SURVEY OF HIGHWAY CONSTRUCTION MATERIALS
IN THE TOWN OF READSBORO, BENNINGTON COUNTY, VERMONT

prepared by

Engineering Geology Section, Materials Division

Vermont Department of Highways

in cooperation with

United States Department of Transportation

Federal Highway Administration

Montpelier, Vermont

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Acknowledgements

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 are 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 elimate 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.

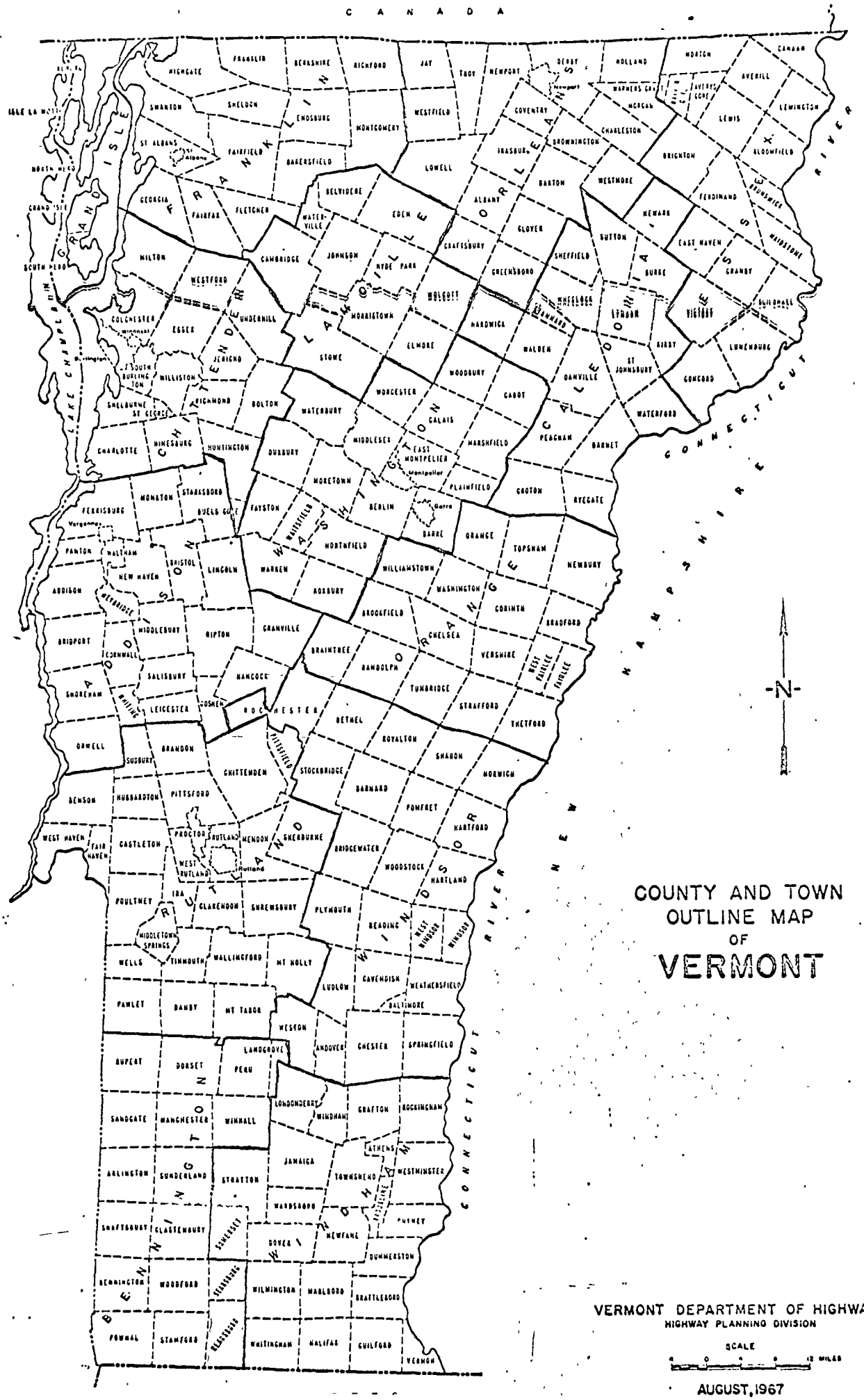
Work sheets contain more detailed information on each test and a detailed sketch of each Identification Number Area. The work sheets and laboratory reports are on file in the office headquarters of this Project.

LOCATION

The town of Readsboro is situated in the southeast corner of Bennington County, at the southern boundary of the state. It is bounded on the south by the Commonwealth of Massachusetts, on the north by Searsburg, on the east by Wilmington and Whitingham, and on the west by Woodford and Stamford. (See County and Town Outline Map of Vermont on the following page.)

Readsboro lies within the Green Mountain Subdivision of the New England Physiographic Province; its topography is characterized by north-to-south trending mountains with sharp crests and steep slopes. Elevations vary from 3,119 feet, at the summit of an unnamed mountain in the north-central part of the town, to 1,102 feet at the high-water level of Sherman Reservoir in the southeast corner of the town.

Principal drainage flows southeast via the West Branch and South Branch of the Deerfield River. Howe Pond, in the west-central part of town, is the only notable body of water in Readsboro.


CANADA
NEW YORK
NEW HAMPSHIRE
CONNECTICUT RIVER
LAKE CHAMPLAIN
GRAND ISLE
FRANKLIN
LAMOILLE
ORLEANS
ESSEX
CHITTENDEN
WASHINGTON
ORANGE
CALEDONIA
WINDSOR
ADDISON
RUTLAND
WINDHAM
BENNINGTON
N
COUNTY AND TOWN
OUTLINE MAP
OF
VERMONT
VERMONT DEPARTMENT OF HIGHWAYS
HIGHWAY PLANNING DIVISION
SCALE
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 should be noted that information on the Rock Materials Map is somewhat simplified. (For a more detailed description of the respective rock formations, see the Summary included in this report.) Complex metamorphic rocks comprise most of the lithology within the town of Readsboro.

