SURVEY OF HIGHWAY CONSTRUCTION MATERIALS

IN THE TOWN OF HUNTINGTON, CHITTENDEN COUNTY, VERMONT

Prepared By

STATE OF VERMONT
AGENCY OF TRANSPORTATION
MATERIALS & RESEARCH DIVISION
ENGINEERING GEOLOGY SUBDIVISION

Montpelier, Vermont
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State of Vermont
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Acknowledgments

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

History

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

The sources of construction materials are located by this Project through ground reconnaissance, study of maps and aerial photographs, and geological and physiographic interpretation. Maps, data sheets and work sheets furnish information of particular use to contractors and construction personnel, and should be studied together for maximum benefit.

Enclosures

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

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

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

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

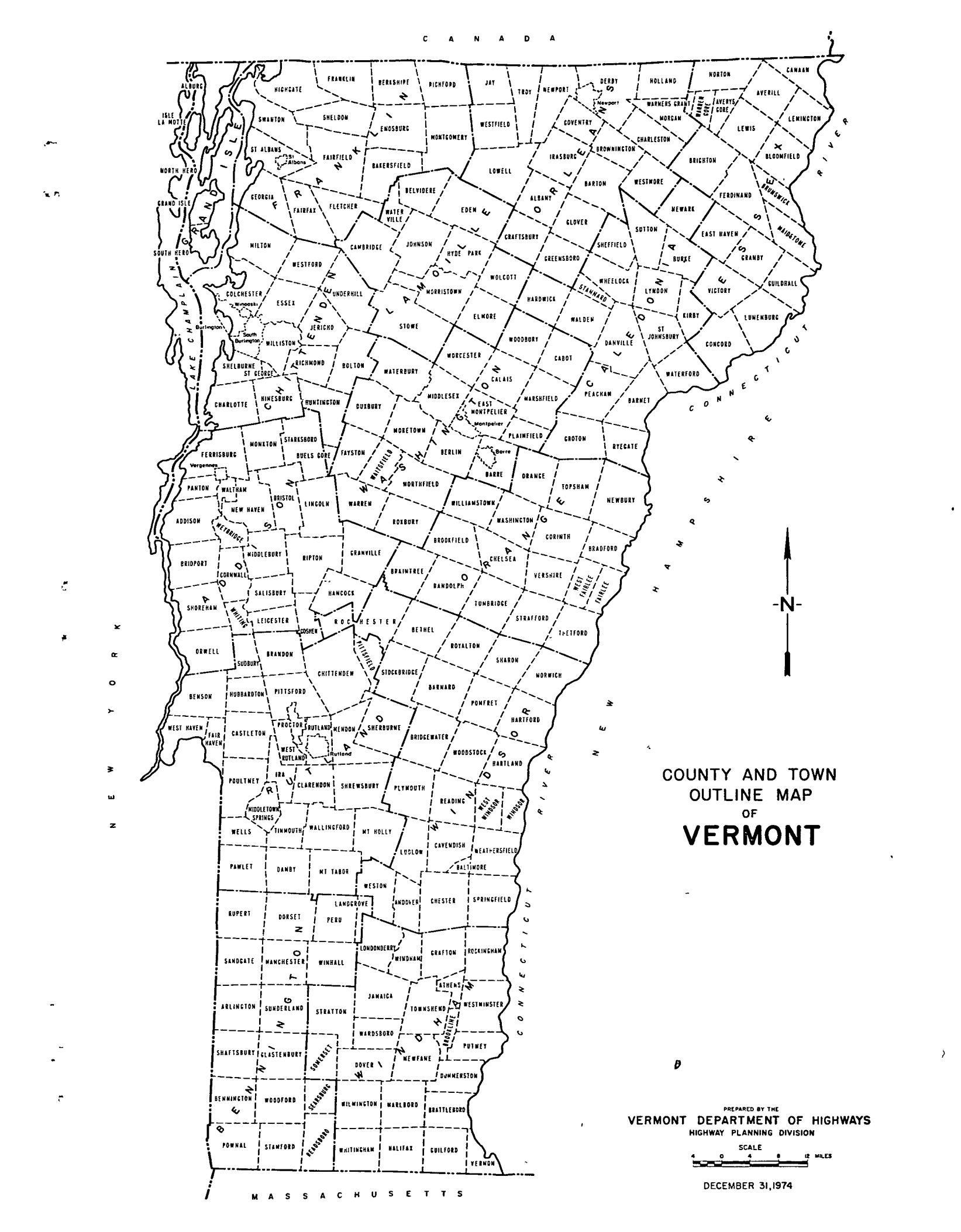
Work sheets containing more detailed information and a field sketch of the area, and laboratory test results are on file in the Materials & Research Division of the Agency of Transportation, State of Vermont.

LOCATION

The Town of Huntington is in the southeast corner of Chittenden County in the west-central section of Vermont. It is bounded on the north-northwest by Richmond, the north-northeast by Bolton, the northeast by Duxbury, the southeast by Fayston, the south by Buel's Gore, the southwest by Starksboro, and the west by Hinesburg (see County and Town Outline Map of Vermont on the following page).

Huntington lies entirely within the Green Mountain Physiographic Subdivision of the New England Upland. The topography is characterized by steep-sided hills and mountains. Elevations range from 4,089 feet atop Camels Hump in the northeast corner of town, to just over 520 feet in the north edge of town where the Huntington River crosses the Richmond Town Line.

