stripped portion. The material encountered was a fine to silty sand with silt or silt-clay seams. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 94.0% Passing #80 - 67.3% Passing #200 - 17.8%
	4B	1968	12.5-23	---	Yes	100	100	99.0	4.0	1.0*	1-	---	Sand	Test #4B included a silt seam at 12.5', underlain by clean, sharp coarse sand. The bottom 3' of the face is pebbly or gravelly sand. The face bottoms in gravelly sand. A composite of the face would have excess fines for Item 202, Sub-base of Sand. An additional sieve analysis follows: Passing #10 - 83.5% Passing #40 - 20.6%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 18

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	5	1968	N	O	T	S	A	M	P	L	E		D	Passing #80 - 3.8% Passing #200 - 1.3% Test #5 was dug in pit floor, 55' east of northwest corner. Coarse sand above flowing water at 3.5'. Sand appears to continue to at least 5' with no stones or bedrock. No sample was taken.
	6	1968	0.5-6	0-0.5	Yes	90.8	67.7	46.6	4.0	2.0	1½	16.4%	Gravel	Test #6 was dug in floor, 15' south of Test #4. The material is a clean fine gravel with few +2½" stones. Water enters at 5', and test hole was discontinued, still in fine gravel. There is a large wet area in the southeast part of the pit floor, beginning about 300' southeast of Test #6. The pit floor would be a source of specification gravels, if the floor could be de-watered.
	7	1968	4-10.5	0-4	No	100	100	100	19.0	4.0*	1-	---	Gran. Borrow (Sand)	Test #7 was dug on north side of cleared area about 180'-200' northeast of Test #4A. The top 4' is silt to clay. Underlying this is interbedded sand, silty sand, and silt to clay. The material does not look good. An additional sieve analysis follows: Passing #10 - 97.6% Passing #40 - 72.4%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 19

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Passing #80 - 35.2% Passing #200 - 17.2%
7	1	1968	1.5-10.5	0-1.5	No	97.2	97.2	96.5	32.8	19.0 18.3*	1	---	---	Owner: Herman Dodge. This area is more or less flat meadow lying between U. S. Route 7 and State Aid Highway No. 8. D. P. Stewart has mapped area as lake sands or sediments. At the time sampled, the property was up for sale as house lots. Test #1 was dug on the west side of the State Aid Highway about 0.1 mile north of U. S. Route 7. The material is horizontally bedded sand, silty sand, and silt. The sands appear a little coarser below 6'. The sample taken had excess passing the #270 mesh sieve for Item 105, Granular Borrow. An additional sieve analysis follows: Passing #10 - 97.9% Passing #40 - 70.2% Passing #80 - 45.1% Passing #200 - 25.9%
	2	1968	1.5-7.5	0-1.5	No	100	100	100	79.0	25.0*	1½	---	---	Test #2 was dug about 255' north of Test #1. The material is very fine sand to silt, more uniform than Test #1 without obvious bedding. Overall, the material is a silty sand with excess silt for Item 105.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 20

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				An additional sieve analysis follows: Passing #10 - 95.6% Passing #40 - 89.8% Passing #80 - 84.0% Passing #200 - 56.5%
8	1	1968	1-9.5	0-1	No	100	100	98.8	9.9	1.5*	1½	---	Sand	Owner: Bob Adams. One hand sample was taken from a small erosion gully on the south edge of the large field that is located south across U. S. Route 7 from Adams Cottages. The test was sampled about 700' south of the highway; the field is about 450'-500' wide (northwest-southeast) through the test, and a narrower portion extends to the southwest. It is at an elevation of about 400 feet, and has been mapped as lake sands or sediments by D. P. Stewart. Material in the upper part of the test hole is reddish tan sand with an occasional small pebble. The lower part of the hole is fine sand, bottoming at 9.5' in silty sand. Elsewhere in the field the surface shows small pebbles. No further testing could be done. This area would probably not be available as a source

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 21

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														of sand for construction purposes. An additional sieve analysis follows: Passing #10 - 97.9% Passing #40 - 59.0% Passing #80 - 17.4% Passing #200 - 2.8%
9	1	1968	1-4.5	0-1	Yes	100	100	100	20.0	2.0*	1	---	Gran. Borrow (Sand)	Owner: George Hallock. This is a small, old diggings located on the west side of Town Highway No. 13, about 0.15 mile north of U. S. Route 7. Sand for masonry purposes had been taken out in the past, but now the pit area is grown to brush. The pit floor is about 90' north-south, and the feature extends west about 60' from the pit proper. Material sampled probably represents that in the wooded area south across the brook. Test #1 was dug in west side of pit floor. Beds of fine sand dip west and vary in thickness from 4' at the east end to 6.5' at the west end of the hole. The test hole bottoms in clay. An additional sieve analysis follows: Passing #10 - 98.6% Passing #40 - 80.9% Passing #80 - 38.1% Passing #200 - 6.7%

*Percentage of Total Sample

TABLE I

PRANDON GRANULAR DATA SHEET NO. 22

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1968	1-4	0-1	Yes	100	100	100	26.0	6.0*	1	---	Gran. Borrow (sand)	Test #2 was a hand sample of 5-foot east face having 30' of extension east to road. The material is fine or very fine sand. An additional sieve analysis follows: Passing #10 - 98.0% Passing #40 - 81.4% Passing #80 - 42.3% Passing #200 - 10.3%
10	1	1968	1-6	0-1	No	100	100	100	97.0	---	---	---	---	Owner: Sid Rosen. This area is pasture lying below the west side of Town Highway No. 31. The pasture is about 0.4 mile north of U. S. Route 7. Test #1 was dug 235' north of pasture fence, and 230' west of the road. The material is silty clay over clay, an A-7-6 clay.
	2	1968	1.5-7	0-1.5	No	100	100	100	11.0	2.0	1	---	Sand	Test #2 was dug about 410' north of and a few feet above Test #1. The test is at east edge of tree line under a power line. The material beneath 1.5' of overburden appeared to be fine sand pockets in silt to clay and did not look good. The sample, however, met Item 202 requirements. Since the pasture slope is somewhat bouldery east of Test #2, and does not look like a

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 23

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														site of lacustrine deposition, it is expected that the granular material is in the wooded area to the west and would be limited by gullies mapped by D. P. Stewart as alluvium.
11	1	1968	1-7	0-1	No	100	100	100	31.0	11.0*	1	---	---	Owner: Earl Dunshee. This area is a large rolling meadow hidden behind a low wooded hill east of Town Highway No. 31. A wooded hill with exposed bedrock is north of the meadow; a wooded ridge lies to the east. The meadow is in mapped lake sands which extend northeast through a low, wooded vale between the hills toward Smalley Swamp. The meadow is about .07 mile east of the town highway. Test #1 was dug in the northeast corner of the meadow. Below 1' of overburden is 1.5' of silty sand over sand and silty clay. The sample had excess silt for Item 105. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 89.7% Passing #80 - 54.3% Passing #200 - 18.3%
	2	1968	1-9	0-1	No	100	100	100	38.0	15.0*	1½	---	---	Test #2 was dug on the southeast side of the wooded gully that extends northeast up across the madow. The test

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 24

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														is 480' southwest of Test #1. Wet coarse sand underlies 3' or 4' of silty sand. The sample had excess silt for Item 105. The test hole was dug near a wet area in the gully that shows signs of swamp development.
	3	1968	1.5-10	0-1.5	No	100	100	100	11.0	2.0*	1½	---	Sand	Test #3 was dug 275' south of Test #2 at edge of meadow above a small swampy area and gully. The material is fine sand acceptable for Item 202. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 81.1% Passing #80 - 22.8% Passing #200 - 3.9% No further testing was done because the area is a hay meadow. It would perhaps be a source of construction materials, probably Granular Borrow, with a possibility that Item 202 sands could be found in places. The meadow is about 0.1 mile southwest of Smalley Swamp and the proposed location of the Arterial Highway via the wooded vale between the hills.
12	1	1968	1-10	0-1	No	100	100	100	25.0	5.0*	1	---	Gran. Borrow (Sand)	Owner: Bob Wood. This area is the north end of the long meadows north of Town Highway No. 35. The meadow

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 25

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														is east of a wooded ridge, and its north end is bordered by woods to stretching northward down to Smalley Swamp. It is in lake sands or sediments mapped by D. P. Stewart, and the proposed location of the Arterial Highway skirts its east side and north end. The owner uses the meadow for produce gardening. Test #1 was dug in the west edge of a cornfield at the northeast corner of a thinly wooded area. The material is flat-bedded fine sands, going at 10' to pebbly coarse sand and water. There are a few thin silt seams throughout the fine sand. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 88.0% Passing #80 - 43.8% Passing #200 - 11.2%
	2	1968	1.5-10.5	0-1.5	No	100	100	100	25.0	4.0*	1	---	Gran. Borrow (Sand)	Test #2 was taken 230' northwest of Test #1 in northwest corner of field. The material is thinly and horizontally bedded fine sand. Water was found at about 11'. An additional sieve analysis follows: Passing #10 - 100.0%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 26

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				Passing #40 - 76.5% Passing #80 - 22.0% Passing #200 - 4.0% Generally speaking, the material in the north part of the meadow would be too fine for Item 202, Sub-base of Sand, and water can be expected below about 10'-12' in any excavation. Possibly southwest of Test #1, toward Test #3 of Map Ident. No. 13, the sand would be coarse enough for Item 202.
13	1	1968	1-12	0-1	No	100	100	100	70.0	30.0*	1	---	---	Owner: Rodney Marsh. This area is north half of one-quarter mile long meadow extending north of Town Highway No. 35. The meadow is 350'-400' wide and lies east of a north-south trending wooded ridge. D. P. Stewart has mapped the area east of the ridge and south of Smalley Swamp as lake sands or sediments. The meadow is south and west of the Wood property, the north end of which was sampled as Map Ident. No. 12. Test hole #1 was dug along the hedgerow between the Marsh and Wood properties, about 370' south of the north end of the Marsh meadow. The material is fine sand or silty sand, cut at 5' by

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 27

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														a silt seam. The sand looked coarser than its sieve analysis indicates.
	2	1968	1-10	0-1	No	100	100	100	37.0	6.0*	1	---	Gran. Borrow (sand)	Test #2 was dug 370' north of Test #1 on the Wood-Marsh property line. The material is horizontally bedded fine sand that looks good. There are 1 or 2 thin seams of silty sand. Coarse sand and water hit at 9', continuing to at least 11'. An additional sieve analysis follows: Passing #10 - 98.7% Passing #40 - 83.9% Passing #80 - 49.3% Passing #200 - 12.6%
	3	1968	1-7.5	0-1	No	100	100	100	15.0	2.0*	1	---	Sand	Test #3 was dug on the west (upper) side of the field, 230' south of the thinly wooded area owned by Bob Wood. The test is about 50' out from exposed bedrock in the wooded ridge. The material is fine to coarse sand, bottoming in clay at 7.5'. This sample met requirements for Item 202. An additional sieve analysis follows: Passing #10 - 98.8% Passing #40 - 67.9% Passing #80 - 23.2% Passing #200 - 4.1% The vicinity of Tests #1 and

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 28

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														#2 would be source of Item 105, Granular Borrow. The sand would be better along the higher side of the field. The owner has plans to develop the south part of the field for house lots. The north half might be available as a source of construction materials.
14	1	1968	1.5-11	0-1.5	No	100	100	99.2	74.4	5.0*	1	---	Gran. Borrow (Sand)	Owner: R. J. Hack. This is a small field (400' x 230' east-west) through which the proposed location of the Arterial Project passes. It is located on the west side of State Aid Highway No. 8, about 0.15 mile north of Town Highway No. 35. The meadow is mapped within lake sands or sediments. Test #1 was dug 30' from town road, 140' from the north end. From 1.5'-5.5' the material is silty sand and coarse sand interbeds; below 5.5' is mainly a uniform very fine sand. An additional sieve analysis follows: Passing #10 - 98.8% Passing #40 - 83.3% Passing #80 - 73.6% Passing #200 - 17.6%
	2	1968	3-11	0-3	No	100	100	96.1	53.8	14.0 13.5*	1	---	---	Test #2 was dug near the southwest corner of the pasture,

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 29

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				210' southwest of Test #1. The meadow drops off to the south and west. From 0-3' is sod and silt; 3'-6', coarse sand with a few small pebbles; 6'-11', silt or silty sand. The top sand looks good. An additional sieve analysis follows: Passing #10 - 96.4% Passing #40 - 75.3% Passing #80 - 66.4% Passing #200 - 27.4% The bottom of the hole is silt or silty sand. There is probably area enough here for a small pit. However, about 100' of its south end is used as a garden.
15	1	1968	1-4	0-1	No	100	43.0	80.5	4.8	1.5 1.2*	2½	---	Sand	Owner: Willis Torrey. This is 400-foot wide west-sloping field across State Aid Highway No. 8 from Map Ident. No. 14. It is within lake sands or sediments mapped by D. P. Stewart. The material encountered may represent a deposit worked by waves in a glacial lake. There is a change to a steeper slope at the east edge of the field. Test hole #1 was dug 280' east of the road, opposite the opening into R. J. Hack's

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 30

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														garden. Three feet of pebbly reddish sand overlies a stony glacial till. An additional sieve analysis follows: Passing #10 - 73.4% Passing #40 - 17.5% Passing #80 - 6.1% Passing #200 - 2.5%
	2A	1968	1-5	0-1	No	100	100	100	15.0	3.0*	1	---	Sand	Test #2 was dug on low, broad knoll that stands out from general slope of field. It is 240' south 15° west of Test #1. The low knoll is about 230' wide, north-south and is 8'-10' high above the swales which limit the feature north and south. The test hole was dug about opposite R. J. Hack's barn. Log of Test: 0-1', overburden; 1'-5', fine sand; 5'-9.5', gravel with cobbles.
	2B	1968	5-9.5	---	No	79.0	72.5	59.0	3.0	1.0	1½	17.2%	Gravel	From 1'-5' was sampled as Test #2A and from 5'-9.5' was sampled as Test #2B. An additional sieve analysis for Test #2A follows: Passing #10 - 95.7% Passing #40 - 66.6% Passing #80 - 27.7% Passing #200 - 9.5% The proposed location of the Arterial Highway passes through this property and crosses the State Aid Highway.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 31

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
16	1	1968	1-9.5	0-1	No	100	100	59.4	40.0	20.0	1	---	---	Owner: W. J. B. Goodnow. This area is a west-sloping field north of Map Ident. No. 15. It also is within mapped lake sands or sediments. Test hole #1 was dug in southwest corner of field, 90' north of Torrey's plowed field. Log of Test: 0-1', overburden, 1'-3', fine gravel; 3'-5', silty sand; 5'-9.5', angular boulders and silty clay. The sample had excess silt for Item 105, Granular Borrow.
	2	1968	1-9.5	0-1.	No	100	100	100	79.5	---	---	---	---	Test #2 was dug on the high point on the west edge of the field, 85' south of tree line. The material appears to be sand and silt in the top 4.5' over silt to clay. The sieve analysis indicated an A-7-6 clay.
17	1	1968	1-7.5	0-1	No	88.7	87.8	86.0	11.2	5.0 4.3*	1	---	Gran. Borrow (Sand)	Owner: W. J. B. Goodnow. This area is knolly pasture south of Town Highway No. 36, about 0.1 mile east of State Aid Highway No. 8. The pasture is mapped within lake sands or sediments. The deposits may be of ice contact origin, laid down against the margin of the glacial ice that occupied the Vermont Valley prior to its inundation by glacial melt waters.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 32

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				Test #1 was dug on the gentle, westerly slope of a broad, flattened knoll 225' south of the Town Highway and 270' west of the woods. Log of Test: 0-1', overburden; 1'-3', sand; 3'-5.5', pebbly sand; 5.5'-7.5', fine sand. The test bottomed in silt to clay. An additional sieve analysis follows: Passing #10 - 88.8% Passing #40 - 56.8% Passing #80 - 25.3% Passing #200 - 7.0%
	2	1968	1-7	0-1	No	100	89.0	77.4	20.9	6.0 4.6*	1	---	Gran. Borrow (Sand)	Test #2 was dug on the small knoll in the northeast corner of the area. The test is 70' south of the Town Highway and 120' west of the woods. The area represented by this test is estimated at 140' north-south x 180' east-west. The material down to 4' is a pebbly sand overlying fine sand with a few pebbles. A silt or silty sand was hit at 7'. An additional sieve analysis follows: Passing #10 - 81.2% Passing #40 - 52.1% Passing #80 - 33.4% Passing #200 - 11.9% D. P. Stewart has mapped positive granular features

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 33

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														north across the Town Highway as beach gravels. It is possible that the deposits in Map Ident. No. 17 may also represent deposition in and sorting and reworking by near-shore lake waters.
18	1	1968	2-10	0-2	No	45.6	40.0	30.6	10.0	3.0	2½	12.4%	Gravel	Owner: Gerald Johnson. This area is north end of a low meadow on the east side of State Aid Highway No. 8 across from Town Highway No. 36. A wooded and bouldery knoll rises at the north end of the meadow. Test #1 was dug 145' west of the road at the north end of the meadow. The material is very cobbly, but has few +6" stones. The sand portion is light colored. The knoll is inaccessible to backhoe. The owner would rather not sell the meadow for gravel, but would make the knoll available.
19	1A	1968	1.5-13	0-1.5	Yes	65.7	59.7	43.6	9.0	3.0*	2	19.4%	Gravel	Owner: Sid Rosen. This is a small property that has about 700' of frontage on Town Highway No. 36, and about 100' on State Aid Highway No. 8. The property has two small pits whose extensions would be into Johnson's property. The small

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 34

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														western pit has been used as a storage area by the town. The upper eastern pit measures about 140' east-west x 90' north-south. Test #1A was a hand sample taken on the upper part of the 22-foot high east face. The material is gravel with mainly angular quartzite pebbles and a reddish tan sand portion.
	1B	1968	13-22	---	Yes	100	100	96.2	37.0	11.0*	1	---	---	Test #1B was sampled from the bottom 9' of the east face. From 13'-14.5' is pebbly sand; 14.5'-22' is fine sand. An additional sieve analysis follows: Passing #10 - 94.9% Passing #40 - 78.0% Passing #80 - 53.1% Passing #200 - 21.5% It is expected that the gravel sampled in Test #1A would get thinner eastward, and the sands would thin also, as the bedrock of the valley wall begins to rise more steeply.
	2	1968	0.5-8	0-0.5	Yes	100	100	47.5	21.5	2.0*	1½	---	Gran. Borrow (Sand)	Test #2 was sampled on the east face of the smaller pit, 280' west of Test #1B. From 0.5'-2.5' is a stony sand overlying a fine sand. The bottom of the face has much slough and some pea stone which has been stored here. An additional sieve analysis

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 35

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														follows: Passing #10 - 96.3% Passing #40 - 85.0% Passing #80 - 42.1% Passing #200 - 6.8%
	3	1968	0.5-7	0-0.5	Yes	100	100	100	68.0	30.0*	1	---	---	Test #3 was dug in floor of large pit, 25' out from Test #1B. About 2' of fine sand overlies 5' of silt. The hole bottoms in stony silt. An additional sieve analysis follows: Passing #10 - 98.7% Passing #40 - 89.1% Passing #80 - 74.9% Passing #200 - 44.8% Tests #2 and #3 indicate that the unsorted material, on which the granular material rests, rises from west to east and must soon limit the pit's east extension.
	4	1968	1-8	0-1	Yes	97.3	85.3	76.0	2.3	1.0 0.8*	1½	---	Sand	Test #4 was taken on 9-foot north face near pit's north-east corner. This test represents an extension on Johnson's property. The material is a pebbly coarse sand in horizontal beds and with an occasional +2-inch stone. The face bottoms in fine sand. An additional sieve analysis follows: Passing #10 - 69.7% Passing #40 - 14.3%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 36

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				Passing #80 - 4.5% Passing #200 - 2.0% This area is designated as a beach by D. P. Stewart. There is very little material left in this property. Johnson's property line is atop the east and north faces of the east pit.
20	1	1968	1.5-18	0-1.5	Yes	100	100	100	53.0	9.3*	1	---	Gran. Borrow (Sand)	Owner: Gerald Johnson. This area is a wooded knoll east of State Aid Highway No. 8 and south of an intermittent stream. The knoll is east of the owner's buildings and north of Sid Rosen's pit. The knoll has a small pit on its east side. Except for the area between the knoll and Rosen's pit, granular material is confined to the knoll. Test #1 was taken on the 18-foot face of the small pit. A lot of roots and brush are atop the face. The material is very fine or silty sand with occasional thin pebbly lenses. The owner has used sand for laying bricks. An additional sieve analysis follows: Passing #10 - 99.4% Passing #40 - 94.0% Passing #80 - 65.3% Passing #200 - 16.8%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 37