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

The southern three-quarters of the town are underlain principally by schists of the Cavendish and Hoosac formations, with a few isolated stringers of Sherman marble and dolomite. The northeast and northwest corners of town are underlain by gneisses, of the Mt. Holly and Cavendish formations, which could yield suitable construction material; but there was no access into these heavily-wooded areas.

Four areas north of Town Highway No. 29 were sampled; three of these were in the Amphibolite of the Hoosac formation. One yielded material acceptable for Crushed Stone for Sub-Base, Item 704.06; the other two areas had material which was unacceptable; however, excavation may produce acceptable rock. The fourth area, mapped as Hoosac Amphibolite, yielded acceptable material from a gneiss similar to that of the Mt. Holly formation.

One area west of Town Highway No. 30 yielded feldspathic mica-schist of the Hoosac formation which was unacceptable as a source of crushed stone for sub-base.

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 Deposits

According to Stewart and MacClintock, depositional features productive of granular materials in Readsboro are of glaciofluvial origin. These are a spillway outwash, that was emplaced southeast of the villages of Heartwellville and Readsboro, and a kame terrace and several kames along the headwaters of the South Deerfield River.

Three small kames are mapped south of Howe Pond, but are surrounded by a swamp, and were not sampled because of inaccessibility.

The kames and a kame terrace along the South Deerfield River were sampled at a number of nearly depleted pits. Appreciable amounts of granular material appear only at Map Identification Number 14 and at Map Identification Number 10, which is a new, undeveloped source.

The spillway outwash was at least twice as extensive as the kamic deposition in Readsboro. In the vicinity of Readsboro Village, the most notable outwash underlies an old ballfield at Map Identification Number 8. Near Heartwellville, Map Identification Numbers 1 and 2 appear to be good sources but Number 2 was undergoing heavy exploitation at the time of the survey, and the material was running fine. Map Identification Number 1 has coarse material (bouldery) and would require access across the river.

All the known pits lying outside of Stewart-MacClintock glaciofluvial features are depleted, and were sampled with the exception of the one at Map Identification Number 3, which had no access across the West Branch of the Deerfield River.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF READSBORO

Chesire formation: Very massive, white to faintly pink or buff vitreous quartzite near the top in west-central and southwestern Vermont.

Hoosac formation: Quartz-sericite-albite-chlorite schist characterized by albite porphyroblasts - biotite and garnet porphyroblasts common southward; locally carbonaceous. Amphibolite and actinolitic greenstone.

Mount Holly complex: Mainly fine - to medium - grained biotite gneiss, locally muscovitic, and in western areas chloritic; massive and granitoid in some localities; fine-grained, or schistose and compositionally layered in others; also abundant amphibolite and hornblende gneiss and minor beds of mica schist, quartzite and calc-silicate granulite; includes numerous small bodies of pegmatite and gneissoid granitic rock.

Readsboro member of the Cavendish formation: Quartz-muscovite schist containing biotite or chlorite and characterized by conspicuous porphyroblasts of sodic plagioclase.

Sherman marble member of the Cavendish formation: Buff dolomite; minor white to pink calcite marble.

GLOSSARY OF SELECTED GEOLOGIC TERMS

Actinolitic - Pertaining to a variety of amphibole, occurring in greenish bladed crystals or in masses.

Albite - The sodium end member of the plagioclase feldspar group, light-colored and found in alkali rocks.

Amphibolite - A metamorphic rock, the distinguishing characters of which are that they consist partly or largely of amphibole (i.e. tremolite, actinolite, hornblende or arfvedsonite), and that they possess a more or less pronounced schistose structure. Color varies from green to black.

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

Biotite - The mineral commonly known as black mica.

Carbonaceous - Containing carbon.

Chlorite - A general designation for a group of hydrous silicates of magnesium and iron, with or without aluminum, so named because of their green color.

Conglomerate - The consolidated equivalent of gravel. The constituent rock and mineral fragments may be of varied composition and of a wide size range. The matrix of finer material between the larger fragments may be sand, silt, or any of the common natural cementing materials such as calcium carbonate, silica, clay, or iron oxide.

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

Drainage - The manner in which the water of an area passes off by surface and rivers, or by subsurface channels.

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

Glacio-fluvial - A term used to denote formation by or relation to streams within, upon or emerging from 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.

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Granulite - According to the current usage of the term in Europe, a granulite is a quartz-feldspar rock of high metamorphic grade, poor or lacking in mica, and characterized structurally by a single regular plane of schistosity, which is easily visible to the eye. The schistosity is determined mainly by parallel orientation of flat lenses of coarse-grained quartz set in a quartzose matrix of smaller equidimensional grains. The term has appeared in older literature with a variety of other meanings and should not be used without explanation.

Greenstone - A field name for rocks that have been so metamorphosed or otherwise so altered that they have assumed a distinctive color owing to the presence of chlorite, epidote, or actinolite.

Hornblende - A common member of the amphibole group of minerals. The color is usually black, dark-green, or brown. The hardness is 5 to 6 and the specific gravity about 3.0. The mineral commonly occurs in prismatic masses and is found in both igneous and metamorphic rocks.

Kame - A conical hill of stratified drift, deposited at a glacial terminus by glacial streams flowing in or on the ice.

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

Ledge - A shelf-like ridge or projection of rock, usually horizontal and much longer than high.

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

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

Pegmatite - A vein-, pipe-, dike-like, or irregular igneous body associated with large intrusives of similar composition. It is characterized by large average grain size, interlocking texture, and unusually great range in grain size.

Physiographic - Pertaining to the physical divisions of the earth.

Porphyoblasts - Large crystals which have grown in place within the fine-grained groundmass of a metamorphic rock. They have been formed by action of heat, pressure and infiltrating solutions occuring later than the rocks in which they form.