Primary drainage is northerly via the Huntington River. Its major west or southwestward flowing tributaries are Johns, Brush, Cobb, Jones and Baker Brooks. Major eastward flowing tributaries are Carpenter and Hollow Brooks. There are numerous unnamed brooks.



COUNTY AND TOWN OUTLINE MAP OF VERMONT

PREPARED BY THE
VERMONT DEPARTMENT OF HIGHWAYS
HIGHWAY PLANNING DIVISION

SCALE
4 0 4 8 12 MILES

DECEMBER 31, 1974

SURVEY OF ROCK SOURCES

Procedure for Rock Survey

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

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

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

DISCUSSION OF ROCK AND ROCK SOURCES

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

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

Metamorphic rocks of the Green Mountain Sequence (Camels Hump Group) underlie the town. Various members of the Underhill Formation underlie Huntington. A band of Pinnacle Formation graywacke is mapped near the northwest corner of town, but is inaccessible. Two mapped zones of Hazens Notch Formation schist, quartzite, and gneiss lie mostly within the Camels Hump State Forest in the eastern part of town; however, heavy tree cover and glacial drift mantle the rock.

The formations mapped as underlying Huntington from west to east are the Underhill Formation (Fairfield Pond Phyllite member), the Pinnacle Formation graywacke and conglomerate, the Underhill Formation Phyllite and schist, the Underhill Formation greenstone member, and the Hazens Notch Formation schist, quartzite, and gneiss.

Material yielded satisfactory test results from Map Identification No.1 and 2, and unsatisfactory test results from Map Identification No.3. All were in the Underhill Formation (phyllite and schist).

SURVEY OF SAND AND GRAVEL SOURCES

Procedure for Sand and Gravel Survey

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

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

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

DISCUSSION OF SAND AND GRAVEL DEPOSITS

Results of this survey show that most of the granular deposition in Huntington is limited to elevations between 600' and 800'. There are two minor deposits at 1,000'. Recent fluvial gravels are formed between 520' and 700' elevation. Post-glacial delta deposits range from 650'-700', in the northwest corner of town to 700'-750' elsewhere. There are isolated, extremely limited delta deposits from 1,000' to 1,070'.

The most promising sources of Gravel for Sub-base Item 704.05 are listed with the most favorable first: Map Identification Numbers 14, 8, 5, and 4 (there are pits at 8 and 4). There are numerous gravel bars in the Huntington River which are replenished annually.

Areas yielding acceptable Sand Borrow and Cushion Item 703.03 are listed with the most favorable first: Map Identification Numbers 4 (a pit), 11, 7, and 2.

Other areas with passing test results were not listed due to lack of reserves.

SUMMARY OF ROCK FORMATIONS IN THE TOWN OF HUNTINGTON

Green Mountain Sequence

Camels Hump Group

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

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.

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

Underhill Formation Greenstone: Varied composition including albite-chlorite-epidote-calcite and sericite-magnetite-chlorite-clinozoisite rocks.

Underhill Formation (Fairfield Pond Member): Greenish quartzitic schist (Quartz-sericite-albite-chlorite-biotite); sericite-quartz-chlorite phyllite, locally purple or red, common in lower part.

GLOSSARY OF SELECTED GEOLOGIC TERMS

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

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

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

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

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

Calcite: A common rock-forming carbonate mineral, $CaCO_3$, which forms limestone and marble.

Carbonaceous: Containing carbon.

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

Clinozoisite: A hydrous calcium aluminum silicate usually found in crystalline schists derived by the metamorphism of a dark igneous rock containing calcic feldspar.

Conglomerate: The consolidated equivalent of gravel. There may be considerable range in the size and composition of constituent fragments. The finer material between the larger fragments may be fine particulate matter or a natural cement, such as calcium carbonate, clay, iron oxide, or silica.

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

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

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

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

Fluvial: Pertaining to streams.

Garnet: An important group of minerals in which aluminum, calcium, chromium, ferric and ferrous iron, magnesium, and manganese combine with a silicate. They are commonly deep red, brown, or black, but may be any color except possibly blue.

Glacial: Pertaining to ice or to its action, or consisting of ice; frozen, icy, freezing, esp., pertaining to glaciers; as glacial soil.

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

Graywacke: Dark, hard sandstone having angular grains of quartz and feldspar in a matrix of micas, chlorite, and clay minerals.

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

Magnetite: A magnetic mineral composed of iron ferrate ($Fe3O_4$ or $FeO\ Fe_2O_3$).

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

Outcrop: A part of a body of rock that appears bare and exposed at the surface of the ground. It generally includes areas where the rock formation occurs next beneath the soil, even though it is not actually exposed.

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

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

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

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

Quartzite: The common, siliceous, metamorphic equivalent of sandstone composed of quartz grains so firmly bonded that fractures occur with equal ease across both grains and cement.

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

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

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

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

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

Strike: The direction of a line formed by the intersection of a bedding plane, vein, fault, cleavage, or similar geologic structure with a horizontal plane.

Syncline: A fold of rock strata that is concave upward, in which younger formations occur toward the center of curvature.

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

Varves: The regular layers or alternations of material in sedimentary deposits that are due to annual seasonal influences. Each varve represents the deposition during a year, and ordinarily consists of a lower part deposited in summer, and an upper, finer-grained part deposited in the winter.

Water Table: The upper limit of the portion of the ground which is wholly saturated with water.

Weathered: Showing the effects of exposure to the atmosphere.