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1968	1.5-14	0-1.5	No	100	88.0	86.7	7.8	1.5 1.3*	1	---	Sand	Test #2 was sampled on north face of the knoll above an intermittent stream. The knoll is inaccessible to the backhoe. Above 11' the material is a clean sharp sand; from 11'-14' is pebbly sand, bottoming in sand with cobbles, possibly a gravel a little deeper.
	3	1968	1-5.5	0-1	No	46.4	37.0	27.3	15.0	1.5	1½	15.8%	Gravel	Test #3 was dug on the flat open area about 150' south of the small pit, and 60' northwest of Rosen's pit. About 4.5' of "dirty" looking cobbly gravel overlies fine sand. Stones are angular to sub-angular.
	4	1968	N	O	T	S	A	M	P	L	E		D	Test #4 was dug in woods road about 300' northeast of Test #3. The surface is bouldery and does not look granular. Material in the test hole is bouldery, "dirty" angular gravel. No sample was taken.
21	1A	1968	2-12.5	0-2	Yes	78.0	64.4	45.7	7.0	2.0	2	13.4%	Gravel	Owner: Gerald Johnson. This area is a pit in a beach gravel. It is located about 250' north of Town Highway No. 36 at a point about 0.2 mile eastof State Aid Highway No. 8. Test #1A was sampled at high point on east face. The material to 12' is gravel with angular quartzite stones. From 12' to 21' is a stony silty

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 38

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	1B	1968	N	O	T	S	A		M	P	L	E	D	clay with a boulder - probably glacial till.
	2	1968	0-6	---	Yes	81.1	71.6	55.2	43.0	10.0	2	---	Gran. Borrow (Grav.)	Test #2 was a hand sample taken on the middle level face 30' from the north side of the pit. About 2.5' of gravel overlies a clay seam and fine sand. The face bottoms in silty sand. About 55' north of this test, the feature in which the pit is located drops off to a drainage. An eastward extension of the pit would be on another property. The west side of the pit floor drops off to a wooded and brushy entanglement that appears to be on a glacial till.
	3	1968	N	O	T	S	A		M	P	L	E	D	Test #3 was dug in pit floor a few feet out from east face. Quite a few angular stones and a silty matrix. Resembles till. The hole was dug to 5' and was not sampled.
	4	1968	1-6.5	0-1	No	84.1	70.4	49.4	8.0	1.0	1½	18.6%	Gravel	Test #4 was dug beside a woods trail about 140' southwest of and about 12' below the pit. This test represents an extension of probably thin gravels east of Map Ident. No. 19. The material is a gravel with angular small stones. It bottoms at 6.5' in silt and stones.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 39

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
22	1A	1968	2-15	0-2	No	67.7	49.8	30.8	10.0	4.0	1	11.8%	Gravel	Owner: Gerald Johnson. This area is the hill north of the intermittent stream on the east side of State Aid Highway No. 8. The hill is wooded and its south slope is quite steep. Granular material is exposed for 600' east of the road, above the brook bed. There is varying amounts of slough. A road would have to be built alongside the stream to work the material. Test #1A was sampled from high point on slope about 550' east of the road. Many stones show in slough for about 20' down the face; the bottom 38' has fewer stones. The top 15' is a dusty gravel with an occasional +6 inch stone. Overall, the material looks like a sandy gravel. It goes to a sand at 16'.
	1B	1968	16-34	---	No	100	100	100	12.0	9.0*	1	---	Gran. Borrow (Sand)	Test #1B was of uniform very fine sand sampled from 16'-34'. It bottoms in same, beneath much slough.
	2	1968	1.5-14	0-1.5	No	100	96.6	87.0	27.8	8.0 6.9*	1-	---	Gran. Borrow (Sand)	Test #2 was a sample taken on a 25-foot face 230' east of the road. The clearing atop the face shows stony sand. From 1.5'-3' is gravelly sand; 3'-12' is pebbly fine sand; from 12'-14' is pebbly sand.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 40

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				The sample had excess fines for Item 202, Sub-base of Sand. An additional sieve analysis follows: Passing #10 - 84.2% Passing #40 - 53.6% Passing #80 - 38.3% Passing #200 - 15.8%
	3A	1968	1-6	0-1	Yes	73.5	65.5	50.6	11.0	1.5	1	13.3%	Gravel	Test #3A was dug on upper part of 12-foot face of very small pit, 80'-90' from the road. The top 6' is gravel with a cobble or two. Pit is about 35'-40' long; it has not been used for some time. Probably the gravel in the pit extends eastward as the gravelly sand from 1.5'-3' in Test #2 and the gravel in Test #1A.
	3B	1968	6-13	---	Yes	100	100	100	63.0	19.0*	1	---	---	From 6'-13' was sampled as Test #3B and is silty sand and fine sand unacceptable for Item 105, Granular Borrow. An additional sieve analysis follows: Passing #10 - 93.9% Passing #40 - 90.3% Passing #80 - 71.4% Passing #200 - 27.0%
	4	1968	1.5-8.5	0-1.5	No	100	100	100	69.0	12.0*	1	---	---	Test #4 was dug 125' north of the small pit on west side of hill. The lower hillside has scattered trees; the upper is thickly wooded. The test

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 41

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				was 75' from road. The material is a very fine sand and included a boulder near the surface. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 99.3% Passing #80 - 86.7% Passing #200 - 23.8% In order to work the gravel in this area, it would be necessary to clear the trees and build a haul road that would climb above the sands.
23	1	1968	0.5-7	0-0.5	No	78.9	68.8	54.2	10.0	4.0	2	---	Gran. Borrow (Grav.)	Owner: Harold Voelbel. Two hand samples were dug north of Town Highway No. 37 in an attempt to represent the material in a rolling meadow mapped by D. P. Stewart as lake sands. The owner would allow no backhoe sampling and no material would be available for construction purposes. Test #1 was sampled on a low bank 70' north of the Town Highway at a point about 0.19 mile east of State Aid Highway No. 8. The material is a reddish tan, poorly sorted, angular stone gravel with some boulders. The ground surface to the north and northwest has rocks and stones in abundance.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 42

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1968	1-7	0-1	No	100	100	92.8	27.7	11.0 10.1*	3	---	---	The gravel may represent a small wave-worked deposit, and topographically the area compares to other beach gravels mapped by D. P. Stewart. Test #2 was sampled from the north bank of the Town Highway and perhaps represents the material in the meadow. Test #2 was about 130' west of Test #1. The material was a reddish tan very fine or silty sand with occasional small pebbles. The bank also shows some large rocks and stones. The high color of this test is due to the fact that there were many tree roots and much vegetation within which the sample was taken. An additional sieve analysis follows: Passing #10 - 92.1% Passing #40 - 54.4% Passing #80 - 29.1% Passing #200 - 11.4%
24	1	1968	N	O	T	S	A	M	P	L	E	D		Owner: Donald Severy. This area is rolling meadow located southwest of the junction of Town Highways No. 31 and No. 33. It is mapped as lake sands or sediments by D. P. Stewart. Alluvium lying along a tributary gully, is mapped west

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 43

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														of the meadow. One test hole was dug on the west side of the meadow about 500'-600' west of Town Highway No. 31. About 6' of silt or clay was found and not sampled.
25	1	1968	1-6	0-1	No	100	100	100	99.0	---	---	---	---	Owner: Donald Severy. This area is pasture west across the tributary gully from Map Identification No. 24. Lake sands are mapped in the rolling meadow to the west. Test #1 was dug near the bend in the power line, about 1100' southeast of Town Highway No. 33. Varved lake sediments were found. The sample taken was an A-6 clayey silt with 98.0% finer than the #200 mesh sieve. The rolling meadow could not be tested. It doesn't appear, however, to be underlain by granular material because it is rolling and because it is crossed by a shallow swale. Test #1, being at the east side of the meadow, probably represents the material.
26	1	1968	1-7	0-1	No	100	100	100	63.0	17.0*	1	---	---	Owner: George Dutton. This area is small meadow north of Town Highway No. 33, about 0.07 mile west of Town Highway No. 31. One test hole was dug about 225' north of

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 44

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														the Town Highway. The material is silty sand, fine sand and a silty clay layer. Wet silt was hit at 8'. Overall the material is a silty sand, too fine for Granular Borrow, Item 105. An additional sieve analysis follows: Passing #10 - 99.3% Passing #40 - 97.2% Passing #80 - 76.0% Passing #200 - 26.7% The proposed location of the Arterial Highway is shown in this meadow.
27	1	1968	1-8	0-1	No	100	100	100	95.5	---	---	---	---	Owner: Donald Severy. Area is large pasture west of Town Highway No. 31, north of Map Ident. No. 26. D. P. Stewart has shown area as lake sands or sediments. One test hole was dug 140' out from the ridge at the west side of the pasture. The material to 5' is silt over silty clay to at least 8'. It is an A-4 silt with 100% passing the #10 sieve and 79.0% passing the #200 sieve.
28	1	1968	0.5-8	0-0.5	No	100	94.9	87.6	2.6	1.0 0.9*	1	---	Sand	Owner: Donald Severy. This area is flat, cleared fields and woodland north of Town Highway No. 34, and west of and below State Aid Highway No. 8. The south part of the

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 45

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														area is leased by another farmer. It is mapped as lake sands or sediments. A beach gravel is mapped on ground that rises to the east and northeast of this area. Test #1 was dug 635' north of the Town Road on the east side of the area. Test is dug on northeast corner of cleared area that is north of an oat field. The material is pebbly coarse sand in flat beds. The sand is quite uniform and looks good. Fine or very fine sand was hit at 8'. An additional sieve analysis follows: Passing #10 - 79.9% Passing #40 - 14.9% Passing #80 - 3.0% Passing #200 - 1.5%
2	1968	0.5-9.5	0-0.5	No	100	96.4	90.1	12.6	6.0 5.4*	1	---	Gran. Borrow (Sand)	Test #2 was dug 170' north of Test #1 at north end of area cleared in pines and birches. The material is sand similar to Test #1, but has a silt seam at 7'-8' and is overall a little finer.
3	1968	0.5-10	0-0.5	No	100	100	98.1	19.6	3.0 2.9*	1	---	Gran. Borrow (Sand)	Test #3 was dug on north side of cleared strip, 200' west of Test #1. Pebbly sand overlies fine sand, bottoming at 10' in clay. An additional sieve analysis follows:

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 46

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				Passing #10 - 97.5% Passing #40 - 69.5% Passing #80 - 32.9% Passing #200 - 6.2% The owner would sell material from this area. The sand would be quite shallow - probably not 10' thick - and generally would have slightly excess very fine sand or silt. The terrain drops west toward a small stream and therefore its west extension is limited. A north by northeast extension would be toward sands and gravels in Map Ident. No. 29.
29	1	1968	1-9.5	0-1	No	75.0	66.1	45.3	9.0	3.0	1½	13.0%	Gravel	Owner: Victor Carey. Area is large cornfield on west side of State Aid Highway No. 8, northwest of owner's buildings. The field has been mapped as beach gravel by D. P. Stewart. The cornfield has a broad, low rounded terrace in its central and northwest part. Its east and south parts are from 6'-10' below the broad terrace. Test #1 was dug about 200' northwest of the house at east end of the cornfield, a short distance from a small frog pond. The material from 1'-4.5' is a reddish fine gravel over gravel with a few cobbles,

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 47

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														from 4.5'-9.5'. The beds have a gentle southerly dip. The material caves easily. There are a few small boulders. The test is 170' from the north side of the field.
	2	1968	1-9.5	0-1	No	100	97.6	96.4	2.9	1.0*	1½	---	Sand	Test #2 was dug 255' northwest of Test #1 on the terrace 195' from the northeast corner of the field, and 6'-8' above the elevation of Test #1. The material is a tan gray pebbly coarse sand with fewer pebbles below 5'. It appears to be horizontally bedded and it looks pretty good. An additional sieve analysis follows: Passing #10 - 93.7%, Passing #40 - 16.7%, Passing #80 - 4.2%, Passing #200 - 2.4%
	3	1968	1.5-10	0-1.5	No	100	100	93.0	2.7	1.0 0.9*	1	---	Sand	Test #3 was dug about 255' west of Test #2 and 270' from the west side. The test is 55' from the north side and is 5'-6' below the elevation of Test #2. The material is a pebbly very coarse sand with vague bedding seeming to dip south. The sand has fewer pebbles and is less coarse below 5'. A boulder hit at 9' and sand continues to below depth sampled.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 48

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														An additional sieve analysis follows: Passing #10 - 75.4% Passing #40 - 7.6% Passing #80 - 3.0% Passing #200 - 1.6%
	4	1968	1-9	0-1	No	100	97.7	94.3	2.8	1.0 0.9*	1½	---	Sand	Test #4 dug on south part of terrace near the power line that crosses from northwest to southeast. The test is 225' southwest of Test #2 and 300' southeast of Test #3. From 1'-4' is pebbly coarse sand underlain from 4' to at least 9' by coarse or very coarse sand. The material looks good. It is horizontally stratified. An additional sieve analysis follows: Passing #10 - 87.2% Passing #40 - 6.8% Passing #80 - 2.7% Passing #200 - 1.6% There are somewhat over 2 acres on the higher part of the cornfield that has at least 9' or 10' of pebbly coarse sand.
	5A	1968	1-6	0-1	No	100	100	97.7	43.0	14.0 13.7*	1	---	---	Test hole #5 was dug 280' south of and 5'-7' below the elevation of Test #4. From 1'-6' is silty sand, sampled as Test #5A. An additional sieve analysis follows:

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 49

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	5B	1968	6-11	---	No	79.2	69.3	51.0	5.0	1.0	1	13.3%	Gravel	Passing #10 - 95.2% Passing #40 - 76.7% Passing #80 - 58.6% Passing #200 - 24.6% Test #5B from 6-11' is clean fine gravel. Hole bottoms in same. Test is 95' from south side of property. Test #6 dug about 230' northeast of Test #5 and about 220' southwest of Test #1. Test is about 7' below elevation of Test #1. Test #6A from 1-7' is fine sand with a few small pebbles. An additional sieve analysis follows: Passing #10 - 93.3% Passing #40 - 87.9% Passing #80 - 42.0% Passing #200 - 7.0% Test #6B is fine gravel from 7' to at least 10'. Meets requirements for Item 201. Area would be good source of Item 202.in north to northwest part. Gravels acceptable for Item 201 may underlie sands and occur in east and southeast part of field. South of Test #1, gravels are covered by fine or silty sands. Test #6 material below 6' was moist.
	6A	1968	1-7	0-1	No	100	95.1	89.7	22.4	3.0 2.7*	1	---	Gran. Borrow (Sand)	
	6B	1968	7-10.5	---	No	73.6	62.3	42.2	10.0	4.0	1	16.6%	Gravel	
30	1	1968	4.5-7.5	0-1.5	No	100	100	100	83.0	---	---	---	---	Owner: Victor Carey. Area is old pasture across

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 50

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														from owner's buildings, on the east side of State Aid Highway No. 8. Pasture is mapped by D. P. Stewart as part of a large beach gravel. The pasture is westward-sloping and has a bouldery surface with some pines and tamaracks. A test hole was dug 110' east of the road. The top 4.5' was silt and silty sand and was not sampled. From 4.5'-7.5' is a white, earthy clayey material which is quite compact and which is associated with rock fragments at one end of the hole. Also pale pink and buff material occurs. A short distance north of this area is the site of an old kaolin works. The material sampled was an A-4 clayey silt. It had 98.0% passing the #10 sieve and 81.0% passing the #200 sieve.
31	1	1968	1.5-10	0-1.5	No	80.8	74.1	58.7	3.0	2.0	1	7.0%	Gravel	Owner: Mrs. Mildred Blodgett. This area is pine and birch woods surrounding a 110-foot x 140-foot pit. The woods are north of Victor Carey's cornfield and are on a beach gravel as mapped by D. P. Stewart. The area is nearly flat. Test #1 was dug in old access road into the pit about 130' west of State Aid Highway

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 51

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														No. 8. From 1.5'-4' is pebbly sand dipping to the south or southwest. From 4'-10' is fine gravel. Below 10' is cobbly gravel. The test is 60' southeast of the pit.
	2	1968	0.5-9.5	0-0.5	Yes	49.9	46.4	38.7	3.0	1.5	1½	11.6%	Gravel	Test #2 was dug in floor on the north side of the pit, 100' from its east end. From 0.5'-3' is bouldery and cobbly overlying at least 6.5' of clean gravel. The hole bottoms in pebbly sand. The pit is grown in thickly to small trees and the pit floor has piles and boulders and cobbles. The terrain rises about 10' or 12' on the north side of the pit.
	3A	1968	1-7	0-1	Yes	66.3	57.1	52.3	2.0	1.0	1½	11.7%	Gravel	Test #3A was sampled from 1'-7' on west face. From 1'-4' is a fine gravel over cobbly and pebbly sand.
	3B	1968	7-12	---	Yes	100	100	98.7	2.0	1.0*	1-	---	Sand	From 7'-12 was a pebbly coarse sand sampled as Test #3B. An additional sieve analysis follows: Passing #10 - 94.4% Passing #40 - 10.3% Passing #80 - 3.6% Passing #200 - 2.1%
	4	1968	1-10	0-1	No	70.0	67.5	55.2	11.0	4.0	1½	---	Gran. Borrow (Grav.)	Test #4 was dug 280' north of Test #1 in woods trail about 120' from State Aid Highway

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 52

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														No. 8. The material from 1'-5' is sand over 5' of fine gravel. The hole bottoms in cobbly gravel. The gravel is not well-graded. Too few proper size stones were included for the wear test. This test represents a northeastward extension of the pit.
	5	1968	1-9	0-1	No	57.3	48.5	38.2	9.0	4.0	1½	18.2%	Gravel	Test #5 was dug 145' north 20°west of Test #4. The test was in an open area about 10' above Test #4. From 1'-6' is cobbly, bouldery gravel with some weathered stones. From 6'-9' is fine gravel. The hole bottoms in fine gravel. To develop this area it would be necessary to cut the trees.
32	1A	1968	0.5-5.5	0-0.5	Yes	100	100	94.2	16.0	2.0 1.9*	1	---	Sand	Owner: Victor Carey. This area is vicinity of small shallow pits east across State Aid Highway No. 8 from Map Ident. No. 31. The extensions of the two pits are wooded, and, except for an area about 200' east west x 90' north-south, east of the south pit, are very bouldery. Test #1 was sampled on 12-foot east face of 75-foot long south pit. The top 5.5' is interbedded pebbly fine sand and very fine or silty sand.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 53

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														It was sampled as Test #1A. An additional sieve analysis follows: Passing #10 - 87.5% Passing #40 - 66.7% Passing #80 - 28.2% Passing #200 - 5.4%
	1B	1968	5.5-8.5	---	Yes	100	98.4	74.8	2.2	1.5 1.1*	1-	---	Sand	Test #1B was pebbly coarse sand going at 8.5' to a stony silt to clay. A hole dug in the pit floor, 40' west of Test #1B, had 2.5' of pebbly sand over stony silt to clay. This evidence and that of Test #1B, indicates that silty clay bottom of this area rises from west to east. An additional sieve analysis follows: Passing #10 - 46.9% Passing #40 - 5.8% Passing #80 - 3.2% Passing #200 - 1.7%
	2A	1968	1.5-8	0-1.5	No	100	97.9	80.0	17.6	5.0 4.0*	1-	---	Sand	Test #2A was sampled on bank of bulldozer track about 75'-80' northeast of Test #1A. The top of the bank is about 8' above Test #1A. The material from 1.5'-6' is interbedded fine sand and pebbly coarse sand; from 6'-8' is silty sand. An additional sieve analysis follows: Passing #10 - 68.2% Passing #40 - 45.1%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 54

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2B	1968	8-14.5	---	No	100	95.3	89.8	21.6	4.0 3.6*	1	---	Gran. Borrow (Sand)	Passing #80 - 36.8% Passing #200 - 16.8% Test #2B was dug in the bulldozer trail, a few feet from Test #2A. The material is very fine sand and pebbly sand, bottoming in stony silty clay or till. An additional sieve analysis follows: Passing #10 - 82.4% Passing #40 - 61.0% Passing #80 - 31.0% Passing #200 - 9.7% Some stripping has been done atop the pit's east face, but extension is mainly wooded. There is limited extension to the south of the pit's south face.
	3	1968	1-7	0-1	Yes	65.2	55.0	45.1	4.0	1.0	1	19.1%	Gravel	Test #3 was dug at the north end of the 155-foot long north pit. There are some boulders around this pit. The faces vary from 5'-8'. The 8-foot high north face is about 50' long (east-west). In the test were some boulders, clean gravel, and a 3-foot thick pocket of fine sand. The face bottoms in silty clay with stones. Extension of this pit is to east and north in wooded, bouldery terrain characterized by low jumbled mounds and ridges of bouldery material..