Quartzite - A firm, compact rock composed of grains of quartz so firmly united that fracture takes place across the grains instead of around them. A metamorphosed sandstone.

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

Sericite - A mineral very similar to, if not identical with, muscovite mica. It occurs in small flakes and scales in metamorphic rocks such as sericite schists and sericite gneisses.

Sodic Plagioclase - A feldspar high in sodium; the mineral albite.

Spillway Gravel - Outwash gravel deposited in a valley that acted as a spillway for a melting glacier.

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

Water Table - The upper limit of the portion of the ground wholly saturated with water.

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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 July, 1971.

DIVISION 700 - MATERIALS

Section 703, Soils and Borrow Materials

703.03 Sand Borrow and Cushion

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

Table 703.03A - Gradation Requirements

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Total Sample	Sand Portion
2"	100	
1½"	90-100	
½"	70-100	
No. 4	60-100	100
No. 100		0- 30
No. 200		0- 12

703.05 Granular Borrow

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

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

Table 703.05A - Gradation Requirements

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Total Sample	Sand Portion
No. 4	20-100	100
No. 200		0- 15

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

Section 704, Aggregate

704.05 Gravel for Sub-base

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

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

Table 704.05A - Gradation Requirements

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves Total Sample	Sand Portion
No. 4	(20-60)	100
No. 100		0-18
No. 200		0- 8

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

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

704.06 Crushed Stone for Sub-base

Crushed Stone for Sub-base shall consist of clean, hard, crushed stone, uniformly graded, reasonably free from dirt, deleterious material, pieces which are structurally weak and shall meet the following requirements:

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

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

Table 704.06A - Gradation Requirements

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

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

(d) Thin and Elongated Pieces
Not more than 30 percent, by weight, of thin and elongated peices will be permitted.
Thin and elongated pieces will be determined on the material coarser than the No. 4 sieve.

(e) Filler

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

(f) Leveling Material

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

This material shall meet the requirements of the following table:

Table 704.06B - Gradation Requirements

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves Total Sample
1"	100
3/4"	90-100
1/2"	50- 90
No. 4	30- 70
No. 100	0- 20
No. 200	0- 10

704.07 Grushed Gravel for Sub-base

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

(a) Grading

The crushed gravel shall be uniformly graded from coarse to fine and shall meet the requirements of the following table:

Table 704.07A - Gradation Requirements

Grading	Sieve Designation	Percentage by Weight Passing Square Mesh Sieves Total Sample	Sand Portion
Coarse	4"	100	
	No. 4	25- 50	100
	No. 100		0- 20
	No. 200		0- 12
Fine	2"	100	
	1½"	90-100	
	No. 4	30- 60	100
	No. 100		0- 20
	No. 200		0- 12

(b) Percent of Wear

The percent of wear of the parent gravel shall be not more than 20 when tested in accordance with AASHO T 4, or the crushed gravel a percent of wear of not more than 35 when tested in accordance with AASHO T 96.

(c) Fractured Faces

At least 30 percent, by weight, of the stone content shall have at least one fractured face.

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

704.09 Dense Graded Crushed Stone for Sub-base

Dense Graded Crushed Stone for Sub-base shall consist of clean, hard, crushed stone, uniformly graded, reasonably free from dirt, deleterious material and pieces which are structurally weak, and shall meet the following requirements:

(a) Source

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

(b) Grading

This material shall meet the requirements of the following table:

Table 704.09A - Gradation Requirements

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

(c) Percent of Wear

The percent of wear of the parent rock shall be not more than 8 when tested in accordance with AASHO T 3, or the crushed stone a percent of wear of not more than 40 when tested in accordance with AASHO T 96.

(d) Thin and Elongated Pieces

Not more than 30 percent, by weight, of thin or elongated pieces will be permitted.

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

704.10 Gravel Backfill for Slope Stabilization

Gravel Backfill for Slope Stabilization shall be obtained from approved sources, consisting of satisfactorily graded, free draining, hard, durable stone and coarse sand reasonably free from loam, silt, clay, and organic material.

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

Table 704.10A - Gradation Requirements

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Total Sample	Sand Portion
No. 4	20-50	100
No. 100		0- 20
No. 200		0- 10

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

704.11 Granular Backfill for Structures

Granular Backfill for Structures shall be obtained from approved sources, consisting of satisfactorily graded, free draining granular material reasonably free from loam, silt, clay, and organic material.

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

Table 704.11A - Gradation Requirements

Sieve Designation	Percentage by Weight Passing Square Mesh Sieves	
	Total Sample	Sand Portion
3"	100	
2½"	90-100	
No. 4	50-100	100
No. 100		0- 18
No. 200		0- 8

Readsboro 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						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
1	1	1973	0-12	---	Yes	84	--	59	44	9	5	7.7%	Gravel	Owner - Walter Zuk Area includes an inactive pit south of the foundation of an old mill about 0.45 mile west of the junction of Vermont Route 8 with Vermont Route 100. Access requires fording the swift-flowing West Branch of Deerfield River and was inaccessible to backhoe at time of survey. Feature tested is a glacio-fluvial gravel. Test No. 1 was in the upper 25' face at the southwest end of the pit. Material tested consisted of loosely consolidated, coarse gravel and boulders, 10% to 20% exceeding 6", with 4" the most frequent size. No stones larger than 3" were sampled.
	2	1973	0-6	---	Yes	---	84	55	40	10	8	6.3%	Gravel	Test No. 2 was in the upper 12' face, 50' north of Test No. 1. Material was similar to that of Test No. 1 and sample bottomed on boulders.
2	1	1973	0-5	---	Yes	89	80	51	37	10	6	11.9%	Gravel	Owner - Walter Zuk Area contains an active shallow pi south of the junction of Vermont Route 8 with Vermont Route 100. Not much gravel remains. Floor of pit was