Huntington
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PARTIAL SPECIFICATIONS FOR HIGHWAY CONSTRUCTION MATERIALS

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

DIVISION 700 - MATERIALS

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

TABLE 703.03A - SAND BORROW AND CUSHION

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

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

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

TABLE 703.05A - GRANULAR BORROW

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

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

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

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

TABLE 704.05A - GRAVEL FOR SUB-BASE

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

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

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

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

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

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

TABLE 704.06A - CRUSHED STONE FOR SUB-BASE

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

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

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

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

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

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

This material shall meet the requirements of the following table:

TABLE 704.06B - LEVELING MATERIAL

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

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

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

TABLE 704.07A - CRUSHED GRAVEL FOR SUB-BASE

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

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

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

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

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

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

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

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

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

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

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

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

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

silt, clay, and organic material.

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

TABLE 704.10A - GRAVEL BACKFILL FOR SLOPE STABILIZATION

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

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

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

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

TABLE 704.11A - GRANULAR BACKFILL FOR STRUCTURES

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

TA 404 2C Rev. 2/79

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

HUNTINGTON GRANULAR DATA SHEET NO. 1

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
1	1	1980	0.5-8	0-0.5	yes	93	85	66	52	19	7	26.5%	Granular Borrow (Gravel)	Owner: George Hart. Area is an inactive, small, partly overgrown pit on flat-topped, wooded knoll which is a local delta deposit. Area is just north of Town Highway No.7, and 0.92 mile east of its junction with Town Highway No.6. Feature extends 75'x150'x 20'. Test No.1 was on north face of pit. Material is: 0'-0.5; overburden; 0.5'-8', interbedded sand and gravel; bottom, sloughed material. Material caves easily and the beds are distorted and dip to the southwest.
2	1	1980	1-10	0-1	No	100	93	80	61	16	8	19.1%	Sand Borrow and Cushion	Owner: Roland LaPierre. Area is a sloughed bank on an overgrown knoll 50' north of the junction of Town Highway No.1 (Class 2) and private road No.1. The flat, terrace-like feature is overgrown with brush, and extends 200'x500' to a house on the west end. Any material would be limited to a skim of granular over silt-clay. As of 10/16/80 the property was for sale.

TA 404 2C Rev. 2/79

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

HUNTINGTON GRANULAR DATA SHEET NO. 2

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	1		(continued)											Test No.1 was on sloughed upper part of knoll. Material is: 0'-1', overburden; 1'-10', pebbly fine gravel with some sand; bottom, sloughed material. Water seeps out of the slope, and varved clay was noted at 18'.
3	1	1980	0.5-10	0-0.5	Yes	94	90	75	61	19	10	14.7%	Granular Borrow (Gravel)	Owner: Clyde Cross. Area is small, inactive, nearly depleted pit on the north side of Town Highway No.10, 0.73 mile west of the junction of Town Highway No. 10 and 11. The 200'x50' extension is limited by a trailer and house. Test No.1 was on north face of pit. Material is: 0'-0.5' overburden; 0.5'-3.5', pebbly fine gravel; 3.5'-4.5', fine sand; 4.5'-10', pebbly fine gravel; bottom, sloughed material. Area is currently used as a school bus turn-around.

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MATERIALS & RESEARCH DIVISION - GEOLOGY SUB-DIVISION

HUNTINGTON GRANULAR DATA SHEET NO. 3

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
4	1	1980	3-12	0-1	Yes	95	89	75	61	36	24	20.9%	----	Owner: Lorraine Economou. Area is an active pit at north end of a wooded deltaic feature which slopes gradually down to the north. Area is just south of Town Highway No.11, and its access is 0.47 mile west of the junction of Town Highways No.10 and 11. Test No.1 was on east face of pit. Material is: 0'-1',over-burden; 1'-10'; interbedded sand, pebbly fine gravel, and silty fine sand; 10'-12', sand; bottom, sloughed material.
	2	1980	2-20	0-2	Yes	100	100	93	74	24	11	----	Sand Borrow and Cushion	Test No.2 was on south face of pit, 65' S60°W of Test No.1. Material is: 0'-2', overburden; 2'-10', interbedded sand and pebbly sand; bottom, sloughed material.
	3	1980	0-9	----	Yes	100	100	91	78	36	13	------	Granular Borrow (sand Borrow and Cushion)	Test No.3 was in center of floor. Material is: 0'-4', pebbly sand; 4'-6', sand; 6'-8', pebbly sand; 8'-9', fine gravel; bottom, fine gravel.

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HUNTINGTON GRANULAR DATA SHEET NO. 4

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4	1980	2-28	0-2	Yes	97	85	66	49	19	11	19.3%	Granular Borrow (Gravel)	Test No.4 was on southwest face of pit. Material is:0'-2', overburden; 2'-7', gravel; 7'-28', interbedded gravel, sand and silty sand; bottom, silt-clay.
	5	1980	3-9	0-1	No	100	97	80	63	20	13	18.7%	Granular Borrow (Gravel)	Test No.5 was in woods south of pit, 125' S50°W of Test No. 2. Material is: 0'-1'; overburden; 1'-3', sand (not in sample); 3'-9', gravel; bottom, gravel.
	6	1980	1-9	0-1	No	97	90	71	54	15	8	21.3%	Gravel	Test No.6 was in woods, 125' S40°W of Test No.5. Material is: 0'-1', overburden; 1'-9', gravel; bottom, gravel
	7	1980	1-9	0-1	No	96	91	69	49	14	10	20.2%	Granular Borrow (Gravel)	Test No.7 was north of road, 200 N10°W of pit entrance. It is in a flat, brush-covered extension of delta deposit to the south. Extension is irregular and roughly 200'x200'. Material is:0'-1'; overburden; 1'-5'; sand and fine sand; 5'-9', gravel; bottom, gravel. There is a small excavation in the woods