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 55

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				The terrain looks like moraine.
33	1	1968	1.5-7.5	0-1.5	Yes	57.0	49.0	34.0	12.0	6.0	1	13.9%	Gran. Borrow (Grav.)	Owner: Victor Carey. Area is small pit less than 100' long, located on the east side of State Aid Highway No. 8, about 300' north of Map Ident. No. 32. Extensions are to south, east, and north in wooded bouldery terrain. Test #1 was dug on the 8-foot north face. Hit 3' of sandy gravel over 3' of sandy coarse gravel. The material looks good at the floor level. There are also some boulders on the face.
	2	1968	0.5-4.5	0-0.5	Yes	62.9	49.9	34.3	7.0	2.0	1	17.6%	Gravel	Test #2 was dug in pit floor 35' south of Test #1. The material is a cobbly, fairly clean gravel, bottoming in glacial till at 4.5'. Pit extensions would be very hard to work because of many boulders, some of which are very large. The pit is in a feature mapped as beach gravel by D. P. Stewart.
34	1	1968	1-8.5	0-1	No	50.4	43.4	29.2	12.0	5.0	1½	9.0%	Gravel	Owner: Newton and Thompson Company, Inc. This area is meadow and wooded hill lying on the southeast side of Vermont Route 73 in Forest Dale. The meadow measures about 475' x 270'. A spokesman for the company

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 56

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														stated that some of the material in the area might be used in their own construction plans. Test #1 was dug 165' from highway near southwest side of open meadow. The material is a very stony gravel with some large cobbles. About 10% exceeds 6" and was not included in sample. The hole bottoms in sandy, cobbly gravel.
	2	1968	1.5-5.5	0-1.5	No	75.9	63.7	38.5	16.0	6.0	1½	15.4%	Gran. Borrow (Grav.)	Test #2 was dug at edge of woods 310' southeast of Test #1 and 55' from road up into woods. The material is a sandy cobbly gravel, poorly sorted. It has a few boulders and bottoms in glacial till. The till is wet below 6'.
	3	1968	1.5-8	0-1.5	No	58.7	34.4	27.2	12.0	3.0	1	15.5%	Gravel	Test #3 dug beside woods road about 200' east of Test #2 (about 300' by woods road). The material is bouldery and cobbly with yellowish tan fines. Above 3' is quite silty and bouldery; from 3'-8' is a fairly good looking gravel. It is very stony. The area in the woods is above the meadow and has been mapped as beach gravel by D. P. Stewart. The terrain is rolling to hilly and looks like an ice-contact topography. There is an old dump northeast of Test #3 which was an older pit where gravelly

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 57

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														material was once removed. More exploration is needed in the wooded area.
35	1	1968	1-13.5	0-1	Yes	100	100	96.6	6.8	2.0 1.9*	1½	---	Sand	Owner: Johnson Lumber Company of Bristol. This area is pit and its vicinity in a pine woods east of Town Highway No. 18, and just west of the Forest Dale Cemetery. Access is via woods roads from Dexter Kimball's large field. Test #1 was taken on west pit's southeast face. This pit is 70' x 55' and is the most recent working. On the face 3' of pebbly sand overlies fine sand. A gravelly sand layer hit at the floor level. An additional sieve analysis follows: Passing #10 - 93.2% Passing #40 - 52.8% Passing #80 - 10.4% Passing #200 - 3.1%
	2	1968	0.5-9	0-0.5	Yes	100	100	100	23.0	9.0*	1	---	Gran. Borrow (Sand)	Test #2 was a floor sample taken 25' from southeast face. Material is flat-bedded fine sand with thin silty laminae. Material below 4' is somewhat coarse with an occasional stone.
	3	1968	2-14	0-2	Yes	71.6	69.4	65.0	2.0	1.5 1.0*	1½	---	Gran. Borrow (Sand)	Test #3 was dug in west face of an old pit area at a point

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 58

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				

about 140' east of Test #1. Top of this test is about 2' above top of Test #1. Area of the old diggings is about 125' east-west x 175' north-south, and it is surrounded by woods. There are a few boulders in its floor. Its faces vary below 6' in height.

Log of Test: 0-2', overburden; 2'-5', coarse sand; 5'-11', pebbly coarse sand with a cobble or two; 11'-14'+, fine sand.

This face is 6' high; test was continued in floor.

An additional sieve analysis follows:

Passing #10 - 78.1%
Passing #40 - 13.6%
Passing #80 - 3.4%
Passing #200 - 1.7%

Deposit has been mapped by D. P. Stewart as lake sands. Size of the property owned by the lumber company is not known. Short pines at least 10" in diameter grow about the west pit, and pines and birches surround the old east diggings. The west pit is about 250' south of Kimball's open field, and another old pit, grown in with trees lies just within the wooded area, south of the field.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 59

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
36	1	1968	1-10	0-1	No	93.5	93.5	84.2	2.5	1.0 0.8*	1-	---	Gran. Borrow (Sand)	Owner: Dexter Kimball. Area is pit and vicinity and cornfield at large between about 0.25 and 0.35 mile east of Town Highway No. 18. The area has been mapped by D. P. Stewart as lake sands. Rock is exposed about 525' west of the pit along a low, north-south trending ridge. The same rock outcrops on a spur standing above the alluvial flood plain that skirts the north side of the cornfield. The terrain on the cornfield is flat to rolling and the elevation drops at least 45' into a low sag in the middle south part of the field. Test #1 was dug near the west end of the pit 25' from the north side of the cornfield. The material is pebbly, very coarse sand with a few small cobbles. The beds are horizontal. Below 7.5' is fine sand. An additional sieve analysis follows: Passing #10 - 70.3% Passing #40 - 11.8% Passing #80 - 3.9% Passing #200 - 2.1%
	2	1968	4-9.5	0-4	No	100	85.3	79.8	15.9	10.0 7.9*	1	---	Gran. Borrow (Sand)	Test #2 was dug about 300' east of Test #1, 220' from the east end of the field, and 55' from its north side. The top

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 60

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														4' is silt and fine sand overlying a pebbly very coarse sand with a few cobbles and a boulder or two. A layer of cobbles at 8'-9'. The material is quite silty and overall, does not look good. The cobbles and boulders were not included in the sample. An additional sieve analysis follows: Passing #10 - 70.5% Passing #40 - 25.3% Passing #80 - 18.6% Passing #200 - 10.5%
3	1968	1-10	0-1	No	100	82.4	79.1	3.1	1.0 0.7*		1	---	Sand	Test #3 was dug at south edge of field, 425' south 70° west of Test #2. Log of Test: 0-1', overburden; 1'-2.5', pebbly sand; 2.5'-5.5', pebbly coarse sand; 5.5'-7.5', coarse sand; 7.5'-10', fine sand. This test is below the elevation of Test #1 and is atop a wooded old pit area on the Johnson Lumber Company property. An additional sieve analysis follows: Passing #10 - 84.4% Passing #40 - 24.8% Passing #80 - 5.5% Passing #200 - 2.2%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 61

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	4	1968	0.5-10	0-0.5	Yes	100	100	100	10.0	2.5*	1-	---	Sand	Test #4 was dug 65' from west end of pit in its 20-foot wide floor. The pit is about 170' long (east-west) and is filled with junk. Its faces vary from 6' at the west end to 14' at the east end. The pit is located at the north edge of the field. Test #4 was about 7' below the elevation of Test #1. The material is flat-bedded bands of coarse and fine sand. There is an occasional isolated pebble. One huge boulder hit. The hole bottoms in silt or silty sand at 10'. An additional sieve analysis follows: Passing #10 - 98.5% Passing #40 - 54.0% Passing #80 - 16.1% Passing #200 - 4.9%
	5	1968	1-10	0-1	No	100	100	100	9.0	2.0*	1½	---	Sand	Test #5 was dug 250' west of Test #1, 50' from the north side of the field. This test is about 275' east of the rock outcrops. The material is fine sand with a very few small pebbles. Fine sand continues to below depth. An additional sieve analysis follows: Passing #10 - 98.4% Passing #40 - 59.2%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 62

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				Passing #80 - 15.7% Passing #200 - 4.2% This area would be good source of Item 202 sand from the central part of the field south of the pit. The west side of the field is at a lower elevation, and the material appears to be quite fine. Permission could not be obtained to sample in this part of the field.
37	1	1968	1-9.5	0-1	No	58.7	52.2	40.6	2.0	1.0	1½	5.7%	Gravel	Owner: Howard Griffin. This area is northwest side of terrace, northwest of junction of Vermont Routes 73 and 53. Access is either across pasture from the owner's buildings, or south from Town Highway No. 21 across the alluvial flood plain to the water pumping station that is located below this area. Test #1 was dug at the edge of the terrace, 340' southwest of the LaFrance property, and above the pumping station. The material from 1'-2' is fine gravel; from 2'-5' is cobbly gravel; from 5'-9.5' is pebbly or gravelly sand.
	2	1968	1-8.5	0-1	Yes	100	83.3	73.7	2.9	1.0 0.7*	1½	---	Sand	Test #2 was taken on exposed bank of road leading down past pit to pumping station. The test is actually above the pit, but some material has also been

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 63

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														removed from the roadway. This test is 65' southwest of Test #1. Log of Test: 0-1', overburden; 1'-2.5', gravel; 2.5'-8.5', pebbly coarse sand. The bottom of the face is pebbly coarse sand. The gravel of Test #1 has graded to finer material of Test #2. An additional sieve analysis follows: Passing #10 - 52.2% Passing #40 - 7.3% Passing #80 - 4.5% Passing #200 - 2.8%
	3A	1968	2-5	0-2	Yes	55.1	50.5	44.1	7.0	3.0	3	---	Gran. Borrow (Grav.)	Test #3 was dug beside roadway down 'scarp, about 90' southwest of and 5.5' below bottom of Test #2. The material does not look in place in the top 2'. From 2'-5' is a poorly sorted cobbly gravel sampled as Test #3A. Too few proper-size stones were included for the wear test.
	3B	1968	5-9	---	Yes	100	100	100	1.0	0.5*	1	---	Sand	Gray sand from 5'-9' was sampled as Test #3B. The hole bottoms in coarse sand. An additional sieve analysis follows: Passing #10 - 98.2% Passing #40 - 19.1% Passing #80 - 3.6% Passing #200 - 1.8%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 64

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	4	1968	N	O	T	S	A	M	P	L	E		D	A water line was dug from pumping station up across road near Test #3 and southeastward across terrace to the Forest Dale School. Therefore, material can not be removed in vicinity of Tests #2 and #3. An attempt was made to sample the face of the pit that was opened on the escarpment a short distance northwest of the pumping station. There is a lot of slough - too much to dig through, and no sample was taken. Possible this face could be worked and extended eastward and northeastward to keep away from the water line. A 45-foot to 60-foot face would result.
	5	1968	1-9	0-1	No	65.0	52.1	35.0	6.0	2.0	1	9.9%	Gravel	Test #5 was dug 205' south of Test #1 near southwest corner of fenced-in pasture. To south lies old pit area, more recently used as a dump. To the east lies property belonging to the school. Test #5 was also near the water line. From 1'-5' is sandy gravel separated by a thin silt seam from an underlying gravel with cobbles. The hole bottoms in clean fine gravel. This gravel also could not be worked because of the water line.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 65

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Vicinity of Tests #1 and #2 could be worked for gravel. Terrace is mapped by D. P. Stewart as outwash. The area south from Forest Dale toward the Pittsford Town Line may have been the site of kame terrace deposition. This area may also be within the kame terrace.
38	1A	1968	2-14	0-2	Yes	58.1	51.5	43.3	9.0	4.0	1	---	Gran. Borrow (Grav.)	Owner: George Churchill. Area is a wooded steep hillside on the east side of Town Highway No. 22 about 0.25 mile north of Vermont Route 73. A high pit has been opened in the west side of feature, mapped as kame moraine by D. P. Stewart. Test #1A from 2'-14' is fine or silty sand over a gravel with cobbles. The sample met grading requirements for Item 201, but too few proper-size stones were included for the wear test.
	1B	1968	14-28	---	Yes	84.9	69.1	59.4	11.0	5.0	1	---	Gran. Borrow (Grav.)	From 14'-23' is a pebbly sand with a few cobbles; from 23'-26' is gravel; from 26'-28' is fine sand. The bottom 18' of the face has excess slough to dig through. The sample had excess silt for Item 201 and too few proper size stones were included for

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 66

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														the wear test. The pit floor is about 50' east-west x 100' north-south. The pit face is 70' east of the road. An old woods road leads from the south up to the top of the pit. Atop the pit is the burial place of a pet dog - probably area would not be available as a source of construction materials. Material does not extend as far north as an old road leading east from Town Highway No. 22 (a distance of about 175').
39	1A	1968	1-5	0-1	No	100	98.6	93.2	40.1	12.0 11.2*	1½	---	---	Owner: R. F. Bird. Area is old pit vicinity and meadow behind owner's sawmill on the east side of Vermont Route 53. The pit was sampled as the C. E. Bird property in 1956. The meadow is located in kame moraine as mapped by D.P. Stewart. The meadow is flat. The old pit is located just behind the mill yard about 0.15 mile from the highway. Test hole #1 was dug 40' northeast of the north end of the pit. From 1'-5' was silty sand sampled as Test #1A. The sample had excess passing the #270 mesh sieve for Item 105.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 67

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				An additional sieve analysis follows: Passing #10 - 86.8% Passing #40 - 65.0% Passing #80 - 54.1% Passing #200 - 26.6%
	1B	1968	5-10	---	No	77.0	64.5	36.2	10.0	5.0	1½	7.8%	Gravel	From 5'-10' is a fine, but well-graded gravel that continues to below depth tested. It was sampled as Test #1B.
	2A	1968	1-5.5	0-1	No	100	94.4	87.8	35.1	14.0 12.3*	1	---	---	Test hole #2 was dug about 205' southeast of Test #1 on the east side of the meadow. The east edge of the meadow follows the foot of a wooded hillside and is the limit of granular material east of the highway. From 1'-5.5' is interbedded silts and pebbly sands that are unacceptable for Item 105. An additional sieve analysis follows: Passing #10 - 81.3% Passing #40 - 60.5% Passing #80 - 43.6% Passing #200 - 23.2%
	2B	1968	5.5-11	---	No	63.5	53.1	36.8	7.0	3.0	1½	8.0%	Gravel	From 5.5'-11', sampled as #2B was gravel becoming coarser and more cobbly with depth.
	3A	1968	1-4	0-1	No	100	99.0	92.6	44.4	17.0 15.7*	1½	---	---	Test hole #3 was dug 165' south of Test #2 on east side of meadow. From 1'-4' was silty sand sampled as Test #3A.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 68

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														An additional sieve analysis follows: Passing #10 - 84.6% Passing #40 - 68.2% Passing #80 - 50.0% Passing #200 - 24.5%
	3B	1968	4-10	---	No	61.8	48.9	32.9	6.0	2.0	1	10.8%	Gravel	Sample #3B was from 4'-10' and was of well-graded gravel with an occasional cobble.
	4	1956	2-10	0-2	Yes	63.4	52.1	35.7	10.0	5.0	3½	12.3%	Gravel	Tests #4 and #5 were taken on the north and east faces of the pit in 1956. The pit was about 200' north-south, and had 10-foot faces. Both samples met requirements for Item 201. Pit vicinity apparently had less overburden than either to the north or east.
	5	1956	2-10	0-2	Yes	62.3	33.1	13.8	6.0	2.5	3	12.8%	Gravel	
40	1	1968	1.5-8	0-1.5	No	56.1	45.3	28.5	4.0	1.0	1½	---	Gran. Borrow (Grav.)	Owner: Burton Baker. Area is woods northwest of Baker's large pit west of Vermont Route 53. Area is in mapped kame moraine and terrain is flat to rolling. The tests represent a north to northwest extension of the pit. Small hardwood saplings predominate over small pines in these woods. Test #1 was dug in trail through woods 575' west of the highway. The test is at point where terrain begins gentle slope down to north. The top 3' of hole is reddish

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 69

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														tan, silty and somewhat boul-dery. It is hard to dig. About 10% of stones exceed 6". The material caves easily below 3'. It looks pretty good, and has a few +6" stones. The sample met grading require-ments for Item 201, but too few proper-size stones were included for the wear test.
	2	1968	1.5-7	0-1.5	No	57.2	44.9	31.5	7.0	3.0	1	11.3%	Gravel	Test #2 was dug on woods trail 190' west of Test #1. Material is a sandy gravel with large cobbles in the top 3'. Below that the gravel is clean and fine. The stones are not well-rounded. There are some large boulders at about 6'. Continued caving below 7' pre-vented sampling below that.
41	1	1968	0.5-7	0-0.5	Yes	53.5	40.4	27.8	3.0	1.0	1½	9.8%	Gravel	Owner: Burton Baker. This is a large pit located about 350' west of Vermont Route 53, southeast of Map Ident. No. 40. It is in kame moraine as mapped by D. P. Stewart. Beyond narrow stripped areas on all but the south end, the pit is wooded all around. An east extension of the south part of the pit would be limi-ted by dwellings. Access into the pit is by roads from the southeast corner and the north end. The pit has a great many small to large boulders, that

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 70

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														seem to come mainly from a zone between 8' and 15' on the faces. Test #1 was dug about 300' northwest of Vermont Route 53 on the north side of the access road, 125' west of houses. The material is a quite stony gravel with a few small boulders. About 5% exceed 6". Top 3' is pebbly gravel. The hole kept caving and prevented sampling below 7'.
	2A	1968	1-9	0-1	Yes	60.3	43.9	32.3	6.0	2.0	1	8.0%	Gravel	Test #2A was sampled on upper south face 135' from west side. Near the top is a fine reddish gravel; from 5'-9' is a cobbly poorly sorted gravel.
	2B	1968	9-20	---	Yes	48.8	43.0	33.3	8.0	4.0	1	---	Gran. Borrow (Grav.)	From 9'-20' was sampled as Test #2B. From 9'-15' is reddish cobbly gravel; from 15'-20' is gray stony sand. About 30% of the interval from 5'-15' exceeds 6" in diameter. Too few proper-size stones were included for the wear test. The material smaller than 6" looks good. The south face is wooded and at its east end has a boulder dump.
	3	1968	0.5-8	0-0.5	Yes	53.5	46.0	28.4	6.0	3.0	2	4.9%	Gravel	Test #3 was dug atop west face of pit, north across narrow lobe and pit road from

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 71

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Test #2. The test is in stripped area, about 45' west of corner of pit face. The material is a good looking gravel with a few cobbles in the top 5'. A huge boulder prevented digging below 8'. The stripped area measures from 60'-75' in width for the length of the west face (230').
	4	1968	1-9	0-1	No	70.5	54.7	35.2	5.0	1.5	1	10.0%	Gravel	Test #4 was dug about 210' north of Test #3, 55' west of north end of pit at edge of stripped area. The material is a tan gravel with some cobbles and 1 or 2 small boulders. It is a fine gravel below 5' to at least 9'.
	5	1968	1-8	0-1	Yes	69.6	53.5	34.2	4.0	1.0	2	9.6%	Gravel	Test #5 was dug about 45' from east side of pit, 80' from north end. About 115' has been stripped atop the east face, but much of this stripped area is grown to small brush and brambles. From 1'-8' is mainly a fine gravel with a few cobbles. The test hole bottoms in the same.
	6A	1968	1-11	0-1	Yes	60.1	41.9	21.2	6.0	3.0	3½	5.4%	Gravel	Test #6A was sampled on top 11' of 35-foot north face. From 1'-8' is a fairly fine gravel with a few cobbles. From 8'-14' is a zone of cobbles and boulders.
	6B	1968	11-35	---	Yes	100	78.4	71.0	1.4	1.0 0.7*	1½	---	Sand	Test #6B included 3' of cobbly gravel and 21' of pebbly

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 72

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														very coarse sand. An additional sieve analysis follows: Passing #10 - 53.5% Passing #40 - 5.5% Passing #80 - 3.2% Passing #200 - 1.6% The face bottoms in pebbly or gravelly sand. The pit floor at the north end is about 8' lower than through the middle part of the pit.
	7A	1968	1-13	0-1	Yes	65.0	49.3	31.6	3.0	1.0	1½	8.6%	Gravel	Test #7 was taken on 30-foot high west face about 100' from north end. From 1'-9' is a cobbly gravel with a layer of pebbly sand and a layer of fine gravel. From 9'-13 is a boulder and cobble zone. The above was sampled as Test #7A.
	7B	1968	13-30	---	Yes	87.7	76.8	57.3	3.0	2.0	1	9.2%	Gravel	Test #7B consisted of bouldery and cobbly gravel from 13'-17' underlain by 11' of clean, sharp, gravelly sand or pebble gravel. Bottom 2' of face is gravel. Bedding is vaguely shown by pebbly concentrations. It dips to the northwest.
	8	1968	0.5-8	0-0.5	Yes	70.6	64.7	57.2	3.0	2.0	2	11.9%	Gravel	Test #8 was dug in floor at north end of pit. Layers of pebbly sand and fine gravel with very gentle northwest dip were sampled. Below 6' are a few angular cobbles and