Readsboro 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						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
														very wet at time of survey.
														Test No. 1 was in 5' face northwest of 600-foot long pond. Material is a dirty gravel with estimated less than 5% coarser than 6". Bottom of face was in water.
	2	1973	0-4.5	---	Yes	96	80	55	40	11	7	12.9%	Gravel	Test No. 2 was in west face of ramp that led to Test No. 1, about 75' south of north end of pond. Material was gravel with interbedded silt and fine sand and bottomed in sloughed material.
	3	1973	2-8	0-2	Yes	91	83	54	37	6	3	7.9%	Gravel	Test No. 3 was in northwest face of east part of pit. From 0-2', face was inaccessible. Horizontally bedded, dirty, fine gravel was sampled.
	4	1973	3-6	0-3	Yes	100	97	72	52	14	8	10.7%	Gravel	Test No. 4 was at northeast corner of southeast face of pit. From 0-3', silty overburden; 3'-6', silty fine gravel was sampled.
	5	1973	1-4	0-1	Yes	100	100	88	68	3	1	----	Sand	Test No. 5 was in floor near southeast face of pit. One foot of strippings overlay three feet of interbedded sand, pebbly sand, fine gravel and silt, with water table at 3 feet.
	6	1973	0-5	---	No	---		NOT	SAMPLED					Test No. 6 was in possible extension, 100' S.50°E. of southeast face of pit. Roots, decaying sod and top soil not in place; therefore, no sample was taken.

Readsboro Granular Data Sheet No. 3

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
	7	1973	3-5	0-3	No	---	100	95	94	13	7	----	Sand	Test No. 7 was in a field 150' S.55°W. of Test No. 6. Three feet of sod and silty sand overlay two feet of horizontally bedded silty sand. Water table was at 5'.
3	--	1973	---	---	Yes		Not	Sampled						Owner - Victor Allen Area is a borrow pit west of West Branch of Deerfield River about 0.4 mile north of the junction of Town Highway No. 4 with Vermont Route 100. Due to high river levels and swift moving current the inaccessible area was not sampled.
4	1	1973	1.5-9	0-1.5	Yes	100	87	74	68	43	27	----	-----	Owner - Fred Barkus Area is a depleted borrow pit north of Town Highway No. 29 near the Whitingham town line. Test No. 1 was dug with backhoe at east end of middle level of pit. Material is 0-1.5', overburden; 1.5'-2.5', gravel; 2.5'-9.0', till (silt, clay, rock fragments, etc.).

Readsboro 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						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
	2	1973	2-7.5	0-2	Yes	---	89	77	63	12	4	----	Gran. Borrow (Sand)	Test No. 2 was in small face at southwest corner of pit. Interbedded fine gravel and sand with silt seams bottom on clay at 7.5'.
5	1	1973	2-8	0-2	Yes	87	83	62	46	15	11	21.2%	Gran. Borrow (Gravel)	Owner - Jim Sprague Area is a pit northeast of cemeter on Town Highway No. 23. A bridge is needed for steep access road which is very near the cemetery. Test No. 1 was in northeast face at central part of diggings. Material is: 0-2', overburden; 2'-8', dirty, poorly sorted gravel; 8'-12', not exposed.
6	1	1973	1-6	0-1	Yes	---	100	--	54	31	20	----	-----	Owner - Osias Berard Area is an overgrown depleted pit at southeast edge of a cemetery near the junction of Town Highway No. 308 with Town Highway No. 310, floors and all faces were heavily overgrown, with large boulders showing.

Readsboro 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						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
														Test No. 1 was taken in the face below the upper floor at the north-east corner of the pit. Material from 1-6 was silt with angular stones Test bottomed on sloughed material.
7	1	1973	2-12	0-2	Yes	---	97	--	71	49	36	----	----	Owner - Howard N. Phelps Area is a depleted pit at east end of Town Highway No. 22. Any further development is limited by bedrock just under the stripped extension. Test No. 1 was in upper 40' north-west face. Material is: 2'-12', silt and stones. Test bottomed on ledge.
8	1	1973	2-25	0-2	Yes	88	68	50	37	10	6	8.1%	Gravel	Owner - New England Power Company Area is an unused ballfield with pits at northwest and southeast corners. Area is south of Town Highway No. 13 about 1½ miles from Vermont Route 100.

Readsboro 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						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
														Test No. 1 was taken in the north face of the northwest pit near the access road and was a horizontally bedded, fairly clean, cobbly gravel, but has no extension.
	2	1973	1.5-7	0-1.5	Yes	90	73	53	41	8	5	16.1%	Gravel	Test No. 2 was taken in the northwest face of the southeast pit. Material was a coarse, dirty gravel with most stones from 3" to 6".
	3	1973	1.5-9	0-1.5	No	78	71	48	34	12	8	19.0%	Gravel	Test No. 3 was near southwest corner of the field, about 50' north of tree line. Material was: 0-1.5', overburden; 1.5'-3', coarse cobbly gravel; 3'-9', boulders and cobbly gravel; bottom, boulders.
	4	1973	1.5-9	0-1.5	No	75	63	46	31	14	7	19.3%	Gravel	Test No. 4 was in field, 260' S.45° E. of Test No. 3. Material was: 0-1.5', overburden; 1.5'-5', brown coarse gravel; 5'-8', gray coarse gravel; 8'-9', boulders.
	5	1973	1.5-10	0-1.5	No	78	62	45	32	11	6	17.9%	Gravel	Test No. 5 was in field, 190' N.5°E. of Test No. 3. Material was: 0-1.5', overburden; 1.5'-7', well-packed gravel; 7'-8', boulders; 8'-10', bouldery gravel.
	6	1973	1.5-3	0-1.5	No	77	--	50	33	11	7	20.0%	Gravel	Test No. 6 was located in field, 310' S.60°E. of Test No. 5. Material was: 0-1.5', overburden; 1.5'-3', gravel; water table at 2'. Many stones larger than 4" were noted.