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HUNTINGTON GRANULAR DATA SHEET NO. 5

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	7		(continued)											south of pit, but it is used as a log-loading area.
5	1	1980	0-3	___	No	96	83	53	42	3	2	14.3%	Gravel	Owner: Eugene Jaques. Area is a large field and gravel bar east of the Huntington River. Area is 0.64 mile west of Town Highway No.3, its access is 0.70 mile north of the junction of Town Highway No.3 and Town HighwayNo.1 (Class 2) in the Village of Huntington. Test No.1 was in center of gravel bar. Material is:0'-3',gravel; bottom, gravel and water.
	2	1980	0.5-8	0-0.5	No	95	87	67	48	13	8	13.2%	Gravel	Test No.2 was in north end of field, 60' S65°E of gateway, Material is: 0'-0.5', overburden; 0.5'-8', gravel; bottom,gravel and water.
	3	1980	3-8	0-0.5	No	94	82	58	43	18	10	16.3%	Granular Borrow (Gravel)	Test No.3 was in east side of field, 300' S35°E of Test No.2. Material is: 0'-0.5', overburden; 0.5'-3', sand; 3'-8',

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HUNTINGTON GRANULAR DATA SHEET NO. 6

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	3		(continued)											gravel; bottom, gravel and water. Water table was encountered at 6'.
	4	1980	3.5-6	0-0.5	No	94	84	69	57	18	9	12.9%	Granular Borrow (Gravel)	Test No.4 was in west side of field, 250' S55°W of Test No.3. Material is: 0'-0.5, overburden; 0.5'-3.5', sandy silt; 3.5'-6', gravel; bottom, gravel and water.
	5	1980	4-8	0-0.5	No	95	91	65	48	25	10	14.1%	Granular Borrow (Gravel)	Test No.5 was in southwest edge of field, 300' S12°E of Test No. 4. Material is: 0'-0.5', overburden; 0.5'-4', fine sand; 4'-8', gravel; bottom, water and gravel.
	6	1980	3-8	0-0.5	No	94	94	67	49	16	10	15.5%	Granular Borrow (Gravel)	Test No.6 was in the southwest edge of field, 300' S55°E of Test No.5. Material is: 0'-0.5', overburden; 0.5'-3', fine sand; 3'-8', gravel; bottom, gravel. Material is a bit coarser than previous tests.

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HUNTINGTON GRANULAR DATA SHEET NO. 7

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	7	1980	1-6	0-6	No	97	92	77	62	17	9	14.1%	Granular Borrow (sand Borrow and Cushion)	Test No.7 was in south end of field, 350' S65°E of Test No.6. Material is: 0'-1', overburden; 1'-6', gravel; bottom, gravel. Caves too easily to go deeper. There were several 12" stones.
	8	1980	1-8	0-1	No	97	88	62	45	9	6	13.6%	Gravel	Test No.8 was in south end of field, 250' east of Test No.7, and 8'-10' above Tests No.6 & 7. Material is: 0'-1', overburden; 1'-8', gravel; bottom, gravel.
	9	1980	3-8	0-0.5	No	95	78	54	39	12	7	12.8%	Gravel	Test No.9 was in east side of upper level of field, 500' N5°E of Test No.8. Material is: 0'-0.5', overburden; 0.5'-3', fine sand; 3'-8', gravel; bottom, gravel and water.
	10	1980	1-8	0-1	No	72	61	41	29	19	13	14.6%	Granular Borrow (Gravel)	Test No.10 was in east side of field, 450' N80°W of Test No.9. Material is: 0'-1', overburden; 1'-8', gravel; bottom, gravel and water. The water table was encountered at 6'.

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HUNTINGTON GRANULAR DATA SHEET NO. 8

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
6	1	1980	0.5-12	0-0.5	Yes	79	65	44	32	25	16	24.9%	----	Owner: Charles Spence. Area is a small, inactive, trash-and boulder-strewn pit along the west side of Town Highway No.6, 0.26 mile northeast of its junction with Town Highway No.3. There is a 100'x300' extension to the northwest into a pine plantation on a low lobate ridge, but the quality of the material is doubtful. Test No.1 was on north-west face of pit. Material is: 0'-0.5', overburden; 0.5'-12', coarse, bouldery gravel; bottom, sloughed material. Material has a silt-clay coating.
7	1	1980	0.5-9	0-0.5	No	100	86	78	70	34	17	-----	-----	Owner: Eugene Jaques. Area is a field and ridges above, and 0.16 mile east of Town Highway No.3 and 0.32 mile northeast of its junction with Town Highway No.1 (Class 2). Test No.1 was atop east end of ridge near north end of field. Material is: 0'-0.5', overburden; 0.5'-3', fine sand; 3'-5', fine gravel; 5'-9', sand; bottom, fine sand.