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 73

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														boulders. The material is clean and sharp. This pit looks like a good source of Sub-base of Gravel, Item 201. The boulders, mainly from a layer between 8' and 15' on the faces, would have to be worked out of the way. The sand, from 11'-35' on the north face could be worked with the gravel from 1'-11' to give a material acceptable for Item 201.
	9	1958	1-15	0-1	Yes	63.4	52.7	29.9	4.0	1.75	1	15.0%	Gravel	Tests #9 and #10 were sampled on the west and southeast faces, respectively, by laboratory personnel in 1958. A south extension of this pit would be difficult because of the boulder dump and thick woods.
	10	1958	4-30	0-4	Yes	65.4	56.4	39.9	2.0	---	1	14.2%	Gravel	
42	1	1968	1.5-8.5	0-1.5	No	66.5	56.8	40.8	6.0	3.0	1	7.5%	Gravel	Owner: Burton Baker. This area is wooded west to southwest extension of the big pit. Its access is by road through south end of pit. The area drops off about 220' west of the pit. Test #1 was dug south of the road, 35' west of the pit. Log of Test: 0-1.5', overburden; 1.5'-4.5', pebbly gravel; 4.5'-8.5', cobbly gravel. The material caves very easily.
	2	1968	1.5-8	0-1.5	No	47.2	38.3	26.6	10.0	5.0	1	6.6%	Gravel	Test #2 was dug in the woods

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 74

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														road, 100' west of Test #1. Top 1.5' is very silty and bouldery; from 1.5'-8' is a cobbly gravel with a bouldery layer from 3'-4.5'. The material caves easily. About 15%-20% exceeds 6". The woods consist of small hardwoods with an occasional pine. The terrain slopes down to the west beyond Test #2 and the woods road ends.
43	1	1968	1-9	0-1	No	59.9	54.0	39.0	4.0	2.0	1½	---	Gran. Borrow (Grav.)	Owner: Herbert LaRock. Area is wooded, rolling terrain mapped by D. P. Stewart as kame moraine, lying between Vermont Route 53 and Spring Pond. This area is south of Map Ident. No. 42. Test #1 was dug in woods road about 200' from the east edge of the woods (about 450' west of the highway). Access is either straight in from the highway or in through the owner's dooryard and then northwest through a pine grove. The material in Test #1 is a bouldery tan gravel with a layer of pebbly very coarse sand at 6.5'. There appears to be some silty clay coating on the constituents. Too few proper-size stones were included for the wear test.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 75

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing* 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	2	1968	2.5-9	0-2.5	No	50.8	39.7	24.0	7.0	3.0	1½	10.0%	Gravel	Test #2 was dug in road 220' northwest of Test #1, and about 10' above its elevation. The material below 2.5' of cobbly silt is a very stony gravel with cobbles. About 10% exceeds 6". The material caves more easily than Test #1, and appears dusty rather than having the silty clay coating of Test #1.
	3	1968	1.5-9	0-1.5	No	51.4	45.0	32.0	7.0	3.0	1½	---	Gran. Borrow (Grav.)	Test #3 was dug about 200' west-southwest of Test #2, near west side of high, more-or-less flat area. The woods road about 50' beyond the test turns northwest and goes down a gentle slope toward Spring Pond. The material is a gravel with cobbles to 5' underlain by fine gravel. Too few proper-size stones were included for the wear test.
44	1	1968	1.5-10	0-1.5	No	69.7	58.5	46.8	2.0	1.0	1½	7.5%	Gravel	Owner: Herbert LaRock. Area is a pine grove west of owner's buildings. Access into Map Ident. No. 43 would be through this area. The pines are large and well spaced. Test #1 was dug 170' west of the garage and about 110' north of bank down to Town Highway No. 32 that runs along south and southwest side of

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 76

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														this area. Beds of gravelly sand and coarse sand were found from 1.5'-4', from 4'-7' is gravel with cobbles; from 7'-10' is fine gravel. The hole bottoms in coarse sand.
	2	1968	0.5-8	0-0.5	Yes	91.5	85.8	74.4	1.5	0.5 0.4*	1	---	Gran. Borrow (Sand)	Test #2 was dug in floor of very small pit about 85' west of Test #1. The floor is about 8' below level of woods. The material is a very coarse sand with pebbles that become larger and more numerous below 4'. The bedding is vague, but appears to be horizontal. The sample had excess +1½" stones for Item 202, Sub-base of Sand.
	3	1968	1-7.5	0-1	No	61.3	50.4	40.1	6.0	2.0	1½	11.2%	Gravel	Test #3 was dug at north side of pine grove about 150' northwest of Test #1. The material is gravel with a cobble zone at 5' and a boulder cobble layer at 7.5'. It caves very easily.
45	1A	1968	0-11.5	---	Yes	78.1	71.4	57.1	3.0	2.0	1-	8.8%	Gravel	Owner: Ayer Estate. This area is 12-acre lot atop the east face of the large Mohan (Shedd) pit. The west property line runs along the foot of the east face of the Mohan pit, so that any eastward extension of the Mohan pit would be on the Ayer property. There is a small pit

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 77

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				on this property located in the northeast part of the tract. The property north of Ayer's is owned by Bird; Herbert LaRock owns to the east. The area is within outwash as mapped by D. P. Stewart and is separated by a low, north-south oriented wooded area, containing Spring Pond, from terrain sampled in Map Ident. Numbers 41 through 44. It appears from the topography that this area and the following four Map Ident. Numbers are in a kame moraine bordering outwash to the west and south. Test #1A was sampled from top of 33-foot east face of Mohan pit, about 150' north of the Ayer Estate's south property line. Beds of pebbly sand and fine gravel with occasional small cobbles were encountered.
1B	1968	11.5-19	---	Yes	100	93.4	77.4	1.5	1.5 1.2*		1-	---	Sand	Test #1B from 11.5'-19' was of pebbly coarse sand with an occasional small cobble. In places there is very minor cementation. An additional sieve analysis follows: Passing #10 - 51.4% Passing #40 - 6.3% Passing #80 - 2.4% Passing #200 - 1.2%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 78

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	1C	1968	19-30	---	Yes	100	100	96.6	1.9	1.0*	1	---	Sand	Test #1C was sampled from 19' to within 3' of the floor at a point about 50' north of Test #1B. The sample was taken here because Ralph Hathaway, who had leased the Ayer Estate material, was working the face at this point, and had exposed the sand. From 19'-22' was pebbly very coarse sand; from 22'-28' was coarse sand; from 28' to floor was fine sand, the bottom 3' of which was concealed by slough. Bedding is very evident, dipping to the southwest. An additional sieve analysis follows: Passing #10 - 87.7% Passing #40 - 20.7% Passing #80 - 2.8% Passing #200 - 0.7%
	2A	1968	2.5-20	0-2.5	Yes	100	99.1	86.0	2.6	1.0 0.9*	1-	---	Sand	Test #2A was sampled on 65-foot east face of Mohan pit on the corner formed by the high face and a sloughed 18-foot bank extending for 95' east of the high face. The woods come down to the very top of the faces. The sand in Test #2A is clean, very coarse and pebbly. The overburden varies from 2'-3'. There is much slough on the east face north of the test. The woods would

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 79

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														have to be cleared to extend the face and it would probably be well to work the top 20' or so from the south and east rather than from the floor of the Mohan pit to avoid having too high a face. An additional sieve analysis follows: Passing #10 - 57.2% Passing #40 - 7.7% Passing #80 - 2.6% Passing #200 - 1.1%
	2B	1968	20-31	---	Yes	100	97.5	94.6	1.9	1.0 0.9*	1-	---	Sand	Test #2B was sampled from 20'-31' below Test #2A. Coarse sand continues. The lower face has excess slough to dig through, but is probably represented by Test #1C. An additional sieve analysis follows: Passing #10 - 58.7% Passing #40 - 7.1% Passing #80 - 2.4% Passing #200 - 1.2% The east face north of Test #2A rises 12'-15', and slough and vegetation increases northward on the face. The higher terrain northeast of Test #2A may represent a local depositional site and the southwest dip of the sands of Test #1C indicate an origin to the northeast.

*Percentage of Total Sample.

TABLE I

BRANDON GRANULAR DATA SHEET NO. 80

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	3	1968	1.5-14.5	0-1.5	Yes	58.2	47.5	18.2	15.0	8.0	1	11.0%	Gran. Borrow (Grav.)	Test #3 was sampled on upper part of 28-foot face of small pit in northeast part of property. The pit is 30' east-west x 100' north-south. Reportedly it is 150-200' from the north property line. The pit extensions are wooded. There are many cobbles and boulders around the floor and there are 2 or 3 boulders on the badly sloughed faces. From 1.5'-5.5' is a very stony fine gravel with sub-angular stones and minor sand. From 5.5'-14.5' is gravel with sub-rounded stones and some large cobbles. Overall, a sandy gravel. The bottom of the face has much slough.
	4	1968	3-11	0-3	No	100	97.5	92.7	12.1	3.0 2.8*	1	---	Sand	Test #4 dug in east edge of stripped area 120' east of Test #1A, 240' south of north face of small pit. The top 3' is probably incomplete stripping. From 3'-8.5' are interbeds of fine and coarse sand; from 8.5'-11' is pebbly coarse sand. This test represents eastward extension of material in Test #1A (and a grading change from gravel to pebbly sand). An additional seive analysis follows: Passing #10 - 75.0%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 81

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														Passing #40 - 33.6% Passing #80 - 14.1% Passing #200 - 4.5%
	5	1968	2.5-19	0-2.5	Yes	74.2	56.8	26.7	4.0	1.0	1	10.6%	Gravel	Test #5 was sampled on northeast face of small pit. The top 4' is silty gravel over 15' of loose gravel with a few boulders. There are some 3-5" cobbles. The gravel looks good.
	6	1968	0.5-6.5	0-0.5	Yes	80.4	59.2	27.2	5.0	3.0	1	13.8%	Gravel	Test #6 was dug in east side of pit floor about 25' south of Test #5. The material is a very loose, very stony gravel with a few boulders. It caves so easily that it was dug only to 6.5'. The gravel appears to be a little finer below 5'. The upper, north part of the Ayer tract would be source of gravels. Lower elevations, represented by Tests #1B, #1C, and #4, are a source of sand. At the time sampled this area was being worked. Access would be around south end of Mohan pit, a total distance of about 0.52 mile from Town Highway No. 18.
46	1A	1968	0.5-14	0-0.5	Yes	100	100	97.9	15.7	4.0 3.9*	1	---	Sand	Owner: Mrs. Hazel Mohan. (Former Shedd Pit) This is a large pit whose floor rises in its north end to keep above bedrock and clay. Its east face is actually on

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 82

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	1B	1968	14-22	---	Yes	100	98.0	94.0	3.8	1.5 1.4*	1-	---	Sand	

*Percentage of Total Sample

the Ayer Estate. There is a pond in the middle of the pit floor and the south end of the lower pit floor is wet.

Test #1 was sampled on the pit face in the northwest corner just north of the access road into the north part of the pit. The face is about 29' high. Interbedded coarse and fine sands were sampled from 0.5'-14' as Test #1A. Beds are horizontal.

An additional sieve analysis follows:

Passing #10 - 93.8%
Passing #40 - 49.5%
Passing #80 - 20.9%
Passing #200 - 5.2%

Test #1B is mainly coarse sand with pebbles. The bottom 7' has much slough.

An additional sieve analysis follows:

Passing #10 - 84.4%
Passing #40 - 22.6%
Passing #80 - 6.0%
Passing #200 - 1.7%

Test #1A and #1B probably represent a westward extension of the north part of the pit. There is a shallow swale about half-way between this pit and Map Ident. No. 47, which probably marks west limit of the

TABLE I

BRANDON GRANULAR DATA SHEET NO. 83

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														type of deposit sampled in Test #1A-1B. No tests were allowed in the meadow west of the pit.
	2A	1968	0.5-11.5	0-0.5	Yes	100	98.5	92.6	1.9	0.5 0.45*	1	---	Sand	Test #2A was sampled on upper part of lower north face of pit. The pit floor rises somewhat above its level where the pit road is located. It rises probably to stay above clay or till. The face is 18' high. The top 11.5' is clean, pebbly very coarse sand. An additional sieve analysis follows: Passing #10 - 75.3% Passing #40 - 15.4% Passing #80 - 5.9% Passing #200 - 1.7%
	2B	1968	11.5-22	---	Yes	100	100	93.2	1.9	1.0 0.9*	1-	---	Sand	Test #2B was sampled on the lower face and continued in the floor. The sand is clean, coarse and pebbly. An additional sieve analysis follows: Passing #10 - 62.8% Passing #40 - 6.1% Passing #80 - 2.2% Passing #200 - 1.2%
	2C	1968	22-26	---	Yes	100	90.7	76.3	2.3	1.5 1.1*	1-	---	Sand	Test #2C was sampled from floor below Test #2B beginning at a very coarse pebbly sand layer. It bottoms at 26' below the top of the north face

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 84

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														in boulder clay. These tests represent the lower material in a 275' wide (east-west) north extension.
	3A	1968	1-14	0-1	Yes	100	100	95.0	21.9	7.0 6.7*	1	---	Gran Borrow (Sand)	Test #3A was sampled on upper west face of pit about half-way along. Test is across from Test #1A of Map Ident. No. 45, and is above north end of small pond in pit floor. The material is fine sand from 1'-5' underlain by coarse sand from 5'-14'. There are a few small pebbles.
	3B	1968	14-25	---	Yes	100	100	95.0	2.9	1.0*	1-	---	Sand	Test #3B from 14'-25' on the 25-foot face, was of pebbly coarse sand bottoming in the same material. An additional sieve analysis follows: Passing #10 - 77.4%; Passing #40 - 11.0%; Passing #80 - 2.5%; Passing #200 - 1.0%. These two tests represent the material in a west extension of the pit.
	4A	1968	2-13	0-2	Yes	100	100	98.0	34.3	13.0 12.7*	1	---	---	Test #4 was sampled on 18-foot face in southwest corner of the pit. The test is about 100'-125' south of the pond and is on a corner of the pit face formed by the 150-foot north-south x 150-foot east-west south extension of the

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 85

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														old pit. This recent extension has a floor about 12' above the floor of the old pit and it has been stripped from the southwest around to the east. Test #4A was of beds of silty sand to 5', pebbly fine sand from 5'-13'. Overall the material is a silty sand unacceptable for Item 105. This test represents the material in the extension of the recently opened section;
	4B	1968	13-18	---	Yes	100	100	89.0	2.6	1.0 0.8*	1	---	Sand	Test #4B represents the floor material remaining in the 150-foot x 150-foot recently opened section. The material is pebbly coarse sand, acceptable for Item 202. An additional sieve analysis follows: Passing #10 - 67.0% Passing #40 - 9.7% Passing #80 - 4.0% Passing #200 - 2.0%
	5	1968	1-21	0-1	Yes	100	100	95.4	19.1	5.0 4.8*	1-	---	Gran. Borrow (Sand)	Test #5 was dug on face in southeast lobe of south part of pit. Log of Test: 0-1', overburden; 1'-8', cross-bedded coarse and fine sand with pebbles and a silt seam; 8'-13.5', silty sand; 13.5'-21', pebbly very coarse sand. An additional sieve analysis follows:

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 86

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Passing #10 - 78.8% Passing #40 - 44.6% Passing #80 - 25.7% Passing #200 - 9.4%
	6	1968	0.5-13	0-0.5	No	100	100	100	41.0	22.0*	1	---	---	Test #6 was dug 100' south of Test #5 off southeast corner of pit. From 0.5'-2' is coarse sand; from 2'-7' is silty sand and fine sand; from 7'-13' is fine sand bottoming in the same material. An additional sieve analysis follows: Passing #10 - 88.8% Passing #40 - 66.4% Passing #80 - 46.7% Passing #200 - 28.0% It appears that the sands in a southeast to west extension of the south part of the pit are very fine and would not generally meet the specifications for Granular Borrow, Item 105.
	7	1968	0.5-10	0-0.5	No	100	100	100	32.0	21.0*	1-	---	---	Test #7 was dug at intersection of field roads, 110' west of central part of pit. The material is a silt down to 4' over interbedded fine sand and silt. Silty clay hit at 10'. This test indicates that a west extension of the central part of the pit would encounter material unacceptable for highway use.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 87

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	8	1968	1-8	0-1	Yes	100	100	95.9	3.8	1.0*	1-	---	Sand	Test #8 was sampled about 90' north of Test #2A on highest level at north end of pit. The material is coarse gray sand with pebbles. Beds have westerly dip (towards the meadow), and some small slumps in the bedding were noted. The sand looks good and continues the same below the depth tested. A west extension of the north part of the pit and a north extension would have sands acceptable for Item 202. An east extension is on Ayer Estate property.
	9	1961	2-8	0-2	Yes	69.3	59.6	45.8	4.0	1.75	2	---	Gran. Borrow (Grav.)	In 1961 a sample was taken in the southeast corner of the pit by Laboratory personnel. Its location probably was near Test #1A of Map Ident. No. 45.
47	1A	1968	2-9	0-2	Yes	82.3	78.5	65.4	4.0	2.0	1½	---	Gran. Borrow (Grav.)	Owner: Mrs. Hazel Mohan. (former Shedd Farm) This area is old grown-in pit on the north end of the meadow. It is wooded all around and trees grow around the pit floor and on the faces. Overburden varies from 2'-2.5' and the faces are badly sloughed. The east side of the pit area was used as a cobble dump that extends to the edge of the meadow. Test #1A was sampled on top

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 88

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														of 18-foot northwest face, 40' from the southwest end of the pit. The pit trends north-east-southwest; it is 180' long x about 60'-80' wide. Top of the face is silty and pebbly sand going to fairly clean gravel from 3'-9'. The lower part of the face is fine gravel or gravelly sand, but is concealed by slough. The sample had too few stones for Item 201.
	2A	1968	2-13	0-2	Yes	90.7	82.9	61.6	5.0	3.0	1½	---	Gran. Borrow (Grav.)	Test #2A was dug on northwest face of pit in the large lobe at its northeast end. The face is about 32' high. The material from 2'-4' is a fine gravel with mainly sub-angular pebbles over a clean gravel with a few sub-angular stones from 4'-13'. The sample had too few stones for Item 201.
	2B	1968	13-21	---	Yes	94.0	81.3	52.9	5.0	2.0	1	10.2%	Gravel	From 13'-21' is gravel and gravelly sand sampled as Test #2B.
	2C	1968	21-29	---	Yes	61.5	53.0	33.9	5.0	2.0	1-	10.0%	Gravel	Test #2C was sampled from beds of very loose fine gravel and a cobble gravel layer. A composite of face would meet requirements for Item 201. There are some boulders and fallen trees on the faces of this lobe in 2 or 3 places. The top of the faces is wooded

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 89

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														right to the edge.
	3	1968	1-10	0-1	Yes	60.8	55.1	44.3	2.0	0.5	1-	---	Gran. Borrow (Grav.)	Test #3 was dug in floor at northeast end of pit. Beds of fine gravel and gravelly sand have a gentle southwest dip. Below 4.5' the gravel is a little coarser. Overall, it looks good and is very clean, but too few proper-size stones were included for the wear test.
	4	1968	1-8.5	0-1	Yes	67.3	58.0	42.8	3.0	1.5	1-	---	Gran. Borrow (Grav.)	Test #4 was dug in floor near southwest end of pit. The material is clean gravelly sand, fine gravel, and coarse sand. The beds dip southeast. The material sounds hard and looks good. Piles of cobbles prevented sampling bottom of faces in southwest end of pit. Extension of pit would be to north or northwest and would require clearing the trees, most of which are small to medium hardwoods. Gravel marginal on stone content probably occurs in a north extension of the southwest part of the pit.
48	1	1968	1.5-20	0-1.5	Yes	100	97.2	84.7	11.0	4.0 2.6*	1-	---	Sand	Owner: Mrs. Hazel Mohan. This is shallow old pit area north of Map Ident. No. 46. Its lowest level is a little below the elevation of Map Ident. No. 46, Test #8,