Readsboro 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 2"	1½"	½"	#4	#100	#200	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	7	1973	1-10	0-1	No	---	80	62	48	7	3	20.2%	Gravel	Test No. 7 was in middle of field, 130' S.65°W. of Test No. 6. Material was: 0-1', overburden; 1'-6', bouldery gravel; 6'-9', fine gravel; 9'-10', gravelly sand; water table at 10'.
	8	1973	2-8	0-2	No	78	74	51	32	12	7	19.2%	Gravel	Test No. 8 was in overgrown orchard, 200' N.67°W. of Test No. 3. Material was: 0-2', overburden; 2'-8', coarse hard-packed gravel; 8'-?, boulders.
	9	1973	2-5	0-2	No	NOT	SAMPLED							Test No. 9 was near woods road, about 250' N.20°W. of Test No. 8. Backhoe test to 5' encountered only boulders, so no sample was taken.
	10	1973	1-6	0-1	No	---	--	--	100	21	9	---	Sand	Test No. 10 was near river, 220' S.7°E. of, and 15' below Test No. 3. Material was: 0-1', overburden; 1'-6', clean tan sand; 6'-?, boulders.
9	1	1973	1-6	0-1	Yes	---	100	--	74	33	21.5	---	---	Owner - Eliasen (Formerly: Shippee) Area is a depleted pit west of Town Highway No. 9 about 0.2 mile south of its junction with Town Highway No. 14. Test No. 1 was in north face of pit. Material was: 1'-6', silty fine sand with angular stones.

Readsboro Granular Data Sheet No. 8

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing 2"	1½"	½"	#4	#100	#200	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
10	1	1973	0.5-5	0-0.5	No	---	83	58	45	6	2	18.7%	Gravel	Owner: Silas Bergstad Area is a heavily brush-covered field north of the south branch of the Deerfield River, 0.36 mile north-west of Town Highway No. 9. Test No. 1 was 25' S.10°E from New England Tel. and Tel. pole No. 54. Material was: 0-0.5', overburden; 0.5'-4', fine gravel with silt seams; 4'-5', cobbly gravel; water table at 5'.
	2	1973	1-4.5	0-1	No	79	70	61	50	20	8	18.9%	Gran. Borrow (Gravel)	Test No. 2 was in field, 45' N.75°W. of Test No. 1. Material was: 0-1', overburden; 1'-4.5', sandy gravel; water table at 4.5'.
	3	1973	0.5-6	0-0.5	No	82	78	54	36	7	4	17.7%	Gravel	Test No. 3 was about 15' east of river, and 25' S.40°W. of Test No. 2. Material was: 0-0.5', overburden; 0-0.5', overburden; 0.5'-5.5', fine gravel with cobbles; 5.5'-6', cobbles
	4	1973	1-5	0-1	No	100	97	70	55	12	6	13.5%	Gravel	Test No. 4 was 110' S.35°E. of Test No. 3. Material was: 0-1', overburden; 1'-4', pebbly sand; 4'-5', gravel; water table at 5'.
	5	1973	1-3	0-1	No	85	72	53	39	16	9	16.0%	Gran. Borrow (Gravel)	Test No. 5 was 170' S.35°E. of Test No. 4. Material was: 1'-2', silty sand; 2'-3', fine gravel; bottom, cobbly gravel and water.

Readsboro Granular Data Sheet No. 9

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing 2"	1½"	½"	#4	#100	#200	Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
	6	1973	0.5-3	0-0.5	No	89	78	50	36	13	7	16.1%	Gravel	Test No. 6 was 125' S.75°E. of Test No. 5. Material was: 0-0.5', overburden; 0.5'-3', fine tabular gravel; bottom, cobbly gravel and water.
	7	1973	0.5-3	0-0.5	No	89	77	55	41	14	6	14.8%	Gravel	Test No. 7 was at narrow, south end of field; 180' S.45°E. of Test No. 5. Material was: 0-0.5', overburden; 0.5'-1.5', silty sand; 1.5'-2.5', fine gravel and silt; 2.5'-3'+, cobbly gravel in water table.
11	1	1973	1-4	0-1	Yes	---	86	--	54	25	16	----	----	Owner - James Bowen Area is a depleted pit opposite cemetery on Town Highway No. 14 southeast of its junction with Town Highway No. 15. Test No. 1 was in face at northwest corner of pit. Material was: 1'-4', silt and stones.
12	1	1973	1.5-5	0-1.5	Yes	---	100	90	74	2	1	----	Sand	Owner - Jack Smith Area is a depleted pit northwest

Readsboro Granular Data Sheet No. 10

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
														of Town Highway No. 15; access is 0.27 mile south of its junction with Town Highway No. 14. Test No. 1 was on 5-foot west face. Material was: 0-1.5', overburden; 1.5'-4.5', pebbly sand. 4.5'-5', fine gravel and coarse sand.
13	1	1973	1-9	0-1	Yes	---	--	100	98	22	5	----	Sand	Owner - William S. Grainger Area is a possibly depleted pit north of Town Highway No. 14 that has access road to east side of Town Highway No. 7 about 0.15 mile from its junction with Town Highway No. 14. Test No. 1 was in 18' northwest face of upper level. Material was: 1'-9', fine or silty sand; 9'-18', sloughed material.
	2	1973	1.5-8	0-1.5	Yes	---	86	75	66	15	5	----	Sand	Test No. 2 was in face below upper level, 100' east of Test No. 1. Material was: 0-1.5', overburden; 1.5'-8.5', fine sand with pebble lenses.
	3	1973	1.5-15	0-1.5	Yes	---	100	89	85	8	2	---	Sand	Test No. 3 was in face below middle level, 40' east of Test No. 2.