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HUNTINGTON GRANULAR DATA SHEET NO. 9

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2	1980	0.5-9	0-0.5	No	100	86	78	70	34	17	____	____	Test No.2 was atop knoll, 120' S20°W of Test No.1. Material is: 0'-0.5', overburden; 0.5'-4', pebbly sand; 4'-9', silty sand; bottom, silty sand.
	3	1980	0.5-9	0-0.5	No	100	100	96	90	41	16	____	____	Test No.3 was atop west end of ridge, 225' due west of Test No.1. Material is: 0'-0.5', overburden; 0.5'-1.5', gravel; 1.5'-9', interbedded sand, fine sand, and silty sand; bottom, silty sand.
	4	1980	1-9	0-1	No	90	84	79	71	5	4	____	Granular Borrow (sand Borrow and Cushion)	Test No.4 was near access road in west end of field. Material is: 0'-1', overburden; 1'-9', Sand and pebbly sand; bottom, pebbly sand.
	5	1980	1-6	0-1	No	100	100	92	86	8	7	____	Sand Borrow and Cushion	Test No.5 was in southwest corner of field, 260' due south of Test No.4. Material is: 0'-1', overburden; 1'-6', sand and pebbly sand; bottom, pebbly sand. Stopped at 6' due to excessive caving.

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HUNTINGTON GRANULAR DATA SHEET NO. 10

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	6	1980	1-5	0-1	No	100	100	100	81	70	59	-----	-----	Test No.6 was in southeast, upper corner of field, 280' S48°E of Test No.5. Material is: 0'-1', overburden; 1'-5', silt-clay with angular stones; bottom, silt-clay.
8	1	1980	1-9	0-1	Yes	95	93	77	48	8	5	16.0%	Gravel	Owner: Norman Cummings. Area is pit and extension, 0.15 mile west of Town Highway No. 1 (Class 2), and 0.57 mile south of its junction with Town Highway No.3. Pit is just north of M. Rader property line (Map Identification No.9). Test No.1 was on northwest face of pit. Material is: 0'-1', overburden; 1'-9', pebbly fine gravel; bottom, sloughed material.
	2	1980	0-8	----	Yes	96	93	71	49	7	5	18.0%	Gravel	Test No.2 was in center of pit floor. Material is: 0'-8', gravel; bottom, pebbly sand.
	3	1980	2-8	0-2	No	88	84	58	37	11	8	21.1%	Gravel	Test No.3 was in field, 110' N60°W of Test No.1. Material is: 0'-2', overburden; 2'-8', gravel; bottom, gravel.

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HUNTINGTON GRANULAR DATA SHEET NO. 11

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4	1980	1-8	0-1	No	94	89	70	39	9	6	23.2%	Gravel	Test No.4 was in field, 180' N80°E of Test No.3. Material is: 0'-1', overburden; 1'-8', gravel; bottom, gravel.
9	1	1980	1-12	0-1	Yes	89	84	69	53	9	5	17.3%	Gravel	Owner: Margery Rader. Area is an inactive pit and a brush-covered extension. An old right-of-way was through Charles Thomson's land, but an alternate route might be needed. Access for sampling was via the south end of Map Identification No.8. Test No.1 was on the north-west face of pit. Material is: 0'-1', overburden; 1'-5', sand; 5'-12', pebbly fine gravel; bottom, sloughed material.
	2	1980	3-8	0-1	No	93	93	68	52	12	7	18.5%	Gravel	Test No.2 was near fence at north edge of property. Material is: 0'-1', overburden; 1'-3', sand; 3'-8', gravel; bottom, gravel.
	3	1980	1-8	0-1	No	94	91	65	52	24	14	16.6%	Granular Borrow (Gravel)	Test No.3 was near woods, 190' N70°E of Test No.2. Material is: 0'-1', overburden; 1'-5', pebbly sand; 5'-8', gravel; bottom, gravel.

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HUNTINGTON GRANULAR DATA SHEET NO. 12 TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4	1980	1-9	0-1	Yes	100	100	100	98	33	8	-----	Granular Borrow (Sand Borrow & Cushion)	Test No.4 was in center of pit floor. Material is: 0'-1', not in place; 1'-9', fine sand; bottom, fine sand.
10	1	1980	1-8	0-1	No	96	88	64	42	6	4	15.4%	Gravel	Owner: Norman Cummings. Area is a large field on an inside curve of the Huntington River, 0.13 mile east of Town Highway No.1 (Class 2), and 0.56 mile south of its junction with Town Highway No.3. Test No.1 was in narrow south end of lowest level of south field. Material is: 0'-1', overburden; 1'-8', gravel; bottom, gravel and water.
	2	1980	2-8	0-2	No	85	69	42	29	18	11	13.7%	Granular Borrow (Gravel)	Test No.2 was in west edge of field, 250' N5°E of test No.1. Material is: 0'-2', overburden; 2'-8', gravel; bottom, gravel.
	3	1980	2-6	0-2	No	91	73	37	24	15	10	14.1%	Granular Borrow (Gravel)	Test No.3 was in north end of south field, 250' N50°E of Test No.2. Material is: 0'-2', overburden; 2'-6', gravel; bottom, gravel and water.