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 90

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														and is a narrow, 110' long (north-south) pit 90' west of Test #3. The floor of the pit is on a level with the meadow's northeast corner. The access into the higher levels of this area leads up from the meadow past the east side of the narrow pit. Test #1 was a sample on its 22-foot northwest face. The top 10' is interbeds of pebbly sand and silt. The bottom 10' or 11' is a coarse clean sand with pebbles. The extension of this pit is north, and a low face 55' north of Test #1A shows stony sand, indicating a coarser grading above and north of the sand.
	2	1968	0.5-9	0-0.5	Yes	100	92.3	85.5	13.7	5.0 4.3*	1½	---	Sand	Test #2 was dug in floor of 75-foot x 35-foot diggings, 165' north of Test #1. The faces of this lobe are from 5'-7' high and their east and north extensions are wooded. The east extension is into a wooded ridge or hill. A few cobbles and a boulder are lying around the floor. The material in the test is stratified pebbly coarse sand, coarse sand, and gravelly sand. Some ripple marks and some small faults, indicating shallow water deposition or working, and

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 91

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														subsequent slumping were noted. An additional sieve analysis follows: Passing #10 - 83.8% Passing #40 - 34.2% Passing #80 - 21.9% Passing #200 - 11.1%
	3A	1968	1-7.5	0-1	Yes	78.2	65.1	37.9	5.0	1.0	1	---	Gran. Borrow (Grav.)	Test #3A was sampled on 7-foot face opened in a quite gravelly zone about 160' east-west x 70'-90' north-south. The test is 170' from the east edge of the pit area, and 70' from the south edge. A north extension of the face has cobble piles, trees, and brush for about 175' to the north edge of the area. The material in Test #3A from 0.5'-7.5' is well-bedded stony sands and gravels. The beds dip south. Too few proper-size stones were included for the wear test.
	3B	1968	7.5-15.5	---	Yes	78.5	66.6	44.2	2.0	1.0	1-	7.0%	Gravel	Test #3B was dug in floor below Test #3A. Material is gravel and gravelly sand with an occasional cobble. Its wear was quite low and it is expected that that of Test #3A would be also.
	4	1968	1-8	0-1	Yes	67.3	53.0	35.7	4.0	2.0	1-	8.6%	Gravel	Test #4 dug in older, northwest part of pit area 140' north 55° west of Test #3A. There are 8-foot faces around

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 92

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														this part of the pit and their extensions are wooded. The top of the faces look sandy with a few boulders. The area of gravel represented by Test #4 is about 175' northeast-southwest x 170' northwest-southeast. Numerous piles of strippings and trees would have to be pushed aside to work the gravel. The material in Test #4 is clean interbedded fine and cobbly gravels that cave easily. About 5% of stones exceed 6".
	5	1968	2-9	0-2	Yes	68.0	58.8	44.0	10.0	6.0	1	13.6%	Gran. Borrow (Grav.)	Test #5 was sampled on 9-foot face of northwest part of area, 60' west of Test #4. The top 3' is overburden and fine or silty sand and pebbly sand. From 3'-9' is sandy gravel with sub-angular cobbles and 1 or 2 boulders.
49	1	1968	1.5-10	0-1.5	No	73.5	55.8	34.6	10.0	5.0	1	10.6%	Gravel	Owner: Lucian Atwood. This area is old pit and thinly wooded vicinity located northwest to north of Map Ident. Numbers 47 and 48. It is probably in a kame moraine. The present access is north along the west side of the Mohan property for about 0.73 mile from Town Highway No. 18. Possibly an access could be built straight in from Town Highway

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 93

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														No. 18 over a rock controlled ridge. The pit is very irregular and was worked by hand. Its north face is 150' from the property to the north. The pit is about 250' east-west x a maximum of 75' north-south. Its faces vary from 6'-8' high on its south side to 16' on its north side. Test #1 was dug 125' north of pit between pasture road and north property line. The material is gravel with a thin silt seam. There are a few +6" stones. The hole bottoms in coarse gravel.
	2	1968	1-9	0-1	No	90.9	81.4	58.7	6.0	3.0	2	8.6%	Gravel	Test #2 was dug 190' south 70° east of Test #1. South-dipping beds of fine gravel with few +3" stones were sampled. The hole bottoms in fine gravel. This test represents northeast extension of pit. The test was dug in brushy and bushy area with woods lying to the east.
	3	1968	1-8.5	0-1	No	76.7	67.5	47.8	6.0	3.0	2½	---	Gran. Borrow (Grav.)	Test #3 was dug on a rounded opening in the brush and trees 225' south of Test #2 and 50' east of the pit. The material is fine loose gravel with few +3" cobbles. There was a boulder at 8.5'. The hole bottoms in fine gravel

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 94

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	4	1968	1.5-7	0-1.5	Yes	100	90.6	79.4	3.2	1.5 1.2*	1	---	Sand	with a few cobbles. This test represents east extension of pit in wooded low knolls of kame moraine. Test #4 was dug 225' west of Test #3, 35' south of south pit face. This test represents south extension of pit in flat but hummocky area bounded on the west by a rock ridge, and on the south and east by low wooded knolls or ridges of probably granular material. Log of Test: 0-1.5', overburden; 1.5'-4.5', pebbly or gravelly sand; 4.5'-7', coarse sand (a huge boulder at 5'). An additional sieve analysis follows: Passing #10 - 66.6% Passing #40 - 16.0% Passing #80 - 5.1% Passing #200 - 2.3%
	5	1968	1.5-14	0-1.5	Yes	54.1	45.8	29.5	9.0	5.0	2	9.2%	Gravel	Test #5 was a face sample in the northwest corner of the pit. From 1.5' to 3.5' is a silty pebbly sand over a very loose gravel with a 3-foot bed of gravelly sand at 8'. The face bottoms in gravel with cobbles. The material looks pretty good.
	6	1968	N O T S A M P L E D											A floor test encountered 3' of stony sand bottoming on bedrock or big boulders.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 95

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
50	1A	1968	1-4.5	0-1	No	100	100	100	54.0	10.0*	1-	---	Gran. Borrow (Sand)	Owner: Mrs. Helen Malinowski. This area is pasture with low knolls on the east side of Town Highway No. 18, just south of the Leicester Town Line. The area is open, but is fringed with small trees. A north access goes through an old auto dump; the south access is by a camp road and up onto south knoll of the area. The area has been designated as kame moraine by D. P. Stewart. A power line is located along the west side of the pasture knolls. Test hole #1 was dug on large knoll about 400' north of intersection of town highway and camp road. From 1'-4.5' is very fime or silty sand, sampled as Test #1A. It met Item 105 requirements. An additional sieve analysis follows: Passing #10 - 99.6% Passing #40 - 95.2% Passing #80 - 72.8% Passing #200 - 24.2%
	1B	1968	4.5-9.5	---	No	63.1	47.2	33.1	10.0	2.0	2½	7.8%	Gravel	From 4.5'-9.5' was a good looking fine gravel with an occasional small cobble, bottoming in a very cobbly gravel. An area of about 215' east-west x about 150' north-south on this knoll is estimated to

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 96

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														have gravel probably covered by material similar in type and thickness to that of Test #1A.
	2	1968	1-9.5	0-1	No	57.1	47.3	40.2	24.0	9.0	1	---	Gran. Borrow (Grav.)	Test #2 was dug 175' northwest of and 8'-10' below Test #1 on flat area. From 1'-4.5' is gravel; from 4.5'-9.5' is a stony sand with some cobbles and boulders.
	3	1968	N	O	T	S	A	M	P	L	E		D	Test #3 was dug 90' northwest of Test #2 on tree-fringed north slope of pasture knoll. The material is poorly sorted silt and cobbles to at least 6'. No sample was taken. This area is probably a source of limited amounts of gravel. A bottom of glacial till probably rises from north to south.
51	1	1968	1.5-10	0-1.5	No	100	100	100	57.0	10.0*	1-	---	Gran. Borrow (Sand)	Owner: Robert Mitchell. This is a wooded area mapped by D. P. Stewart as kame moraine, located on the southwest side of Town Highway No. 18 just south of the Leicester Town Line. An access by woods road from the southeast is about 0.32 mile. There possibly is an access from the north beginning in Leicester. The area was being lumbered at the time sampled. Test #1 was dug in a small clearing on the southwest side of the main woods road about

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 97

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														575' northwest of the road into Map Ident. No. 52. The material is fine sand. An additional sieve analysis follows: Passing #10 - 99.0% Passing #40 - 95.8% Passing #80 - 72.2% Passing #200 - 26.4%
	2	1968	1-11.5	0-1	No	100	100	100	52.0	16.0*	1	---	---	Test #2 was dug in large cleared area about 380' northwest of Test #1. The material is fine or silty sand with occasional silt seams. It has excess passing the #270 mesh sieve for Item 105. An additional sieve analysis follows: Passing #10 - 98.3% Passing #40 - 83.2% Passing #80 - 63.7% Passing #200 - 30.2% The terrain in this area is rolling with knolls and ridges. The area might be a source of Item 105, Granular Borrow, once it were cleared, and if it were available.
52	1	1968	0.5-11	0-0.5	Yes	91.2	75.5	51.9	8.0	2.0	1-	7.0%	Gravel	Owner: Robert Mitchell. Area is recently opened pit at the foot of the east side of Lion Hill, a short distance southwest of Town Highway No. 18. Access into the area involves about 0.15 mile of haul road. The pit is in kame moraine

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 98

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														as mapped by D. P. Stewart. Pit is 110' x 95' and has a narrow lobe opened on its upper west side extending for 80' back up the gentle slope. An area about 160' east-west x 200' north-south has been stripped to the west and northwest of the pit. Test #1 was sampled on south face of the narrow lobe, near its west (upper) end. The upper end of this lobe is about 37' above the pit floor. The material on the 11-foot face is fine gravel, cobbly gravel, and pebbly sand.
	2	1968	0-10	---	Yes	79.0	73.0	56.6	5.0	1.5	1	9.3%	Gravel	Test #2 was taken on 12-foot west face of pit below the narrow lobe. The material is interbedded pebbly sand and cobbly gravel.
	3	1968	0.5-9.5	0-0.5	Yes	100	99.5	96.6	19.3	3.0 2.9*	2	---	Gran. Borrow (Sand)	Test #3 was dug in pit floor. Material is fine and coarse sands with pebbles, bottoming in pebbly sand. An additional sieve analysis follows: Passing #10 - 95.2% Passing #40 - 77.1% Passing #80 - 32.8% Passing #200 - 6.9%
	4	1968	2-10	0-2	No	100	100	98.8	37.0	5.0 4.9*	1-	---	Gran. Borrow (Sand)	Test #4 was dug in northwest corner of stripped area about 140'-150' northwest of the

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 99

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														pit. The material is very fine sand under 2' of silt and stones. The hillside southwest of Test #4 looks stony; the vicinity of the test is sandy. At 10' in the test hole is pebbly sand or fine gravel. The test is 9'-10' above the pit floor. An additional sieve analysis follows: Passing #10 - 95.9% Passing #40 - 81.4% Passing #80 - 50.4% Passing #200 - 12.0%
	5	1968	2-10	0-2	No	100	100	100	40.0	13.0*	1-	---	---	Test #5 was dug at junction of pit road with woods road, about 175' east-north east of the pit and 12'-15' below the pit floor. A large area east of the woods road has been cleared as though for building lots. The material in the test is moist fine sand with silt seams. An additional sieve analysis follows: Passing #10 - 98.4% Passing #40 - 83.8% Passing #80 - 47.6% Passing #200 - 17.1% Other knolls similarly placed against the hillside as the one in which the pit had been opened, were inaccessible to testing because of trees.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 100

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														There are possibly some more gravels along the hillside. Sands, found farther east or northeast, appear to be very fine. Those in the pit floor and near Test #4 would probably meet requirements for Granular Borrow.
53	1	1968	1-11	0-1	No	100	100	100	73.0	17.0*	1-	---	---	Owner: Robert Mitchell. One test hole was dug in a woods road about 300' east of Map Ident. No. 52. Across the woods road from the test is a cleared knoll that looks like a house site. Some logging had been done south to south-west of and above the test, but the terrain is inaccessible to the backhoe. The material is very fine sand with silt laminae. The test is 500'-600' west of Town Highway No. 18. An additional sieve analysis follows: Passing #10 - 96.8% Passing #40 - 85.4% Passing #80 - 80.7% Passing #200 - 29.0%
54	1A	1968	0-12	---	Yes	100	94.9	83.5	2.5	1.0 0.0*	1-	---	Sand	Owner: Lucian Atwood. Area is a small wooded knoll with a pit on its east side, 40' west of Town Highway No. 18. This area is south of Map Ident. No. 53, and is 300'-350' southwest of a marshy area.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 101

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														The material represented by the tests is probably confined to an area 180' north-south x about 100' east-west. The feature is in a kame moraine as mapped by D. P. Stewart. Test #1A was on rounded top of pit face. For 12' vertically the material is fine, coarse, and pebbly sands. There are a very few +1½" pebbles. An additional sieve analysis follows: Passing #10 - 78.5% Passing #40 - 22.8% Passing #80 - 4.1% Passing #200 - 1.1%
1B	1968	12-23.5	---	Yes	88.4	87.2	80.2	2.4	1.0 0.8*	1-	---	Gran. Borrow (Sand)	Test #1B was from 12' to 23.5' in beds of fine and pebbly sand with some +1½" stones. An additional sieve analysis follows: Passing #10 - 80.4% Passing #40 - 27.5% Passing #80 - 7.5% Passing #200 - 2.1%
1C	1968	23-40	---	Yes	92.9	86.0	75.3	3.8	0.5 0.4*	1	---	Gran. Borrow (Sand)	The bottom 17' of the face was layers of sand and pebbly sand from 23'-33' underlain by 7' of partially cemented pebbly or gravelly sand. The face bottoms in gravelly sand.
2	1968	0.5-8.5	0-0.5	Yes	84.9	75.4	61.4	9.0	2.0	1	8.2%	Gran. Borrow (Grav.)	Test #2 was dug in 100-foot long floor, 20' from road. The material is a tan, fine

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 102

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	3	1968	2-9.5	0-2	Yes	100	99.1	92.9	7.4	1.0 0.9*	1	---	Sand	gravel with some +3" stones. It is wet at 8' and is still in gravel. The sample had too few stones for Item 201. Test #3 was dug on west edge of flat top of knoll, about 80' back from pit face. Access up to the top is by a woods road leading up around the south side of the knoll. The top of the knoll is cleared; its flanks are wooded. From 2'-9' is interbedded pebbly and fine sands continuing below the depth tested. It is acceptable for Item 202. An additional sieve analysis follows: Passing #10 - 81.0% Passing #40 - 37.3% Passing #80 - 13.5% Passing #200 - 3.4% Sands in this knoll would generally have to be screened to be used as Item 202, Sub-base of Sand. They have excess +1½" pebbles.
55	1A	1968	1-12	0-1	Yes	79.9	66.7	47.6	5.0	2.0	1	19.2%	Gravel	Owner: Mrs. Hazel Mohan. This is long pit and vicinity located west and southwest of Map Ident. No. 47 in the northwest part of the former Shedd farm. The pit trends northeast-southwest and is about 375' long x 60'-100' wide. Its south to southwest extension

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 103

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														has been cleared, but not stripped. Its west to north extension is wooded. Its northeast end is only 40' from Map Ident. No. 47. Access to the pit is along the west side of the meadow for about 0.35 mile from Town Highway No. 18. Tests #1A and #1B were sampled on northwest face of the pit that is about 30' high. From 1'-8' seems to be a sandy fine gravel with a few cobbles; from 8'-12 is clean gravel.
	1B	1968	12-20	---	Yes	66.2	60.7	49.4	3.0	1.0	1	11.4%	Gravel	From 12'-14' is pebbly sand overlying at least 6' of fine gravel continuing beneath too much slough to dig through. It was sampled as Test #1B. Northwest face shows angular cobbles and boulders that seem to come mainly from near the top.
	2A	1968	2-14	0-2	Yes	67.9	58.2	43.4	6.0	2.0	1	15.4%	Gravel	Test #2A dug on 18-foot face at southwest end of pit. Here the pit is about 30' wide. From 2'-4' the material is sandy cobbly grave from 4'-14' is fine gravel and pebbly sand.
	2B	1968	12-18	---	Yes	65.4	58.4	53.4	2.0	1.0	1	8.0%	Gravel	Test #2B included 2' of Test #2A and the bottom 4' of the face which was stratified sand and gravel. The test was continued into the floor where

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 104

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														nested cobbles and hard packed stony sand were found. Probably it is at or near the bottom of the deposit. Generally speaking, the northwest face appears to be more gravelly toward the northeast end of the pit.
	3A	1968	2-13	0-2	Yes	42.6	36.4	27.5	7.0	4.0	1-	---	Gran. Borrow (Grav.)	Test #3A was sampled on upper face in northeast corner of pit. It represents the north to northeast extension. From 2'-4' are beds of pebbly sand; from 4'-13' is fine to cobbly gravel with a boulder and cobble layer from 8'-11'. There is also one pocket of boulders near the test from about 4'-11' on the face. The sample met grading requirements for Item 201, but too few proper-size stones were included for the wear test.
	3B	1968	13-29	---	Yes	47.6	40.4	25.1	3.0	1.0	1-	7.4%	Gravel	From 13'-29' are beds of clean fine gravel and cobbly gravel, including a boulder and cobble layer from 17'-19'. The bottom 5' or 6' of the 30-foot face is fine gravel. The stones sound hard and the gravel looks good.
	4	1968	0.5-8.5	0-0.5	Yes	61.0	49.7	35.0	5.0	2.0	1-	7.3%	Gravel	Test #4 was dug in the pit floor 65' from the northeast end. The material looks clean and overall about 5%-10% of the stones exceed 6". From

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 105

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														4'-9' are no boulders, but cobbles continue. There are boulders in the bottom. The material caves quite easily.
	5	1968	2-10	0-2	No	100	100	98.3	5.9	4.0 3.9*	1	---	Sand	Test #5 was dug 150' south of pit in cleared area near intersection of field roads. Under 2' of cobbles and sand is a coarse sand with pebbles. The material has a gentle southerly dip and continues below 10' as pebbly coarse sand. An additional sieve analysis follows: Passing #10 - 85.2% Passing #40 - 17.5% Passing #80 - 5.0% Passing #200 - 2.5% This test indicates that a south extension of the pit would run to sand.
	6	1968	1.5-9.5	0-1.5	No	100	92.2	81.7	3.3	2.0 1.6*	1	---	Sand	Test #6 dug about 150' west of southwest end of pit near southwest corner of cut-over area. The test is beside field road up east side of narrow meadow. The material is fine sand with pebbly sand beds from 5'-7' and coarse sand below that. The sand looks good. An additional sieve analysis follows: Passing #10 - 79.5%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 106

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	7	1968	1.5-8.5	0-1.5	No	47.3	40.9	25.9	11.0	5.0	1½	12.7%	Gravel	Passing #40 - 24.1% Passing #80 - 5.2% Passing #200 - 2.4% Test #7 was dug in thinly wooded area 100' west of Test #1A, and 175' northeast of Test #6. The width of the thinly wooded area is about 200' to 220' east-west. Some trees and many stumps remain near Test #7. The material is a reddish gravel with mainly sub-angular stones, some of which are cobble and boulder-size. This test represents a west to northwest extension of the central part of the pit. This area would be a good source of gravel and sand for highway use.
56	1	1968	0.5-11.5	0-0.5	Yes	100	100	100	5.0	1.0*	1-	---	Sand	Owner: Mrs. Hazel Mohan. This area is a stripped clearing containing a small pit located on the west side of the former Shedd meadows, about 0.25 mile northeast of Town Highway No. 18. The material is probably outwash sand whose west extension is limited by a rock ridge. The pit is 75' north-south x 40' east-west and has 6' to 8' faces. Test #1 was dug in pit floor. Beds of eastward-dipping fine to coarse sands were sampled.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 107

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														An additional sieve analysis follows: Passing #10 - 96.1% Passing #40 - 36.4% Passing #80 - 8.2% Passing #200 - 2.9%
	2	1968	0.5-10.5	0-0.5	No	100	100	98.9	4.9	2.0*	2	---	Sand	Test #2 was dug on upper (west) side of cleared area, 75' west of the pit. The test is about 16' above Test #1. From 0.5'-5' is coarse sand with a boulder at 4', from 5'-10.5' is a fine sand seam over coarse sand.
														An additional sieve analysis follows: Passing #10 - 91.5% Passing #40 - 26.2% Passing #80 - 8.0% Passing #200 - 2.7%
	3	1968	1-7	0-1	Yes	100	100	100	20.0	6.0*	1	---	Gran. Borrow (Sand)	Test #3 was dug on 7-foot southwest face of pit. From 1'-4' is silty sand or silt; from 4'-7' is clean coarse sand.
														An additional sieve analysis follows: Passing #10 - 99.5% Passing #40 - 56.5% Passing #80 - 30.7% Passing #200 - 13.7%
57	1	1968	1.5-11.5	0-1.5	No	100	100	99.2	62.5	35.0 34.7*	1	---	---	Owner: Mrs. Hazel Mohan. This area is pasture mapped by D. P. Stewart as outwash, located about 600' east of