Readsboro Granular Data Sheet No. 11

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
														Material was: 0-1.5', overburden; 1.5'-10', sand and silt lenses; 10'-11', boulders; 11'-15', coarse sand.
	4	1973	1-8	0-1	Yes	---	91	81	68	14	5	----	Sand	Test No. 4 was in face below lower level, 50' south of, and 10' below bottom of Test No. 3. Materia was: 1'-8', pebbly sand.
14	1A	1973	3-11	0-3	Yes	---	--	--	100	25	9	----	Sand	Owner - Andrew Barnes Area is a smoothed-over pit north northwest of the junction of Town Highway Nos. 14 and 18. Test No. 1A was in upper north face of lower level. Material was: 0-3', overburden; 3'-11', sand with silt and pebble seams.
	1B	1973	11-14	0-3	Yes	---	--	--	100	71	40	----	----	Test No. 1B was below Test No. 1A material from 11'-14' was silty sand.

Readsboro Granular Data Sheet No. 12

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
	2	1973	0.5-5	0-0.5	Yes	75	71	57	41	8	4	17.5%	Gravel	Test No. 2 was located in floor, 140' S.55°W. of Test No. 1B. Material was: 0-0.5', overburden; 0.5'-3', gravelly sand; 3'-5', sand (much water at 3'); bottom, gravelly sand.
15	1	1973	1-5	0-1	Yes	---	55	39	29	13	6	----	Gran. Borrow	Owner - Robert O'Donnell Area contains a low, sprawling depleted pit west of the junction of Town Highway No. 18 with Town Highway No. 14. Test No. 1 was in the northwest face. Material was a gravelly, ill-sorted till that bottomed in water.
16	1	1973	1-11	0-1	Yes	---	--	--	100	66	44	----	----	Owner - Robert O'Donnell Area is a nearly depleted borrow pit in the woods about 0.1 mile west of Map Identification No. 15. Test No. 1 was in the north face. Material was silty fine sand with silt lenses.

Readsboro Granular Data Sheet No. 13

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHO T-4-35	Passes VHD Spec.	Remarks
						2"	1½"	½"	#4	#100	#200			
17	1A	1973	1.5-7	0-1.5	Yes	86	77	57	43	9	5	15.6%	Gravel	Owner - Charles Ross Estate Area is a small pit in the woods north of Town Highway No. 18, about 0.1 west of its junction with Town Highway No. 17. The best direction for development would be northwestward from the north face. Test No. 1A was in low southwest face. Material is: 1.5'-7', gravel; bottom, boulders.
	1B	1973	7-11	0-1.5	Yes	---	79	62	48	22	13	23.5%	Gran. Borrow (Gravel)	Test No. 1B was below Test No. 1A. Material was: 7'-9', gravel; 9'-10', sand; 10'-11', silty sand; bottom, silt to clay with angular rock fragments.
	2	1973	2.5-7	0-2.5	Yes	73	68	50	36	14	8	20.6%	Gravel	Test No. 2 was in small clearing on knoll, about 50' N.50°W. of Test No. 1. Material was: 0-2.5', overburden; 2.5'-7', gravel with silt seams; bottom, boulders.

TABLE I
SUPPLEMENT

READSBORO PROPERTY OWNERS - GRANULAR	MAP IDENTIFICATION NO.
Allen, Victor	3
Barkus, Fred	4
Barnes, Andrew	14
Berard, Osias	6
Bergstad, Silas	10
Bowen, James	11
Eliasen	9
Grainger, William S.	13
New England Power Company	8
O'Donnell, Robert	15, 16
Phelps, Howard N.	7
Ross, Charles estate	17
Smith, Jack	12
Sprague, Jim	5
Zuk, Walter	1, 2

READSBORO ROCK DATA SHEET NO. 1

Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Abrasion AASHO T-96	Remarks
1	1A	1973	Schist	No	Chip	10.2%	54.9%	Owner - Moses Gunn Area is a hillside pasture west of Town Highway No. 30, about a mile south of its junction with Town Highway No. 10. Several outcrops of thin-bedded gneiss interbedded with feldspathic mica-schist of the Hoosac formation were sampled at the northeast end of the field. Test 1A was taken at random from the southeast end of the area at the road from 0-100' in a N.25°W. direction. Rock was not acceptable for Crushed stone for Sub-base.
	1B	1973	Schist	No	Chip	10.2%	63.9%	Test 1B was taken at random along the same bearing from 100'-200' toward the northwest corner of the field. Rock was not acceptable for Crushed stone for Sub-base.
2	1A	1973	Schist	No	Chip	8.1%	40.8%	Owner - Donald Snyder Area is a wooded hillside north of Town Highway No. 29 about 0.6 mile east of its junction with Vermont Route 100. A 200-foot long exposure of amphibolitic quartz-sericite schist of the Hoosac formation outcrops as a scarp which trends roughly N.25°W. Foliation strikes N.75°W. and dips 25° to the northeast. Exposures were heavily jointed and weathered; however, characteristics may get better deeper into bedrock. There would have to be improvement of Town Highway No. 29 if a quarry were opened at this site.

READSBORO ROCK DATA SHEET NO. 2

Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Abrasion AASHO T-96	Remarks
								Test No. 1A was from the northwest end of the outcrop to a point 100' southeast. Material sampled at random along the outcrop.
	1B	1973	Schist	No	Chip	8.8%	40.2%	Test No. 1B was a continuation along the outcrop from 100' to 200' at the southeast end.
3	1A	1973	Schist	No	Chip	6.1%	31.8%	Owner - Riki Moss Area is deciduous woodland of low relief and scattered lumpy mounds. The visible outcrop is about 100' long, and 20' to 30' wide; extensive weathering made strike and dip unobtainable. Rock is a limonite-stained, amphibolitic quartz-sericite schist of the Hoosac formation, and breaks along the flow planes. This source would be very difficult to develop. Test No. 1A was from the north end of the outcrop to a point 50' S.25°E. Material was sampled at random along the outcrop.
	1B	1973	Schist	No	Chip	6.7%	31.5%	Test No. 1B was a continuation along the outcrop from 50' to 100' at the southeast end.