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HUNTINGTON GRANULAR DATA SHEET NO. 13

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4	1980	3-8	0-3	No	91	84	63	48	30	18	16.1%	----	Test No.4 was in south end of north field. Material is: 0'-3', overburden; 3'-8', silty sand and gravel; bottom, silty sand and gravel. Material is almost till-like.
	5	1980	2-6	0-2	No	100	100	100	100	81	56	-----	-----	Test No.5 was in east side of north field, 350' N50°E of Test No.4. Material is: 0'-2', overburden; 2'-6', silty sand and silt-clay; bottom, silt-clay.
	6	1980	3-8	0-3	No	75	66	46	34	19	8	15.6%	Granular Borrow (Gravel)	Test No.6 was in north end of north field, 400' N55°W of Test No.5. Material is: 0'-3', overburden; 3'-8', coarse gravel; bottom, fine sand
	7	1980	0.5-7	0-0.5	No	91	82	57	39	15	11	20.1%	Granular Borrow (Gravel)	Test No.7 was in small middle level of field. Material is: 0'-0.5', overburden; 0.5'-7', gravel; bottom, fine sand. Some large (24") random boulders were noted.
	8	1980	0.5-9	0-0.5	No	100	100	96	91	79	50	----	-----	Test No.8 was near fence in northeast corner of upper level of field. Material is: 0'-0.5' overburden; 0.5'-9', fine silty

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HUNTINGTON GRANULAR DATA SHEET NO. 14

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	8		(continued)											sand; bottom, fine silty sand.
11	1	1980	0-6	-----	No	81	76	55	41	16	12	18.6%	Granular Borrow (Gravel)	Owner: Eugene Jaques: Area is a field and gravel bar south of a loop in the Huntington River, 0.30 mile east of Town Highway No.1 (Class 2) and 0.81 mile south of its junction with Town Highway No.3. Test No.1 was on a stockpile south of stream. Material is: 0'-6', gravel; bottom, gravel and water.
	2	1980	3-6	0-3	No	100	96	81	65	17	11	-----	Sand Borrow and Cushion	Test No.2 was in field, 85' S25°E of north end of access road. Material is: 0'-3', overburden; 3'-6', gravel; bottom, gravel and water. Water table encountered at 4'.
	3	1980	5-9	0-2	No	96	85	53	32	20	14	16.5%	Granular Borrow (Gravel)	Test No.3 was in field, 500' S15°E of, and 6' above Test No.2. Material is: 0'-2'; overburden; 2'-5', sandy silt; 5'-9', gravel; bottom, gravel.

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HUNTINGTON GRANULAR DATA SHEET NO. 15

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	4	1980	2-9	0-2	No	100	100	100	100	68	13	-------	Granular Borrow (sand Borrow and Cushion)	Test No.4 was in field, 600' S15°E of Test No.3. Material is: 0'-2', overburden; 2'-9', sandy silt and silty sand; bottom, silt-clay.
	5	1980	5-9	0-2	No	86	83	51	33	16	11	13.5%	Granular Borrow (Gravel)	Test No.5 was in field, 525' S75°W of Test No.4. Material is: 0'-2', overburden; 2'-5', sandy silt; 5'-9', gravel; bottom, gravel.
	6	1980	2-8	0-2	No	94	84	58	43	15	11	15.9%	Granular Borrow (Gravel)	Test No.6 was in field, 600' N25°W of Test No.5. Material is: 0'-2', overburden; 2'-8', gravel; bottom, gravel.
12	1	1980	0-3	----	No	83	70	46	31	11	6	16.8%	Gravel	Owner: Joseph Spence. Area is gravel bar on an inside curve of the Huntington River. A small ford leads to the bar on the east side of the river. Area is 0.19 mile east of Town Highway No.1 (Class 2), and 0.94 mile south of its junction with Town Highway No.3. Test No.1 was in center of gravel bar east of river. Material is: 0'-3', gravel; bottom, gravel and water.

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HUNTINGTON GRANULAR DATA SHEET NO. 16

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Exist-ing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
13	1	1980	0-2	----	No	81	79	54	38	6	4	13.7%	Gravel	Owner: Marion Brace. Area is a gravel bar on the east side of Huntington River, 0.23 mile northwest of Town Highway No. 1 (Class 2), and 0.54 mile north of Town Highway No.4 in Huntington Center. Test No.1 was in gravel bar, 100' S65°W of north end of access road. Material is: 0'-2'; gravel; bottom, gravel and water.
14	1	1980	0-6	----	No	88	81	60	46	7	4	16.1%	Gravel	Owner: Hobart Tomlinson. Area is a multi-level field and several gravel bars 0.1 mile west of Town Highway No.1 (Class 2), and 0.83 mile south of its junction with Town Highway No.26. Test No.1 was in the first gravel bar west of the ford. The gravel bar is designated as Gravel bar No.4 on the field sketch. Material is: 0'-6', gravel; bottom, gravel and water. Owner says gravel bars are replenished every spring.

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HUNTINGTON GRANULAR DATA SHEET NO. 17 TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2	1980	1-8	0-1	No	30	30	51	37	20	14	16.3%	Granular Borrow (Gravel)	Test No.2 was in upper level of east edge of field west of house. Material is: 0'-1', overburden;1'-8', gravel; bottom, silt-clay.
	3	1980	1-6	0-1	No	96	94	68	55	13	7	16.9%	Gravel	Test No.3 was in lower level of northeast corner of field. Material is: 0'-1', overburden; 1'-6', gravel; bottom, gravel and water. Hole caved too readily to dig below 6'.
	4	1980	5-9	0-1	No	84	79	56	35	19	11	15.9%	Granular Borrow (Gravel)	Test No.4 was in upper level of field, just east of small pond, S35°W of Test No.3. Material is: 0'-1', overburden; 1'-5', silt; 5'-9', gravel; bottom, silt-clay.
	5	1980	1-5	0-1	No	87	73	46	30	15	3	15.8%	Gravel	Test No.5 was in lower level of field, 500' S85°W of Test No.4. Material is: 0'-1', overburden; 1'-5', gravel; bottom, gravel and water. Rapid caving prevented furthur excavation. Water table was encountered at 3.5'.