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 108

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														owner's buildings. The southeast and south escarpments stand above the Neshobe River. A test hole was dug in the extreme southeast corner of the pasture. The material from 1.5'-3.5' is coarse sand with pebbles overlying 8' of silt. An additional sieve analysis follows: Passing #10 - 97.8% Passing #40 - 85.4% Passing #80 - 73.5% Passing #200 - 52.4%
58	1A	1968	1-4.5	0-1	No	100	100	100	41.0	11.0*	1	---	---	Owner: Mrs. Persis Ayer. This area is low terrace mapped by D. P. Stewart as lake sands, located north of the County Club, and east of the Neshobe River. One test hole was dug about 60' west of Town Highway No. 18 near the Country Club fence line. Test #1A was taken from 1'-4.5' in very fine sand, below which is an A-4 silt, sampled as Test #1B.
	1B	1968	4.5-8.5	---	No	100	100	100	71.5	---	---	---	---	An additional sieve analysis follows: Test #1A Passing #10 - 98.9% Passing #40 - 80.6% Passing #80 - 52.9% Passing #200 - 19.8% Test #1B Passing #10 - 99.5%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 109

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Passing #40 - 87.0% Passing #200 - 62.0% These deposits probably represent glacial lake deposition. The have been eroded by the Neshobe River with the resulting rounded irregular escarpments.
59	1	1968	1-10.5	0-1	No	100	100	98.5	11.8	3.0*	2	---	Sand	Owner: Ed Jacobs. This area is a low bank of exposed sand on the north side of Town Highway No. 20. The sand is probably representative of that to be found in Henry Harris's large meadow to the north that is mapped as lake sands. The area is only 300'-400' west of the proposed location of the Arterial Project. The material is a stratified sand varying from coarse and pebbly to very fine. The bank is 12'-14' high. An additional sieve analysis follows: Passing #10 - 97.0% Passing #40 - 45.6% Passing #80 - 16.2% Passing #200 - 5.1%
60	1	1968	1-7	0-1	No	100	100	100	25.0	9.0*	1-	---	Gran. Borrow (Sand)	Owner: Henry Harris. Area is meadow and pasture south to southeast of owner's buildings, and north of Town Highway No. 20. The pasture is west of and below the

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 110

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														proposed location of the Arterial Project. The area has been mapped by D. P. Stewart as lake sands. Test #1 was dug in lower corner of side hill pasture, east of the large meadow, and about 400' north of Test #1 of Map Ident. No. 59. The test is 120' from the Harris's east property line. About 3' of sand overlies an unsorted pebbly material, probably silty sand. The material appears to worsen with depth. An additional sieve analysis follows: Passing #10 - 94.6% Passing #40 - 71.1% Passing #80 - 39.3% Passing #200 - 18.7% It does not appear that the meadow, this far north, has any granular material, and that the sands occur only near the south end of the meadow.
	2	1968	N	O	T	S	A	M	P	L	E		D	No testing was allowed in the meadow, so Test #2 was dug about 1,000' west-northwest across the meadow from Test #1 in another pasture. Two feet of silty and stony sand overlies bedrock.
61	1	1968	1-9	0-1	Yes	100	100	100	27.0	4.0*	1-	---	Gran. Borrow (Sand)	Owner: Henry Harris. This area is a small pit and its immediate vicinity,

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 111

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														located on the west side of a rock ridge, about 0.30 mile east of Town Highway No. 15. The deposit is local and is a little to the east and above lake sands mapped by D. P. Stewart. The pit is about 240' south of the owner's sugarhouse, and is about 85' x 50' with a maximum face height of 8'. Its extension is south to southwest. Test #1 was dug atop pit's east face. The material is a fine sand. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 80.5% Passing #80 - 39.1% Passing #200 - 9.3% The pit is located a little east of the proposed location of Arterial Project.
	2	1968	1.5-5	0-1.5	No	97.9	97.4	94.3	13.3	5.0 4.7*	3½	---	Sand	Test #2 was dug about 130' southwest of pit at or near the limit of the deposit. From 1.5'-5' is pebbly fine sand, going to glacial till. An additional sieve analysis follows: Passing #10 - 87.5% Passing #40 - 58.2% Passing #80 - 24.2% Passing #200 - 9.2% The size of this deposit is

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 112

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														estimated at about 200' north-south x about 150' east-west, and it is probably quite shallow. The pasture hillside west of this area does not look granular, although it is mapped as lake sands.
62	1	1968	1.5-6	0-1.5	No	100	96.4	75.3	13.6	5.0 3.8*	2	---	Sand	Owner: Henry Harris. Area is on a west slope about 0.19 mile west of Town Highway No. 15. The area occupies terrain similar to that occupied by a beach gravel on the east side of U. S. Route 7. There is a change in slope west of and below the test location. The test was taken on the stony slope above the flat area, 100' southeast of a spring and 50' west of the corner of a field. The material appeared to be a pebbly and silty till with no sorting or stratification. Boulders were hit at 6'. The sample happened to meet Item 202 requirements, but it is not expected that another sample in that area would meet specifications.
63	1	1968	1-6	0-1	Yes	100	100	76.4	55.7	50.0 38.2*	1-	---	---	Owner: Leonard Highter. Area is vicinity of old pit in a pasture located about a quarter-mile west of U. S. Route 7 and three-quarters of a mile south of the Leicester

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 113

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				Town Line. An esker and lake sands have been mapped as occurring sporadically down the west side of U. S. Route 7. The pit is located a little west of mapped trace of the esker, and the pasture surface is stony for a good distance about the pit. A low, elongate knoll northwest of the pit has a very cobbly surface, but is controlled by bedrock. The pit is actually within D. P. Stewart's mapped silty clay area. One test hole was dug at the north end of the 110-foot long pit. The material is unsorted boulders, cobbles, and pebbly silt. It looks like till, and the sample taken failed to meet requirements for Granular Borrow, Item 105.
64	1	1968	1-10	0-1	No	56.7	47.6	34.8	8.0	4.5	1-	8.4%	Gravel	Owner: Dan Hesselton. This area is a pasture south of and adjoining Map Ident. No. 63. The feature is an elongate knoll about 525' north-south, that merges with a broad, low knoll on its west side. The land south of the pasture has an old pit now used as a dump at its north end. The north face, 30' long x 6' high, would have an extension north into the pasture.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 114

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Test #1 was dug 155' south of the Highter-Hesselton fence line, a short distance west of the ridge's east slope. The material from 1'-7' is a good looking gravel with about 5% exceeding 6" (not included in sample). From 7' to at least 10' is a fine gravel. Overall, the gravel is quite stony and is well packed in the hole.
	2	1968	1.5-10	0-1.5	No	59.0	49.5	33.9	9.0	5.5	1-	4.5%	Gran. Borrow (Grav.)	Test #2 was dug about 250' southwest of Test #1 on broad knoll. Log of Test: 0-1', overburden; 1'-1.5', silt seam; 1.5'-6', fine gravel; 6'-10', gravel with cobbles. There is some cementation at 3.5'-4.5'. The beds dip south to southeast. Test #2 was about 300' south of the Highter property.
	3A	1968	2-6	0-2	Yes	63.1	52.0	40.5	3.0	1.25	1-	7.4%	Gravel	Test #3A was from 2'-6' on the east end of the pit face or bank, about 375' south of Test #1. The material is a good looking gravel.
	3B	1968	6-13	---	Yes	57.9	46.8	36.3	3.0	1.5	1-	8.4%	Gravel	Test #3B was dug for 7' in floor below Test #3A. The gravel looks good and has a few +6" cobbles. Caving prevented digging below 13', but the material continues. The gravel is moist throughout. The top

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 115

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														of this test is about 11' above the surface along a nearby drainage ditch. The deposit can be traced south for about 290' from Test #3B, but it is very limited by a swamp on the south and west, and the ditch on the east. It may be said that Test #3 marks the south limit of the gravels. An access of about 600'-800' could be built in from U. S. Route 7 near the owner's buildings. It would require a pipe for the drainage ditch. This area would have perhaps 35,000 to 45,000 cubic yards of gravel that is either acceptable for or that could be modified for Item 201, Sub-base of Gravel. The wears are excellent. The material passing the #270 may be excessive in places.
65	1	1968	0-8	---	Yes	52.8	36.2	23.1	3.0	1.3	1-	3.4%	Gravel	Owner: Alexander Blair. This is fairly large pit from which most of the gravel has been removed. Bedrock and huge blocks and boulders remain. The pit extends for about 750' north-south along the west side of U. S. Route 7 just south of the Smoke Rise Campground. The pit has a maximum width of 275'. It is in an esker according to D.P. Stewart. However, the east

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 116

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														side of the feature lies against bedrock which outcrops just across the highway. Two samples were taken where there would be small amounts of gravel still available if someone wanted to bother with it. Test #1 was sampled on the lower east face in the central part of the pit beneath bedrock or huge blocks. The test is representative of a pocket of material 75' x 45' and of unknown depth. The gravel is fine and hard-packed.
	2	1968	0.5-6	0-0.5	Yes	57.4	49.2	37.1	9.0	4.0	1-	4.2%	Gravel	Test #2 was dug in cobbly area in southwest part of pit. It probably represents an area 185' north-south x 50'-70' east-west. The material is gravel with coarse sand and some cobbles. Below 6' are cobbles and silty clay. Bedding appears to have a very slight westerly dip.
66	1	1968	1-11	0-1	Yes	100	100	100	83.0	19.5*	2	---	---	Owner: R. W. Nichols. This is a small pit northeast of the junction of U. S. Route 7 and Town Highway No. 16. Its faces are 8'-12' high and the pit is about 90' long. It is located about 275' north of the town road. Its extension varies from 75' northeast

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 117

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														to 125' north, and is limited by bedrock. The material is fine sand or silty sand. An additional sieve analysis follows: Passing #40 - 100.0% Passing #80 - 93.4% Passing #200 - 30.6% The pit is not within a mapped outline of a glacial feature, but its elevation and position is similar to that of lake sands mapped by D. P. Stewart farther south.
67	1	1968	13-19	0-1.5	Yes	60.2	53.6	47.1	5.0	1.0	1-	5.1%	Gravel	Owner: Alexander Blair. This area is a pit on the west side of U. S. Route 7, across from Town Highway No. 16. There is a pond between the pit and the highway. The feature in which the pit was opened is an esker. Its south end borders a swamp; bedrock is exposed about 180' northwest of the pit. The ridge is about 200'-225' wide between bedrock on the west and the steep east slope. Material from this pit had been used on past highway projects and the faces had been bulldozed and flattened considerably. About 3' of gravel in the 170-foot long pit floor is not in place. The sub-floor is wet in an area in the

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 118

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														northwest corner. Test #1 was sampled on bottom of the east face below much material that had been pushed over the top of the face. There is about 60' between this face and the pond. The material is a good looking gravel with much sand and mainly 2½"-5" stones.
	2	1968	4-9.5	0-4	Yes	100	81.1	69.7	6.0	1.5	1	---	Gran. Borrow (Grav.)	Test #2 was dug 45' north of Test #1 atop east side of pit. This test is at east edge of stripped area lying north of pit. The top 4' is silty sand overlying gravelly sand. The sample had too few stones for Item 201, and too few proper-size stones were included for the wear test. It appears that more stripping is needed atop the pit to get down to good granular material. According to a backhoe operator, the pit always did have a lot of top on it and that at the time it was used it was estimated that the material was pretty well depleted.
	3	1968	2.5-8.5	0-2.5	No	64.9	55.1	48.4	11.0	5.0	1	10.8%	Gran. Borrow (Grav.)	Test #3 was dug 100' north of pit's north face, 150' east of exposed rock. Below 2.5' is a gravel with a few cobbles and 2 or 3 small boulders. Beds shown by sand stringers

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 119

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														dip east. The material kept caving, so it was dug to only 8.5'. The sample had excess silt for Item 201. The pit faces vary from 8' or 10' on the west side of the pit, to 16' or 20' on the east side.
68	1	1968	2.5-11.0	0-2.5	No	100	100	98.3	49.2	27.0 26.5*	1-	---	---	Owner: Brandon Training School. Area is a large, rectangular plowed cornfield on the east side of U. S. Route 7 just south of State Aid Highway No. 7 and east across the highway from the Training School. Test #1 was dug on the east central side of the field, due east of the school water tower and 485' south of the north end of the field. Log of Test: 0-2.5', overburden; 2.5'-6', fine sand; 6'-7', medium sand; 7'-11', fine sand; 11', bottoms in stones. An additional sieve analysis follows: Passing #10 - 95.3% Passing #40 - 73.7% Passing #80 - 52.1% Passing #200 - 32.2%
	2	1968	2-10	0-2	No	100	93.6	80.9	19.4	6.0 4.9*	1-	---	Gran. Borrow (Sand)	Test #2 was dug in the northwest corner of the field, 125' east of the highway. Log of Test: 0-2', overburden; 2'-3.5', brown fine sand;

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 120

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				3.5'-10', gray sand. There was a thin band of coarse sand and pebbles at 2'. Bottoms in moist, silty or fine sand. An additional sieve analysis follows: Passing #10 - 83.5% Passing #40 - 58.7% Passing #80 - 30.9% Passing #200 - 9.5%
	3	1968	---	0-1	No	N O T S A M P L E D								Test #3 was dug in the southwest corner of the field 600' south of Test #2. Log of Test: 0-1', overburden; 1'-3', silt; 3', boulders. Not sampled.
	4	1968	1.5-8	0-1.5	No	100	100	100	32.0	8.5*	1	---	Gran. Borrow (Grav.)	Test #4 was dug in the west side of the field 300' north of Test #3 and 155' east of the highway. Test #4 is 300' south of and 7' below Test #2. Log of Test: 0-1.5', overburden; 1.5'-3', very fine sand; 3'-8', silty sand. Material did not look very good. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 100.0% Passing #80 - 87.0% Passing #200 - 45.7% This field is mapped by D. P. Stewart as lake sands.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 123

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														An additional sieve analysis follows: Passing #10 - 88.7% Passing #40 - 76.7% Passing #80 - 59.1% Passing #200 - 16.4% Fine gravels occur on the west end of the north face of the recently opened lobe. These appear to dip southwest. The gravels continue to the north along the pit's east face, but they grade northward to gravelly or pebbly sands. Some of this face has been stripped. Overburden varies from 2.5'-3.5'.
3	1968	0-12	---	Yes	100	90.1	82.7	1.6	0.5 0.4*		1-	---	Sand	Test #3 was sampled on this face where it is 15' high, about 90' north of recently opened lobe. Most of face is interbedded pebble layers and pebbly sand layers. A thin layer of gravel occurs at 10'.
4	1968	N	O	T	S	A	M	P	L	E			D	Test #4 was dug in floor of east lobe of pit (recently opened lobe), 15' out from Test #1B. About 2' of sand overlies hard-packed cobbly silt. No sample was taken.
5A	1968	2.5-16	0-2.5	Yes	86.8	61.3	42.8	35.0	8.5		1-	2.6%	Gran. Borrow (Grav.)	Test #5A was dug on corner of north face of east lobe. The face is 25' high. The top 16' is gravel and beds of sand and silty sand. The sample had excess fines for Item 201.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 121

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
69	1A	1968	2-26	0-2	Yes	100	97.5	95.0	6.6	1.0 0.9*	1-	---	Sand	Owner: William Peck. This is a pit on the former Leonard Farm east across U. S. Route 7 from the Brandon Training School. The pit is about 950' long (north-south) and is about 575' east of the highway. The pit's east extension is up into thickly wooded hill, accessible only to bulldozer. Its south extension is into property owned by Charles Ketcham. Its north extension is limited by the Pine Hill Cemetery. Its west extension is into a field owned by the Training School. The south 250' of the pit is inactive; the north 500' of the area has been the source of granular materials in the past and it now shows some gravels. The center 220'-230' of the pit is now active and a 40-foot high face has been opened in a narrow lobe 105' long extending eastward into the hillside. Fine to pebbly sands are exposed in this lobe. Test #1A was taken on the northeast corner of the lobe. From 2'-26' are south-dipping beds of pebbly and fine sands. An additional sieve analysis follows:

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 122

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Passing #10 - 94.7% Passing #40 - 47.9% Passing #80 - 10.3% Passing #200 - 1.5%
	1B	1968	26-40	---	Yes	91.8	77.5	76.2	8.4	2.0 1.5*	1-	---	Gran. Borrow (Sand)	Test #1B was sampled on the lower face. Log of Test: 26'-33', fine sand; 33'-34' silt; 34'-37', very fine gravel; 37'-39', coarse sand; 39'-40'+, fine gravel. An additional sieve analysis follows: Passing #10 - 91.7% Passing #40 - 49.0% Passing #80 - 15.4% Passing #200 - 4.6%
	2A	1968	2-28	0-2	Yes	100	98.4	97.2	51.1	16.0 15.6*	1	---	---	Test #2A was sampled from 2'-28' on south face of the lobe. From 2'-4' is a very fine gravel overlying beds of very fine sand to sandy silt with seams of silty clay. An additional sieve analysis follows: Passing #10 - 99.0% Passing #40 - 96.1% Passing #80 - 76.7% Passing #200 - 38.8%
	2B	1968	26-35	---	Yes	100	89.7	78.7	36.2	9.0 7.1*	1	---	Gran. Borrow (Sand)	Test #2B was sampled on bottom 9' of south face of the lobe. From 26'-32' is pebbly sand and silty sand; the bottom 3' of the face is gravelly sand below which is moist very fine sand.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 124

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	5B	1968	16-25	---	Yes	100	94.4	85.3	11.9	2.0 1.7*	1-	---	Sand	From 16'-25' are fine to coarse sands with pebbles. The upper gravels are those which grade north along the east face to pebbly sands. Those would have to be removed to get at the underlying specification sands.
	6	1968	0.5-5	0-0.5	Yes	100	83.3	78.9	33.1	7.0 5.5*	1	---	Gran. Borrow (Sand)	Test #6 was dug in pit floor near pile of strippings, 65' west of Test #5. From 0.5'-2' is a stony sand, underlain by 3' of sand. Water enters in a fine gravel at 5'.
	7	1968	2-12.5	0-2	Yes	79.1	49.5	34.4	9.0	2.5	1	2.2%	Gravel	Test #7 was dug at south end of pit on 17-foot face. From 2'-6.5' is pebbly and gravelly sand; from 6.5'-12.5' is gravel. The bottom 4.5' is silty sand. This test represents an extension south into a meadow owned by Charles Ketcham who did not give permission to sample. The east face of the south end of the pit is badly sloughed and a pine grove stands above the face.
	8	1968	0.5-6	0-0.5	Yes	95.9	76.8	66.8	16.7	5.5 3.7*	1	---	Gran. Borrow (Sand)	Test #8 was dug 95' from south end of pit in middle of floor in a very stony area. The material is a gravelly sand with enough silt to give it a "dirty" appearance. At 6' is a moist very fine sand

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 125

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														and at 8' is silty sand. Possibly the sample to 8' would have met Item 202 requirements; it had excess stones down to 6'.
	9A	1968	0.5-7.5	0-0.5	Yes	95.0	91.8	76.3	1.5	0.5 0.4*	1	---	Sand	Test #9A was dug on 7.5-foot east face of narrow north portion of pit 180' north of Test #3. Top of this face is at same level as Test #6; its foot is in narrow sub-floor in which there are many stones. About 2' of fine gravel overlies 5' of sand.
	9B	1968	7.5-15.5	---	Yes	100	91.2	82.9	1.7	1.0 0.8*	1-	---	Sand	From 7.5'-15.5' the sand continues, separated by a 1.5-foot gravel layer at 9.5'. It was sampled as Test #9B and met requirements for Item 202.
	9C	1968	15.5-17.5	---	Yes	74.9	54.1	41.0	6.0	3.0	1-	6.7%	Gravel	A 2-foot thick gravel layer below Test #9B was sampled as Test #9C. It may be only a layer in a sand and gravel sequence. The test bottoms in gravel. Generally speaking, this north portion of the pit would have too few stones for Item 201, and the material would probably have to be screened for Item 202.
70	1	1968	1.5-8	0-1.5	Yes	100	87.6	77.4	6.1	2.5 1.9*	1	---	Sand	Owner: Steinberg and Sons. Area is composed of a small shallow pit and two sloughed banks. The pit has 8'-10' faces and has extension northward into a pasture.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 126