READSBORO ROCK DATA SHEET NO. 3

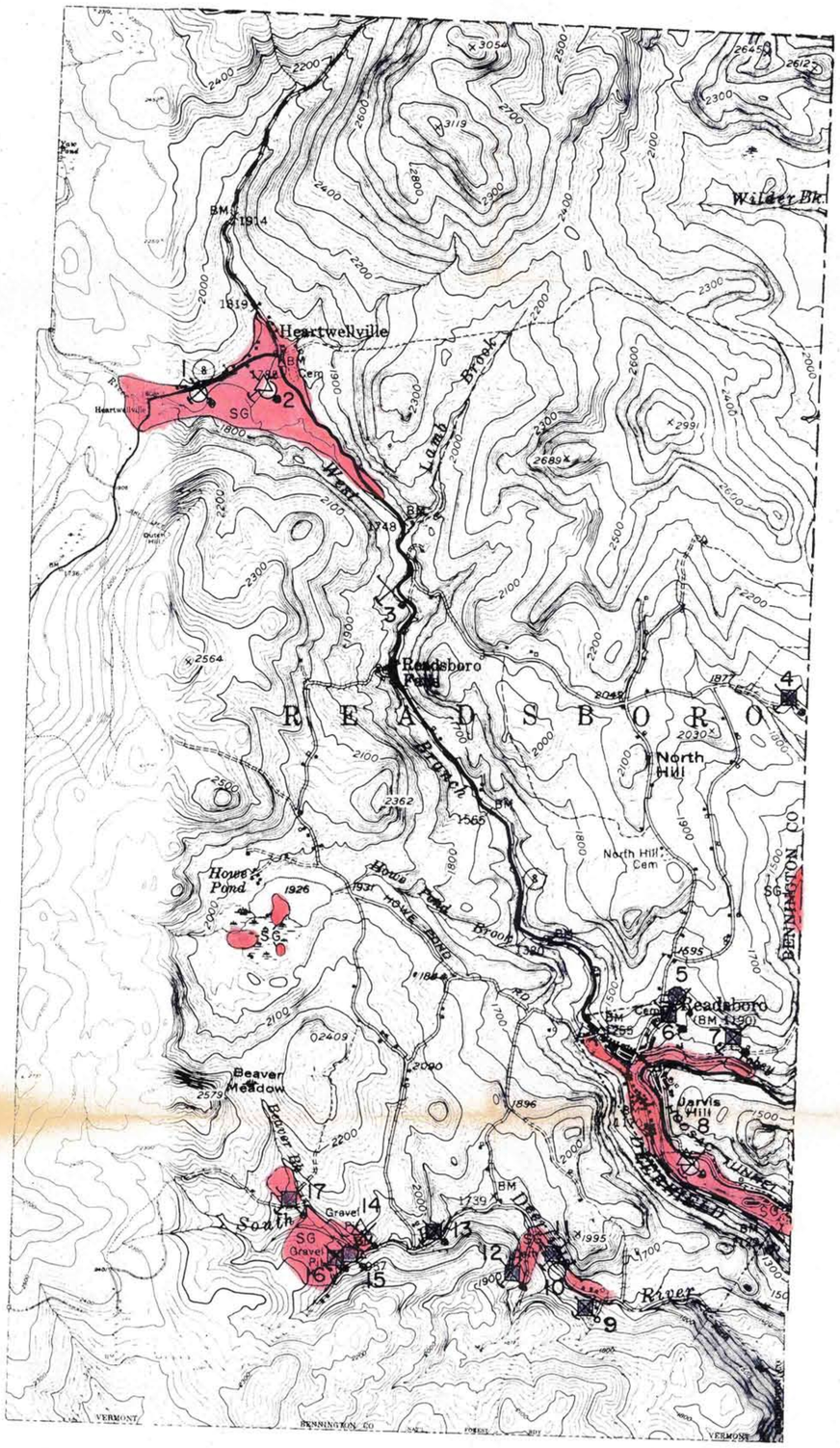
Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Abrasion AASHO T-96	Remarks
4	1A	1973	Amphibolite	No	Chip	3.5%	58.0%	Owner - Jospeh Beaulieu Area is a low outcrop which curves through woodland north of Town Highway No. 29, about 0.2 mile west of the 4-corners intersection. Gneissic character of the rock gives it a greater toughness than rock from other areas in the town. Rock was mapped as the Hoosac amphibolite. Because outcrop is only 10-15 feet high, and land surface slopes gently uphill to the north, this area would be difficult to develop. Test No. 1A was sampled at random from the northwest end of the outcrop to a point about 100' southeast.
	1B	1973	Amphibolite	No	Chip	4.9%	52.5%	Test No. 1B was a continuation along the outcrop from 100' to 200' at the southeast end.
5	1A	1973	Schist	No	Chip	9.0%	44.5%	Owner - Joseph Beaulieu Area is an outcrop in beech woodland north of Town Highway No. 29 about 0.08 mile west of the 4-corners intersection. Outcrop occurs as a west-facing, north-trending escarpment of limonite-stained amphibolitic quartz-sericite schist of the Hoosac formation. There is adequate volume here for a quarry operation, but thin foliation has an adverse affect on the hardness of the rock.

READSBORO ROCK DATA SHEET NO. 4

Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHO T-3	Abrasion AASHO T-96	Remarks
	1B	1973	Schist	No	Chip	9.7%	43.2%	Test No. 1A was sampled at random from the north end of the outcrop to a point 150' south. Test No. 1B was a continuation southward along the outcrop from 150' to 300'.