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HUNTINGTON GRANULAR DATA SHEET NO. 18 TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	6	1980	1-6	0-1	No	88	72	51	40	16	9	14.3%	Granular Borrow (Gravel)	Test No.6 was in southwest corner of field, 550' S15°E of Test No.5. Material is: 0'-1', overburden; 1'-6', gravel; bottom, gravel and water. Rapid caving prevented excavation below 6'. Water table was encountered at 5'.
15	1	1980	0.5-7	0-0.5	Yes	83	77	60	45	19	11	27.4%	Granular Borrow (Gravel)	Owner: Richard Kellogg. Area is the old Hardy pit. It is an overgrown, shallow, inactive pit 0.08 mile east of Town Highway No.1 (Class 2), and 0.18 mile north of its junction with Town Highway No.29. The 200'x500' extension is in a large, shallow, flat-topped area with planted pines and pasture overgrown with gray birch. Many boulder piles at east end of pit floor. Test No.1 was on southeast face of pit. Material is: 0'-0.5', overburden; 0.5'-7', silty gravel which seems almost like a till; bottom, sloughed material.
	2	1980	0.5-6	0-0.5	Yes	86	82	59	47	19	12	27.8%	Granular Borrow (Gravel)	Test No.2 was on northeast face of pit. Material is: 0'-0.5'

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

HUNTINGTON GRANULAR DATA SHEET NO.19

TABLE I

Map Ident. No.	Field Test No.	Year Field Tested	Depth of Sample (Ft)	Over-Burden (Ft)	Existing Pit	Sieve Analysis % Passing						Abrasion AASHTO T-4-35	Passes AOT Spec.	Remarks
						2 "	1-1/2"	1/2"	#4	#100	#200			
	2													overburden; 0.5'-6', silty, till-like gravel; bottom, sloughed material.
16	1	1980	1.5-7-5	0-1.5	Yes	100	100	94	90	25	7	----	Sand Borrow and Cushion	Owner: Mack Moody. Area is a small, depleted, inactive pit just southeast of the junction of Town Highways No. 30 and 31. Test No.1 was on south face of pit. Material is:0'-1.5', overburden; 1.5'-7.5', sand; bottom, sloughed material.

TABLE I
SUPPLEMENT

HUNTINGTON PROPERTY OWNERS - GRANULAR	MAP IDENTIFICATION NO.
Brace, Marion	13
Cross, Clyde	3
Cummings, Norman	8, 10
Economou, Lorraine	4
Hart, George	1
Jaques, Gene	5, 7,11
Kellogg, Richard	15
LaPierre, Roland	2
Moody, Mack	16
Rader, Marjory	9
Spence, Charles	6
Spence, Joseph	12
Tomlinson, Hobart	14

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

Huntington ROCK DATA SHEET NO. 1 TABLE II

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHTO T-3	Abrasion AASHTO T-96	Remarks
1	1-A	1980	Phyllite, Schist	No	Chip	11.1%	24.2%	Owner: C.G. Mayo. Area is a low outcrop which rises gradually to the east. The outcrop is on the east side of Town Highway No.3, 0.32 mile south of the Richmond Town Line. Access is good. Relief is 20'-25' and there are abundant reserves. Owner is quite elderly and might not want to do anything about developing the rock. The rock is the phyllite and schist of the Underhill Formation. Test No.1-A was along the northeast wall of the outcrop.
	1-B	1980	Phyllite Schist	No	Chip	9.9%	30.9%	Test No.1-B was along the southeast wall of the outcrop. 30' south of Test No.1-A.
2	1-A	1980	Phyllite, Schist	Yes	Chip	8.0%	32.7%	Owner: Felix Smith. Area is small, blasted excavation on the west side of Town Highway No.1 (Class 2), 0.13 mile north of its junction with Town Highway No.31. Area only supplied rip-rap for erosion-control along the Huntington River. Samples were taken from the rubble piles of blasted rock. Extension is up a gradual hill to the west. Access is very good. Relief is 10' at the wall, and there is ample reserve. Rock is the phyllite and schist of the Underhill Formation. Test No.1-A was taken from pile at north end of excavation.
	1-B	1980	Phyllite, Schist	Yes	Chip	11.0%	41.9%	Test No.1-B was taken from pile at south end of excavation, 30' south of Test No.1-A.

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

Huntington ROCK DATA SHEET NO. 2 TABLE II

Map Ident. No.	Field Test No.	Year Field Tested	Rock Type	Existing Quarry	Method of Sampling	Abrasion AASHTO T-3	Abrasion AASHTO T-96	Remarks
3	1-A	1980	Phyllite Schist	Yes	Chip	11.0%	41.9%	Owner: Alfred Burr. Area is a pair of small excavations, east of Town Highway No.1 (Class 2), 0.48 mile north of the Buel's Gore Town Line. Access is good but on a curve. Development would be easy. There is 20' relief and ample reserve. Test No.1-A was in east wall of small south excavation.
	1-B	1980	Phyllite Schist	Yes	Chip	11.3%	43.2%	Test No.1-B was in east wall of small north excavation, 90' north of Test No.1-A. Material is probably only useful for rip-rap or fill.