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Test #1 was taken on east end of north face. Log of Test: 0-1.5', overburden; 1.5'-3.5', pebbly sand; 3.5'-8', fine to coarse sand with one thin silt layer. An additional sieve analysis follows: Passing #10 - 80.2% Passing #40 - 41.4% Passing #80 - 10.8% Passing #200 - 5.1%
	2	1968	0.5-4.5	0-0.5	Yes	100	96.1	89.4	18.7	12.0 10.7*	1	---	---	Test #2 was dug in floor. The top 1' was coarse sand over silty material with stones. Boulders or bedrock at 4.5'. An additional sieve analysis follows: Passing #10 - 64.9% Passing #40 - 45.0% Passing #80 - Passing #200 - 16.7%
	3	1968	1.5-12	0-1.5	Yes	100	100	100	56.0	14.0*	1	---	---	Test #3 was dug in face of sloughed bank west of and downhill from the pit. The face of 70-foot long bank averages 7'-8' high. The test continued in the bottom of the face. There is mainly silty sand with a few small pebbles and an occasional layer of fine sand. There is fine, moist sand below 10' and silt-clay with stones at 12'. An additional sieve analysis follows:

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 127

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Passing #10 - 99.0% Passing #40 - 95.2% Passing #80 - 56.9% Passing #200 - 20.2%
	4A	1968	1-7	0-1	Yes	100	100	100	58.0	16.3*	1	---	---	Test #4A was dug in the 7-foot face and continued into the bottom of small bank, 50' southwest of and above Test #3. Numerous small stones show on the face of the bank. The test represents the extension south into Map Ident. No. 71. Stones are confined to the top 1'. From 1' to 7' there is a tan silty sand. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 96.9% Passing #80 - 71.3% Passing #200 - 25.6%
	4B	1968	7-15.5	0-1	Yes	100	100	98.6	50.3	18.0 17.7*	1	---	---	Test #4B sampled below Test #4A. From 7'-15.5' there is a gray, fine to silty sand. The contact is very steep. Northwest of the tan sand there is gray sand. A bed of coarse gray sand with a few tiny pebbles occurs from 8'-10'. Silty sand begins at about 15.5' below the top of the bank. The area looks like a sand source only north of Test #1. There is probably only a small quantity because of shallow depth. There is a

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 128

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				large meadow to the southeast of Tests #3 and #4 which is probably granular, but it could not be tested. An additional sieve analysis follows: Passing #10 - 97.0% Passing #40 - 83.3% Passing #80 - 53.6% Passing #200 - 22.6%
71	1	1968	1-10.5	0-1	No	100	100	100	62.0	19.5*	1	---	---	Owner: Steinberg and Sons. This area is a pasture hillside above the east side of U. S. Route 7 extending for about 1,000' south of Map Ident. No. 70. D. P. Stewart has mapped top of hillside and part of the flat area on the top to the east as a beach. Some gravelly soils were seen in lots that had been prepared for houses on the flat area east of Steinberg's property, but no tests could be dug. Test #1 was dug atop hillside pasture near field fence, about 150' south of Test #4 of Map Ident. No. 70. The material is a very fine to silty sand, unacceptable for Item 105. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 97.6% Passing #80 - 78.2%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 129

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	2	1968	1-14	0-1	No	91.4	87.9	77.3	3.9	1.5 1.2*	1	---	Gran. Borrow (Sand)	Passing #200 - 33.9% Test hole #2 was dug about 1,000' south of Test #1 on upper side of pasture near the southwest corner of the field. At the northeast end of the hole to at least 14' is a very pebbly coarse sand sampled as Test #2.
	3	1968	1-9.5	0-1	No	100	100	100	60.0	14.5*	1	---	---	On the southwest end of the hole, separated from the coarse sand by a nearly vertical contact, is a very fine or silty sand, sampled as Test #3. An additional sieve analysis follows: Test #2 Passing #10 - 65.2% Passing #40 - 20.0% Passing #80 - 5.6% Passing #200 - 1.3% Test #3 Passing #10 - 100.0% Passing #40 - 97.9% Passing #80 - 70.2% Passing #200 - 20.7% The vertical contact between the two sands is very difficult to explain. It was indicated that while digging a water line 300'-400' east of test hole #2, no sands were found. The pasture hillside west of and below the test looks like glacial till.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 130

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	4	1968	1-10.5	0-1	No	100	100	100	73.0	18.0*	1	---	---	Therefore, there is only a narrow, probably thin area of granular material. Test #4 was dug 150' southwest of Test #1. The material is a silty sand unacceptable for Item 105. An additional sieve analysis follows: Passing #10 - 100.0% Passing #40 - 98.8% Passing #80 - 84.0% Passing #200 - 28.4% Material acceptable for highway use would be patchy in this area. Possibly better material would underlie the narrow field east of the tests. No testing was allowed in the field.
72	1	1968	0-10	---	Yes	54.4	42.3	21.1	3.0	1.5	1-	5.2%	Gravel	Owner: Town of Brandon. This is a large pit east of the former Railroad Pit located between State Aid Highway No. 4 and Town Highway No. 38. The pit is active and has islands of cobbles, hardpan, and strippings. There are a number of small lobes where material has been removed at various times. The pit has a wooded east extension; its other extensions are limited by the roads and by the Knapp Pit to the west.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 131

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														Test #1 was taken in August on a low face in the floor on the south side of the pit. This small lobe was removed between August and November. The material was a very stony gravel interbedded fine and cobbly. The beds dipped south.
	2	1968	0-7.5	---	Yes	49.0	30.8	16.8	6.0	3.0	1	4.6%	Gravel	Test #2 was dug on low face on west side of pit 170' from south side. The test is about on the Knapp property line. This test probably represents the material in an area 185' east-west x 110' north-south. This small lobe is full of large boulders and cobbles. About 35% exceeds 6". The bottom 2.5' of the 10-foot face is too bouldery to dig through.
	3A	1968	0-15	---	Yes	52.4	34.4	16.1	20.0	11.0	1	5.4%	---	Test #3A was dug atop face in northeast part of pit. About 20% of material exceeds 6". The gravel is silty and cobbly in places. The top of the face is stripped for about 30' to the north, but there is only 65'-75' between the face and an adjoining property.
	3B	1968	18-30	---	Yes	47.8	35.3	16.7	4.0	1.5	1	5.4%	Gravel	The bottom 12' of the face is a very stony gravel with quite a few cobbles. It was sampled as Test #1B.
	4	1968	0-15	---	Yes	65.6	53.0	20.4	2.0	1.5	1	6.2%	Gravel	Test #4 was dug on lower face on east side of pit 150'

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 132

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
	5	1968	0-7	---	Yes	54.8	35.7	10.4	3.0	1.0	1-	3.1%	Gravel	east of where Test #1 was taken. The material had been removed between August and November. The lower floor had been excavated 4'-5' lower than at Test #1. The material in Test #4 represents the east extension. It is a fine, well-graded gravel, moist, and with some apparent silt-clay coating. Test #5 was dug in floor a few feet west of Test #4. The material is very stony and quite loose. It caves easily. There is a very cobbly layer at 5.5'-6.5'. Below that is a partially cemented very fine gravel. Caving prevented digging below 7'. An east extension of the pit is about all that remains. It is wooded and hardpan sections would make working it difficult.
73	1	1968	0-12	---	Yes	100	100	100	55.0	9.0*	1-	---	Gran. Borrow (Sand)	Owner: Ernest and Murray Knapp. This area is the east end of the former Railroad Pit. It includes the currently worked south face, the inactive east end of the pit, and a large lobe north of the pit road in the central part of the pit. The upper level of the pit is on bedrock for the most part. Test #1 was a hand sample of a 220-foot long sand face

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 133

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														about 600' from the east side of the pit. The face is just north of the haul road on the pit's middle level. A road to the upper level skirts the east end of the face. The sand on the 15-foot face is gray and very fine. It shows cross-bedding and has a south to southwest dip. An additional sieve analysis follows: Passing #40 - 100.0% Passing #80 - 69.7% Passing #200 - 13.1%
	2	1968	0-20	---	Yes	58.9	51.8	40.1	2.0	1.0	1-	6.8%	Gravel	Test #2 was dug on active face on south side of pit. Little extension remains to south on Knapp property. East of the active lobe is a 6-11-foot thick overburden of silt and stones and stony clay. This layer rises to west so that a maximum top of 3' overlies the active lobe. The top 20' of the 25-foot face was sampled. Fine gravel overlies cobbly gravel to the floor. The beds dip steeply south and the bottom cobbly gravel underlies a sand 20' north of the face on a lower exposed face.
	3	1968	0-10	---	Yes	93.5	81.8	77.9	24.9	7.0 5.5*	1	---	Gran. Borrow (Sand)	Test #3 was sampled on this 11-foot face, representing an area of 130' east-west x 75' north-south. The material is

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 134

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														interbedded fine sand, pebbly sand, and gravel. The sample had excess +1½" stones and excessive fines for Item 202. An additional sieve analysis follows: Passing #10 - 88.4% Passing #40 - 61.4% Passing #80 - 30.1% Passing #200 - 7.5% In general, south face has too much top and too little extension to be a source of much material.
	4A	1968	0-18.5	---	Yes	100	100	71.9	20.9	17.0 12.2*	1	---	---	Test #4A was dug on upper part of east face of pit just west of Town-Knapp property line. Log of Test: 0-1', gravel; 1'-5', clay; 5'-12', silt; 12'-18.5', silty sand and fine sand. To this point was sampled as Test #4A. The sample had excess fines for Item 105. An additional sieve analysis follows: Passing #10 - 80.9% Passing #40 - 61.2% Passing #80 - 32.2% Passing #200 - 17.2%
	4B	1968	18.5-36	---	Yes	81.1	66.6	40.8	2.0	1.0	1	5.7%	Gravel	From 18.5'-36' on the 40-foot face was pebbly sand over a pebble gravel with a few cobbles. There is some cementation.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 135

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														There is too much top to work the east gravels. They occur only in a 60-foot wide (east-west) neck whose north extension would be limited by rising bedrock.
	5	1968	1-9	0-1	Yes	69.6	31.2	15.7	5.0	1.5	1-	3.2%	Gravel	Test #5 was dug just south of pit road about 460' from the east side of the pit. The test is atop the badly sloughed face of the lower level of the pit, and represents a large quantity of floor gravels in the east-central part of the pit. The material is a very stony and fine gravel with some cobbles continuing in gravel below 9'.
	6	1968	0.5-7	0-0.5	Yes	70.1	58.4	30.9	20.0	13.5*	1-	5.4%	---	Test #6 was dug about 230' north-northeast of Test #5 in floor of north lobe of pit. The top 3' is large boulders and so is the interval from 5'-7'. Otherwise, a fine sandy or silty gravel. Probably only small amounts of granular material remain in this pit. Bedrock is near the surface on the upper north level; an adjoining property limits a south extension. Material from this pit has been used on highway projects in the past.
74	1	1968	0-14	---	Yes	52.9	36.2	18.6	5.0	2.0	1	3.6%	Gravel	Owner: Ernest and Murray Knapp. This is western part of huge

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 136

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				Railroad Pit. Most of the material has been removed. There are floor gravels in the west end of the pit in the north-south lobe. There are limited quantities on the south face near the southwest corner, with an east extension. A north extension has bedrock in the upper level and there is bedrock in the lower lobe about 250' from the north end. A west extension of the pit is on another property whose owner does not wish to open it up. Test #1 was sampled on 28-foot face at corner of main pit and the deep, north-south lobe, 65' north of an equipment shed. There is bedrock exposed on this face 70' east of the test. The material is a very stony gravel with some cobbles, and 2 or 3 layers of small boulders. The bedrock rises northward so that it is 6'-8' below the top level, 175' north of Test #1.
	2A	1968	2.5-19	0-2,5	Yes	51.2	30.3	15.5	6.0	3.0	1	6.6%	Gravel	Test #2A was dug on west face of north-south lobe on extreme west side of pit. The test is about 270' north of the lowest level in the west lobe, and 250' from its north end. Extension would be to the west

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 137

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				into Howland property. The material is a clean gravel with a few +3" stones and no boulders. There is a hardpan layer at 17'-19'.
	2B	1968	18-35	---	Yes	67.8	50.0	30.8	5.0	2.5	1	5.0%	Gravel	Test #2B on the lower face is mainly a fine gravel, partially cemented in places.
	3A	1968	0-12	---	Yes	78.2	43.1	13.2	7.0	4.0	1	4.0%	Gravel	Test #3A was dug near northwest corner of lowest face in the lobe in the west side of the pit. This lowest level is oriented north-south and its east face is only a few feet from the corner where Test #1 was taken. The material is a very stony gravel with a very few boulder size. Bedding is not evident. From 12'-23' on the face is also a very stony gravel, sampled as Test #3B. An east extension of this material will be limited by bedrock. It would have a north extension about 80' east-west x 270' north-south.
	3B	1968	12-23	---	Yes	57.8	40.8	19.2	3.0	1.8	1	4.1%	Gravel	
	4	1968	N O T S A M P L E D											Test #4 was dug 125' north-northeast of Test #1 in stony looking area. The top 2.5' is cobbly, poorly sorted gravel; from 2.5'-5.5' is fine to silty sand. Ledge is at 5.5'. No sample was taken.
	5	1968	0-10.5	---	Yes	100	92.3	83.3	11.6	5.0 4.1*	1	---	Sand	Test #5 was dug in floor of lowest level in western lobe of pit. The test is 140' south

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 138

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														of Test #3A-3B in middle of 70-foot wide floor. Log of Test: 0-2', gravel; 2'-6.5', pebbly very coarse sand; 6.5'-10.5', fine sand. Water was hit at 10.5'.
	6A	1968	3-18	0-3	Yes	66.0	54.2	38.5	2.0	0.8	1-	6.6%	Gravel	Test #6A was on top 18' of 32-foot high face on south side of pit about 365' south of Test #1. A 55-foot wide face had been opened and was active at the time the pit was sampled. There would be a narrow body of material with a south extension limited by Munger property to the south and with a possible east extension of about 400' to Test #3 of Map Ident. No. 73. From 3'-18' are beds of pebbly sand and fine gravel.
	6B	1968	18-32	---	Yes	100	96.9	88.1	2.6	0.8 0.7*	1-	---	Sand	Test #6B was sampled from 18'-32'. The material is mainly pebbly coarse sand to 27' and fine sand from 27'-32'. An additional sieve analysis follows: Passing #10 - 75.4%; Passing #40 - 19.8%; Passing #80 - 4.2%; Passing #200 - 0.7%
75	1	1968	3-8.5	0-3	No	71.2	61.6	42.2	4.0	1.8	1	14.0%	Gravel	Owner: Rollin Nickerson. This area is a field mapped by D. P. Stewart as lake sands. It is located south of Brandon Village west of Town Highway

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 139

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														No. 42 and the railroad tracks. Test #1 was dug in southwest corner of the narrow field about 225'-250' west of the tracks. Three feet of silt overlies a fine gravel, bottoming at 8.5' in fine sand. This test may represent a channel filling in an otherwise fine material of glacial lake deposition.
	2	1968	1-8	0-1	No	100	100	100	94.0	59.5*	1	---	---	Test #2 was dug 230' north of Test #1. The material is silt with a clay seam.
	3	1968	1.5-9	0-1.5	No	100	100	97.5	84.8	35.8 34.9*	1-	---	---	Test #3 was dug 195' southeast of and 6'-8' below Test #1. The material is sandy silt bottoming in ledge at 9'. Test #1 was located 75' east of exposed bedrock in the woods west of the field. This field and other fields to the southwest show very fine material on the surface. The glacial lake sediments would generally be very fine in the area.
76	1	1968	1-13	0-1	Yes	100	100	85.6	1.7	1.5 1.3*	1-	---	Sand	Owner: Allyn Dean. This area is a small pit on the northwest side of State Aid Highway No. 5, a short distance southwest of Otter Creek. The pit consists of 3 or 4 small faces opened in a low, northeast-facing hill in which bedrock is exposed southwest and west of the diggings. An

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 140

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														alluvial floodplain lies around the feature from northwest to east. Feature is mapped by D.P. Stewart as a beach gravel and is shown continuing south by east for about a half-mile between the 350-foot and 390-foot contours. Field observations, however, indicate that granular material is confined to the pit area.
	2	1968	1-7	0-1	Yes	100	100	91.3	4.5	1.0 0.9*	1	---	Sand	Two tests were taken, representing about a 20-foot vertical section. Both samples were of pebbly coarse sand. The bottom of Test #2 is moist silt. An area of about 200' x 200' would have this sand, the thickness of which would decrease to the southwest to south. An additional sieve analysis follows: Test #1 Passing #10 - 61.9% Passing #40 - 9.5% Passing #80 - 2.2% Passing #200 - 1.0% Test #2 Passing #10 - 72.2% Passing #40 - 20.9% Passing #80 - 4.7% Passing #200 - 1.0%

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 141

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				This area would not be a source of very much sand.
77	1A	1968	1-11	0-1	Yes	95.9	82.1	46.8	3.0	1.5	1	---	Gran. Borrow (Grav.)	Owner: Gale Parmelee. Area is a small pit located about 150' west to northwest of State Aid Highway No. 5 140' southwest of the owner's house. The area is just north of the junction of State Aid Highways No. 5 and No. 9. The pit and its extension is located near the contact between a kame terrace and a beach gravel, mapped by D. P. Stewart. The pit has a 28-foot face and is 40' wide. It has a southwest to west extension (130' southwest and 80' west) in a pasture and a further extension to the west in a flat meadow. The owner does not wish to develop the area and would allow no backhoe testing.
	1B	1968	11-23	---	Yes	81.4	63.1	36.3	6.0	2.0	1	16.1%	Gravel	Two samples were taken on the pit face. The material is a fine clean gravel with a few +3" stones and some minor cementation. The bottom 5' had excess slough to dig through.
78	1	1968	1-10	0-1	Yes	80.4	71.2	57.1	19.0	5.0	1	---	Gran. Borrow (Grav.)	Owner: Raymond Lonergan. This area is a pit on the east side of State Aid Highway No. 5 a short distance south of State Aid Highway No. 9.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 142

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				The pit is pretty well depleted save for an 8-foot level in the southwest part of the pit that measures 90' x 100', a 10-foot level in the southeast part that has a maximum of 70', and possibly an east extension into a wooded knoll with a gentle east slope. One hand sample was taken on the 10-foot south face of the pit. The material was pebbly sand overlying gravel. The sample had excess fines for Item 201 and too few proper-size stones were included for the wear test. A full schedule of testing and a heavy snowfall prevented a return to the pit for backhoe sampling. The Town of Brandon has used material from this pit.
79	1A	1968	1.5-12	0-1.5	Yes	78.0	61.0	40.0	7.0	3.0	1	19.8%	Gravel	Owner: Arnold Magoon. This is a pit west across State Aid Highway No. 5 from Map Ident. No. 78. The pit is about 220' long (north-south) with 18-22-foot faces and a west extension into an apple orchard. According to the owner, the pit will be closed because there will be a pond built up in the orchard to the west. The north end of the pit is

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 143

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														more stony than the south end. The face is badly sloughed in places and overburden varies from 1'-3'. Test #1A was sampled on upper face in north end. Log of Test: 0-1.5', silt and stones; 1.5'-4', cobbly gravel; 4'-10', cobbly gravel; 10'-12', gravelly sand. The bottom 8' is slough. South end of pit floor is 3' or 4' lower than north end.
	2	1968	2-20	0-2	Yes	67.2	62.9	52.1	8.0	2.1	1	12.1%	Gravel	Test #2 was dug about 100' from north end of pit where pit floor breaks. A sample was taken obliquely down face to include fine sands and gravels. The top 6' of the face is pebbly fine sand and gravelly sand. The bottom 14' is fine gravel with confused bedding and a few thin fine or silty sand seams.
	3	1968	1.5-15	0-1.5	Yes	81.9	75.0	60.8	10.0	2.0	1	18.0%	Gran. Borrow (Grav.)	Test #3 was sampled on 18-foot face at south end of pit. The top 10' or 12' is stony sand and fine sand underlain by 2 gravel beds and pebbly sands. The face looked marginal for Item 201 on stone content and the sample had too few stones for Item 201.
80	1	1968	2-12	0-2	Yes	76.0	63.3	47.6	12.0	3.0	1½	20.6%	Gravel	Owner: Arnold Magoon. This area is a small pit

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 144

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				located about 0.27 mile southwest of and above the junction of State Aid Highway No. 5 and No. 9. Access is by a road up through an apple orchard. The pit is in a northeast slope mapped by D. P. Stewart as a kame terrace. The extension is south to west into an old orchard with scattered pines. There is possibly an east extension into the west end of the other orchard. The pit is 80' x 55' with faces a maximum of 13' high. Only one test was taken on the pit's west face. The material is a fine gravel. Overburden varies from 1.5'-2.5'. There are only a few 3-6-inch stones around the pit. More testing is needed in this area. It was intended to take backhoe samples when the sampling schedule permitted, but early snow prevented this.
81	1	1968	1.5-9	0-1.5	Yes	100	92.3	83.0	25.7	6.0 5.0*	1-	---	Gran. Borrow (Sand)	Owner: Clyde Mitchell. This is the former Andy Cobb pit located on the west side of Town Highway No. 46 about 0.1 mile south of Town Highway No. 9. The pit is 225' x 180' with faces 12'-18' high. The pit is in a low knoll separated by a swale from another knoll to the west.