TABLE II
SUPPLEMENT

READSBORO PROPERTY OWNERS - ROCK	MAP IDENTIFICATION NO.
Beaulieu, Joseph	4, 5
Gunn, Moses	1
Moss, Riki	3
Snyder, Donald	2



N

LEGEND

- ○ GRAVEL, ACCEPTABLE FOR SEC. 704.05 (gravel for sub-base)
- ● GRAVEL, DEPLETED OR NOT ACCEPTABLE FOR SEC. 704.05
- △ SAND, ACCEPTABLE FOR SEC. 703.03 (sand borrow and cushion)
- ▲ SAND, DEPLETED OR NOT ACCEPTABLE FOR SEC. 703.03
- □ GRANULAR BORROW, SEC. 703.05
- ■ MATERIAL NOT ACCEPTABLE FOR SEC. 703.05
- ✕ EXISTING PIT
- SG SAND & GRAVEL DEPOSIT
- S SAND DEPOSIT
- 3 IDENTIFICATION NUMBER (refer to data sheets)

READSBORO

SCALE 1:31,250

.5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1973

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

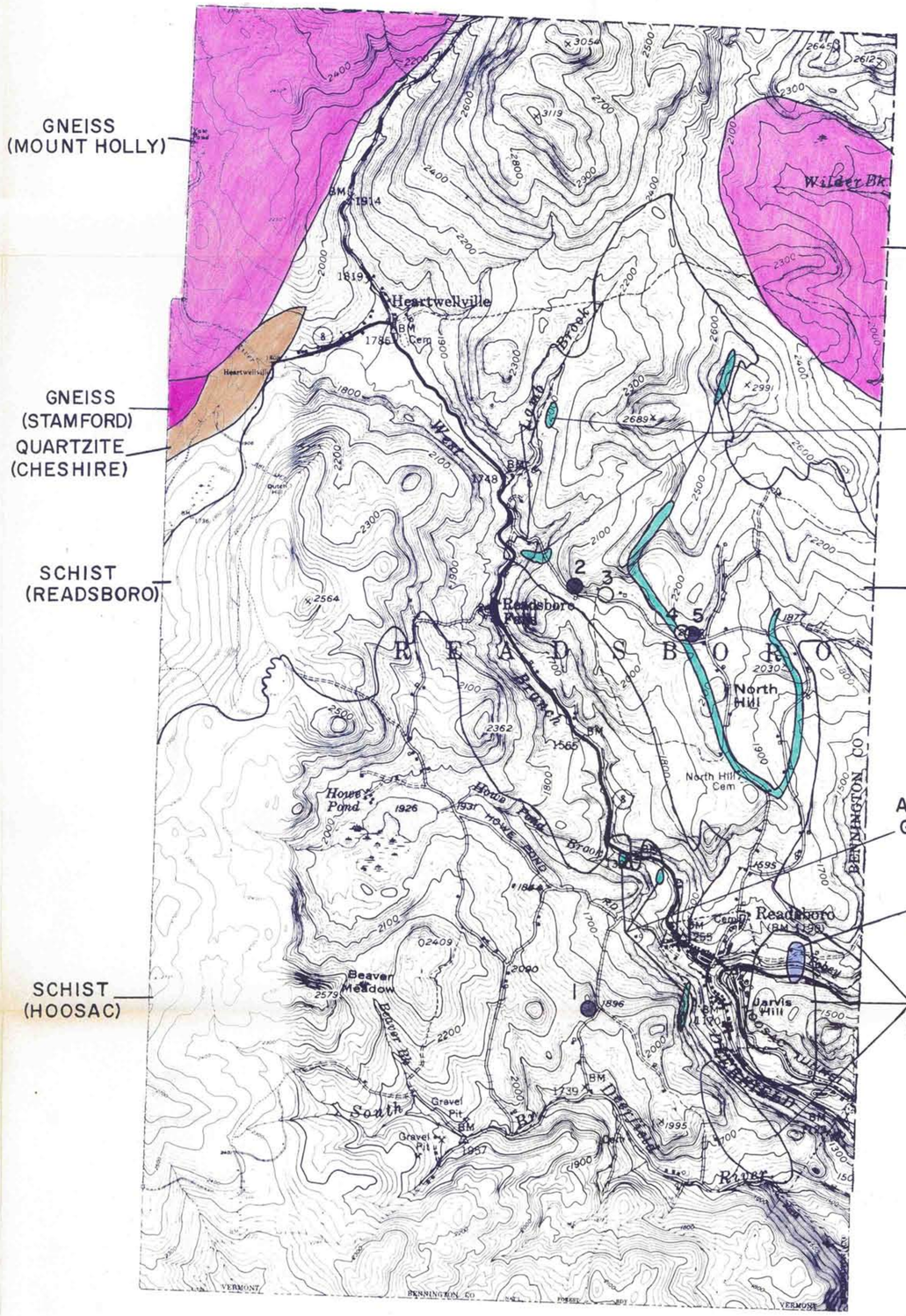
PLATE 1

GRANULAR

BENNINGTON COUNTY VT. HWY. DISTRICT NO. 1

REVISIONS

DATE						
BY						



LEGEND

- ROCK, ACCEPTABLE FOR SEC. 704.06 (crushed stone for sub-base)
- ROCK, NOT ACCEPTABLE FOR SEC. 704.06
- EXISTING QUARRY
- GRANITE TO DIORITE (light to intermediate igneous rocks)
- AMPHIBOLITE, GABBRO, DIABASE, METADIABASE, GREENSTONE, TRAP DIKES (basic or dark igneous rocks)
- PERIDOTITE, PYROXENITE, SERPENTINITE (ultra-basic igneous rocks)
- GNEISS
- QUARTZITE
- DOLOMITE
- MARBLE, LIMESTONE
- SCHISTS, SLATES, PHYLLITES, SHALES, CONGLOMERATES
- 3 IDENTIFICATION NUMBER (refer to data sheets)

READSBORO

SCALE 1:31,250

1 .5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1973

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

BENNINGTON COUNTY VT. HWY. DISTRICT NO. 1

REVISIONS

DATE						
BY						