TABLE II
SUPPLEMENT

HUNTINGTON PROPERTY OWNERS - ROCK	MAP IDENTIFICATION NO.
Burr, Alfred	3
Mayo, C. G.	1
Smith, Felix	2

N

LEGEND

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

HUNTINGTON

SCALE 1:31,250

1 0.5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1981

GRANULAR MATERIALS MAP

BY

VERMONT AGENCY OF TRANSPORTATION

MATERIALS AND RESEARCH DIVISION

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

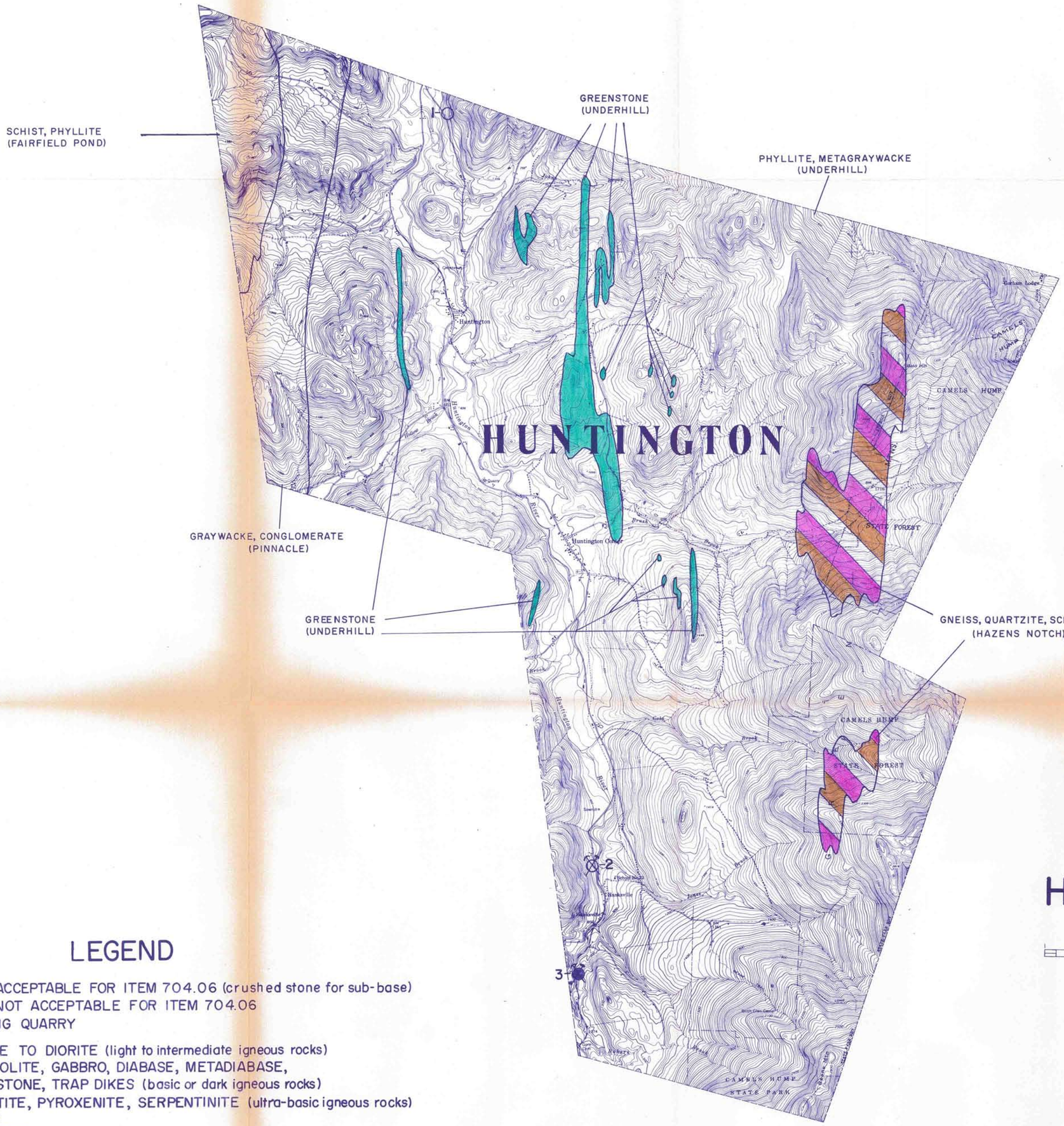
CHITTENDEN COUNTY VT. HWY. DISTRICT NO. 5

REVISIONS

DATE							
BY							

PLATE I GRANULAR

HUNTINGTON



N

HUNTINGTON

SCALE 1:31,250

1 0.5 0 1 MILE

CONTOUR INTERVAL 20 FEET

1981

ROCK MATERIALS MAP

BY

VERMONT AGENCY OF TRANSPORTATION

MATERIALS AND RESEARCH DIVISION

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

LEGEND

- ROCK, ACCEPTABLE FOR ITEM 704.06 (crushed stone for sub-base)
- ROCK, NOT ACCEPTABLE FOR ITEM 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
- SCHIST, SLATE, PHYLLITE, SHALE, SANDSTONE, CONGLOMERATE
- 3 IDENTIFICATION NUMBER (refer to data sheets)

PLATE II

ROCK

CHITTENDEN COUNTY VT. HWY. DISTRICT NO. 5

REVISIONS

DATE						
BY						