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 145

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing					Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						1½"	5/8"	#4	#100	#270				
														There is generally a gentle north slope in this area. It is mapped by D. P. Stewart as a kame terrace. Test #1 was dug on the north face 35' from its west end. The material is stratified pebbly and fine sand with excess very fine sand for Item 202.
	2	1968	2.5-10	0-2.5	Yes	84.6	78.6	61.9	8.0	3.0	1-	18.4%	Gran. Borrow (Grav.)	Test #2 was dug on south face near southwest corner, 75' west of the town road. This face is about 200' long (east-west) and has about 110' of extension to the south to the edge of the woods. Log of Test: 0-2.5', overburden; 2.5'-3.5', silty sand; 3.5'-10', clean fine gravel; 10'-?, gravelly sand concealed by slough. The material looks marginal on stone content for Item 201. There are many subangular to tabular stones on this face. The pit floor is wet in 1 or 2 spots. More testing is needed in this area. It probably would be a source of Item 105.
82	1	1968	1-7	0-1	Yes	94.0	88.3	75.2	15.8	8.0 6.0*	1-	---	Gran. Borrow (Sand)	Owner: Avery Hack. This is a small pit in a hillside meadow southeast of and below the junction of State Aid Highway No. 9 and Town Highway No. 39. The pit is

*Percentage of Total Sample

TABLE I

BRANDON GRANULAR DATA SHEET NO. 146

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Existing Pit	Sieve Analysis % Passing 1½"	5/8"	#4	#100	#270	Color AASHO T-21	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
														about 60' long (north-south) with a 12-16-foot face. Possible extensions are 60' uphill to the west and about 120' south along the hillside. Overburden varies from 1'-1.5'. It is underlain by a cobbly layer 1'-1.5' thick. From about 2' or 3' to 4' is a fine gravel; from 4'-7' is a pebbly sand. The bottom of the face has excess slough to dig through. An additional sieve analysis follows: Passing #10 - 81.0% Passing #40 - 36.7% Passing #80 - 17.9% Passing #200 - 8.2% The sample had excess +1½" pebbles and excess fines for Item 202. Area is not an important source because of its small size. Its access would probably be too steep for loaded trucks. A new haul road could be built out to the southwest.

*Percentage of Total Sample

TABLE I
Supplement

BRANDON PROPERTY OWNERS - GRANULAR	Map Ident. No.
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Atwood, Lucian	49, 54
Ayer, Persis (Mrs.)	45,
Baker, Burton	40, 41, 42
Bird, R. F.	39
Blair, Alexander	65, 67
Blodgett, Mildred (Mrs.)	31
Brandon, Town of	72
Brandon Training School	68
Carey, Victor	29, 30, 32, 33
Churchill, George	38
Dean, Allyn	76
Dodge, Herman	2, 3, 7
Dunshee, Earl	11
Dutton, George	26
Goodnow, W. J. B.	16, 17
Griffin, Howard	37
Hack, Avery	82
Hack, R. J.	14
Hallock, George	9
Harris, Henry	60, 61, 62
Hesselton, Daniel	64
Highter, Leonard	63
Jacobs, Edward	59
Johnson, Gerald	18, 20, 21, 22
Johnson Lumber Company	35
Kimball, Dexter	36
Knapp, Ernest and Murray	73, 74
LaRock, Herbert	43, 44
Lonergan, Raymond	78
Magoon, Arnold	79, 80
Malinowski, Helen (Mrs.)	50
Marsh, Rodney	13
Mitchell, Clyde	81
Mitchell, Robert	51, 52, 53
Mohan, Hazel (Mrs.)	46, 47, 48, 55, 56, 57
Newton and Thompson Co., Inc.	34
Nichols, R. W.	66
Nickerson, Rollin	75
Otter Valley Union High School	1

TABLE I
Supplement

BRANDON PROPERTY OWNERS - GRANULAR (CONTINUED)	Map Ident. No.
Parmelee, Gale	77
Peck, William	69
Rosen, Sid	10, 19
Ryan Auto Franchise	4
Severy, Donald	24, 25, 27, 28
Steinberg and Sons	70, 71
Torrey, Willis	15
Vermont Marble Company	5, 6
Voelbel, Harold	23
Wood, Robert	12

TABLE II

BRANDON ROCK DATA SHEET NO. 1

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
1	1	1968	Dolomite	No	Chip	3.4%	Owner: Otter Valley Union High School. Access is through the north side of the Herman Dodge pasture. The area is a long 150'-200' high scarp northwest of high school. The scarp trends nearly north-south, and is the south part of Hawk Hill. The scarp is 0.30 mile west of U. S. Route 7 and 0.35 mile south of State Aid Highway No. 8. The rock is mapped as the Dunham, which is a buff-to gray-weathered, light gray to buff dolomite. The weathered surface has a scored appearance. The rock breaks from nearly blocky to angular in the thinner-bedded sections. The sample was taken from many large, random blocks at the base of scarp. A crushing operation might be set up at the base, and the rock blasted down from the top. The exposures atop the ledge are wooded and cover an area of about 1,500' north-south x 500' east-west. The sample had an AASHO T-96 abrasion result of 31.3%
2	1	1968	Dolomite	No	Chip	3.2%	Owner: Otter Valley Union High School. The access road passes just north of the Vermarco sand pit. This area is the north part of Hawk Hill and trends nearly north-south. It is 0.35 mile west of U. S. Route 7 and 0.14 mile north of State Aid Highway No. 8 near the Triangle Restaurant. The size of the outcrop is about 600' x 1,800' and the east face is nearly vertical. The sample was taken along a crevasse which runs a bit west of south. Part of the sample was taken from some large random blocks at the bottom of the cliff, which vary from ½ to 8 cubic yards in volume. The dolomite exposed here is the Dunham, which is blue-gray to buff and gray on fresh surface. The rock weathers tan to gray and breaks subangular where thinly-bedded and blocky where more thickly bedded. A crushing operation could be set up on the east edge of the outcrop or between the north and south outcrops of Hawk Hill to work in both directions. The sample had an AASHO T-96 abrasion result of 27.7%
3	1	1968	Dolomite	No	Chip	4.2%	Owner: Rodney Marsh. Area is a wooded ridge extending about 0.50 mile north

TABLE II

BRANDON ROCK DATA SHEET NO. 2

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							of Town Highway No. 35. It is located a little southwest of the approximate location of the Project Line. Test #1 was a sample of bedrock and broken blocks taken on the east side of ridge near a huge maple tree about 0.35 mile north of the town highway. The sample was random for 80' across the strike. The ridge top has few, if any outcrops. The ridge is 45' ± high and is composed of rock which weathers brown to gray and is a buff to gray dolomite. The dolomite breaks angular near the top where it is thin-bedded, and blocky near the base, where it is more massive. The rock is mapped as the Dunham Dolomite and strikes about north-south. The sample had an AASHO-T-96 abrasion results of 31.1%.
	2	1968	Dolomite	No	Chip	4.0%	Test #2 was sampled 260' north of Test #1. The ridge is about 37' in height up to a flat area, then rises another 30' above the flat area. The test was taken on the south end of the knoll on the ridge north of a saddle. The rock is fairly well-exposed, but has zones where a lot of fracturing has occured. The outcrops extend at least 250' west of the flat area atop the lowest east slope. Test #2 began at the foot of upper slope and ran for 100' across the south end of ridge (north of saddle). The rock is a thinly-bedded or closely jointed, buff to gray-weathered dolomite, which is quite hard and fine-grained. It is somewhat siliceous, breaks angular to blocky, and is more massive than Test #1. It had an AASHO T-96 abrasion result of 28.5%. This area would be a close, suitable source of rock for Item 204.
4	1	1968	Dolomite	No	Chip	4.8%	Owner: Donald Severy. Area is a wooded ridge which is north of the George Dutton property and west of Town Highway No. 31. The rock is mapped as the Winooski Dolomite and occurs on a wooded ridge with 20'-25' relief. It was sampled near the proposed location of the Project Line. The rock is a dark gray-to buff gray-weathered, siliceous dolomite; white to

TABLE II

BRANDON ROCK DATA SHEET NO. 3

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							buff, pink, or cream, on a fresh surface. It breaks blocky to angular and is quite hard. A thin zone (3'±) of gray, phyllitic and siliceous dolomite occurs. Test #1 was taken randomly for 75' across the strike, beginning on the east side. The beds of dolomite vary from 4"-12" and have some siliceous partings. The beds dip east from 60° to nearly vertical. Test #1 had an AASHO T-96 abrasion result of 28.7%.
	2	1968	Dolomite	No	Chip	2.5%	Test #2 was a random sample taken from 75'-150' across the strike. It had an AASHO T-96 abrasion result of 35.0%.
5	1	1968	Limestone & Dolomite	No	Chip	4.2%	Owner: Donald Howland. The area is a rocky knoll, trending nearly north-south located southeast of State Aid Highway No. 5. The rock is mostly a blue-gray, somewhat thin-bedded limestone with a 3'-5' thick band of dolomite cutting across the strike at about N20°W. This may be at or near the contact between the Shelburne Formation and the underlying Clarendon Springs Dolomite. The limestone breaks angular and the dolomite nearly blocky. Test #1 was sampled from random outcrops across the strike for a distance of 275' and a drop in elevation of 35' from southeast to northwest. There is plenty of rock and relief in this area for a crushed rock quarrying operation. The owner would sell. The sample had an AASHO T-96 abrasion result of 30.2%.
6	1	1968	Limestone & Dolomite	No	Chip	5.2%	Owner: B. L. Flanders. This area is a rocky pasture with outcrops that trend nearly north-south. It is located on the northeast side of Town Highway No. 45, 0.5 mile northwest of State Aid Highway No. 7. The rock is very thinly bedded gray to white limestone with 5- to 10-foot thick beds of buff-weathered scored dolomite. The rock appeared to be the Beldens. Test #1 was begun 275' south of fence and just west of low stone wall and continued for 100' at north 37° west across the strike. Due to thin bedding and the fracturing

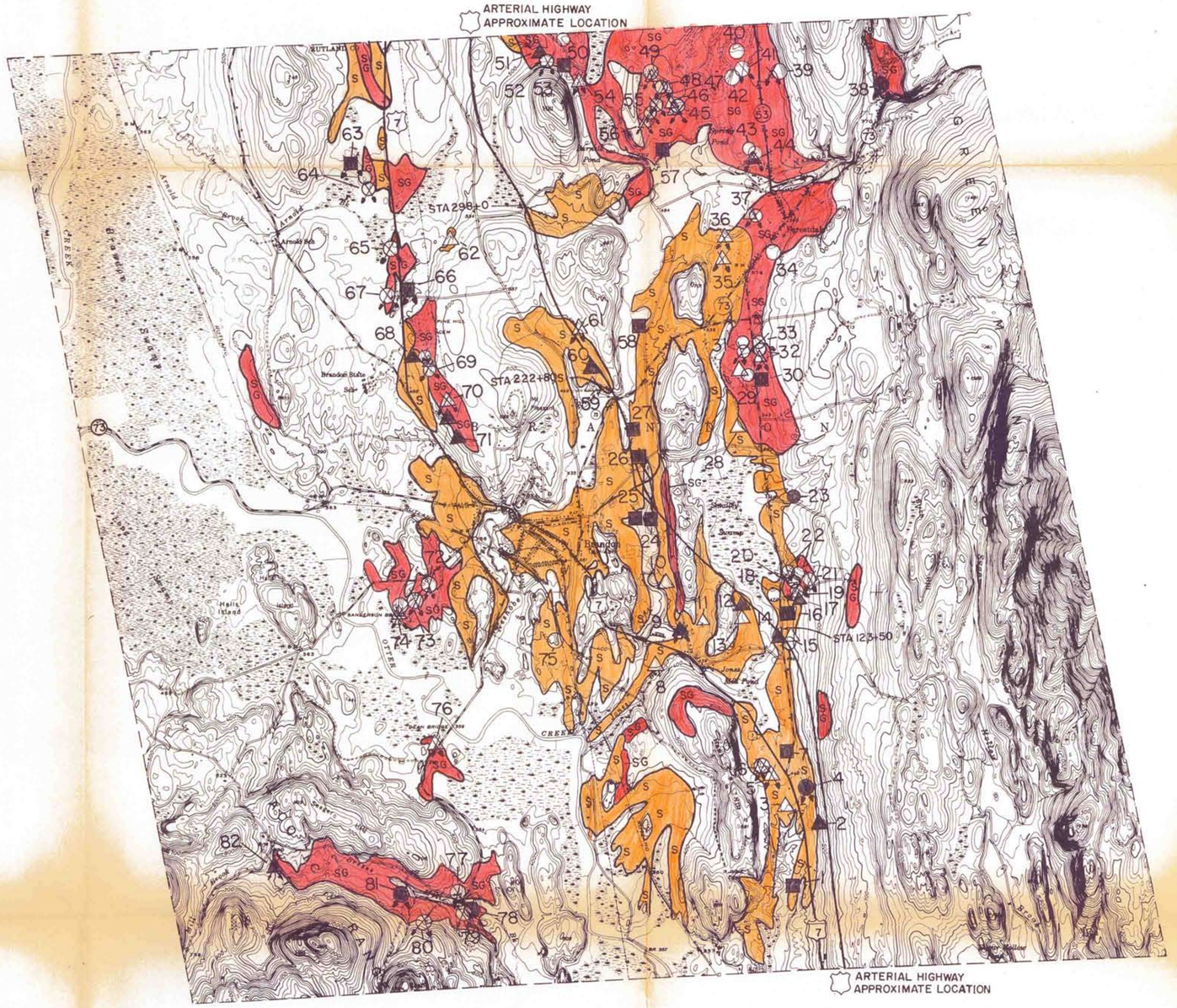
TABLE II

BRANDON ROCK DATA SHEET NO. 4

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Remarks
							it was difficult to get unweathered pieces suitable for the abrasion test. The sample had an AASHO T-96 abrasion result of 28.1%
	2	1968	Limestone & Dolomite	No	Chip	4.4%	Test #2 was sampled northwest of Test #1, from 100' to 200' across the strike. The rock is plentiful. It is quite hard and resembles that of Test #1. There is plenty of rock and from 25'-40' of relief in this area. There are only a few trees. The crushed product of this rock would be mostly thin and sharp, not blocky. The beds dip slightly to the east. An access could be built from Town Highway No. 45 through an orchard about 300' west of an old house. It had an AASHO T-96 abrasion result of 27.7%.

TABLE II
Supplement

BRANDON PROPERTY OWNERS - ROCK	Map Ident. No.
Flanders, B. L.	6
Howland, Donald	5
Marsh, Rodney	3
Otter Valley Union High School	1, 2
Severy, Donald	4



N

LEGEND

- ○ GRAVEL, ACCEPTABLE FOR ITEM 201 (sub-base of gravel)
- ● GRAVEL, DEPLETED OR NOT ACCEPTABLE FOR ITEM 201
- △ SAND, ACCEPTABLE FOR ITEM 202 (sub-base of sand)
- ▲ SAND, DEPLETED OR NOT ACCEPTABLE FOR ITEM 202
- □ GRANULAR BORROW, ITEM 105
- ■ MATERIAL NOT ACCEPTABLE FOR ITEM 105
- ✕ EXISTING PIT
- SG SAND & GRAVEL DEPOSIT
- S SAND DEPOSIT
- 3 IDENTIFICATION NUMBER (refer to data sheets)

BRANDON

SCALE 1:31,250

1 0.5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1969

GRANULAR MATERIALS MAP

BY

VERMONT DEPARTMENT OF HIGHWAYS

IN COOPERATION WITH

U.S. BUREAU OF PUBLIC ROADS

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

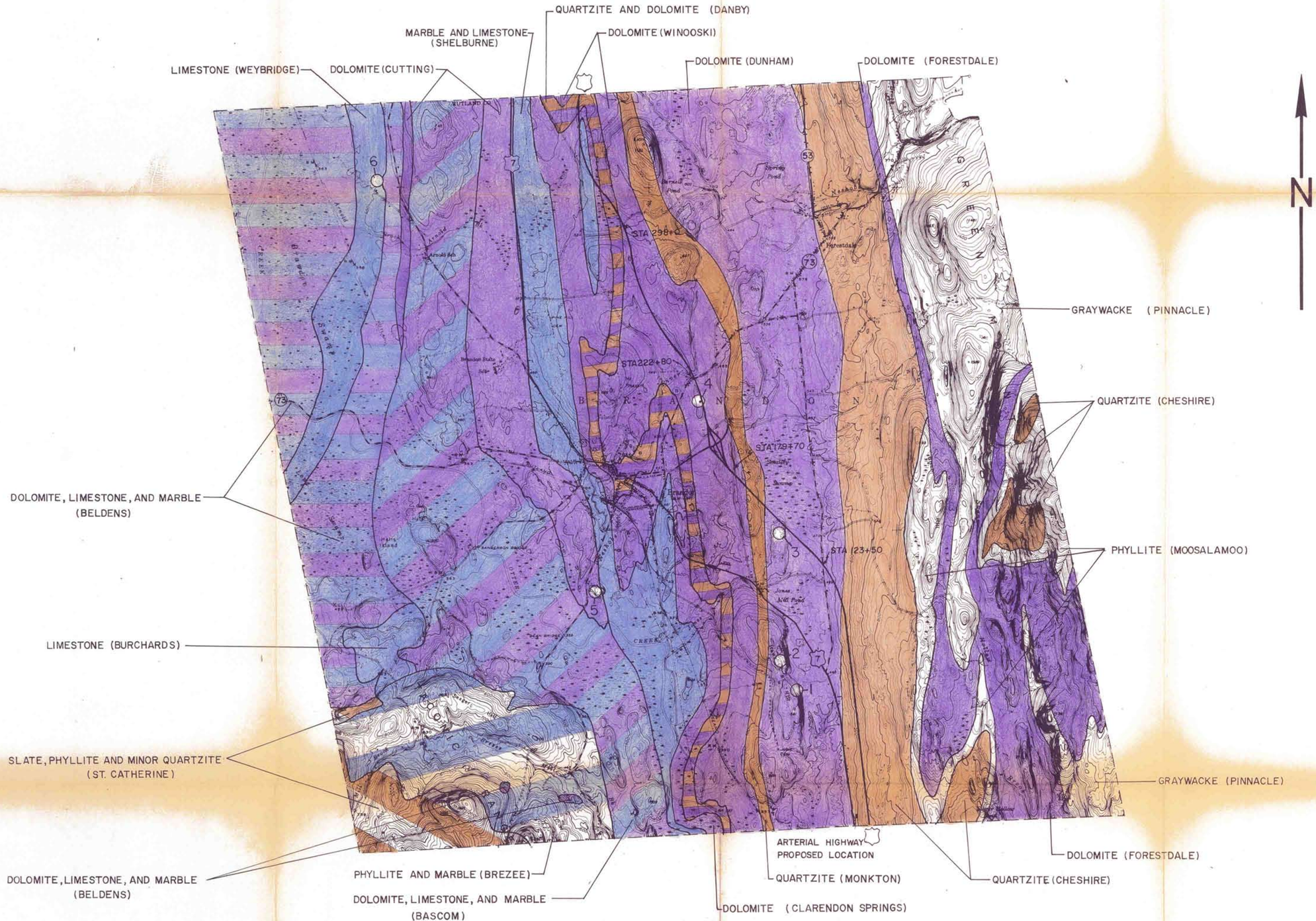
PLATE 1

GRANULAR

RUTLAND COUNTY VT. HWY. DISTRICT NO. 3

REVISIONS

DATE							
BY							



LEGEND

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

BRANDON

SCALE 1:31,250

0.5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1969

ROCK MATERIALS MAP

BY

VERMONT DEPARTMENT OF HIGHWAYS

IN COOPERATION WITH

U.S. BUREAU OF PUBLIC ROADS

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

PLATE II

ROCK

RUTLAND COUNTY VT. HWY. DISTRICT NO. 3

REVISIONS

DATE							
BY							