PATRIOT RENEWABLES
Canton Mountain Wind, LLC

Section 11
Soils

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ATTACHMENT

11.0 SOILS

In the summer and fall of 2010, a Class L (linear) soil survey was conducted for the proposed turbine pads and access roads for the Canton Mountain Wind Project. A Class B (high-intensity) survey was performed in the area of the proposed operations and maintenance (O&M) building. Canton Mountain Wind, LLC contracted Albert Frick Associates to conduct all soil surveys.

Attachment 11-1 contains the soil survey report and accompanying soils maps for the access and ridgeline roads, O&M building, and turbine locations.

A geotechnical investigation of the roads and turbine pads will be conducted prior to construction.

PATRIOT RENEWABLES
Canton Mountain Wind, LLC

Attachment 11-1
Soil Survey Report and Soils Maps

CANTON MOUNTAIN WIND PROJECT

Ludden Road off Dixfield Road

SOIL NARRATIVE REPORT

January 25, 2011

PREPARED FOR:

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by

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1.0 Introduction

Albert Frick Associates hereby provides the Soil Survey for *Canton Mountain Wind Project* in *Canton, Maine*. This Soil Survey includes:

- a Class L level of soil survey as required by *Maine Department of Environmental Protection* for *linear* projects (e.g. wind projects) in the area of the proposed turbine sites and proposed road alignment,
- a High Intensity Class B Soil Survey at the proposed operations and maintenance building location, and substation
- a modified Class D Soil Survey along the proposed transmission corridor. (Under separate cove, Saddleback Ridge Transmission Line project, dated October 8, 2010).

1.1 Overview of Project and Location

The *Canton Mountain Wind Project* energy generating facility is located on Ludden Road off Dixfield Road, in Canton, Maine. The Project includes 11 turbines with approximately 2 miles of access road, and an Operations and Maintenance (O&M) building. All projects components are proposed to be located in Canton, Maine.

2.0 Purpose

This investigation is a Class L (linear) soils survey for the proposed project, as required by Maine Site law. A Class L Soil Survey for linear wind power projects is concentrated in the areas of proposed access roads, turbine pads, and laydown areas. The purpose of this Class L soils investigation is to provide soil information for the proposed *Canton Mountain Wind Project* along the proposed corridor of the access road alignment and within the proposed turbine pad sites, and laydown areas. More specifically, the purpose of this Class L soil survey is to identify and quantify soils limitations at the site for the proposed wind power development, particularly with respect to any design accommodations necessary to address soil drainage, physical properties and/or depths to bedrock class.

The purpose of the High Intensity Class B Soil Survey in the Operations and Maintenance Building site is to identify any soils limitations to that more intensive use.

The purpose of the modified Class D Soil Survey for the proposed transmission corridor (under separate cover) is to identify any poorly to poorly drained soils which may require erosion and sedimentation control measures if the proposed construction occurs when the soils are wet.

The *Maine Department of Environmental Protection*, the *Maine Land Use Regulation Commission*, and *David Rocque, State Soil Scientist*, are interested in project designs which retain hydraulic connections and maintain the natural perched ground water and surface run-off pattern as much as is feasible. This is a particular interest in this project, where there are traversing road alignments along the side sloping mountainous terrain, which is subject to long drainage sheds with high volumes of perched ground water flows and surface water runoff. Currently, the *state of the art* of access road designs is to maintain a continued hydraulic interconnection between the upslope and downslope sides of new road beds, by allowing water to pass through in more of a *sheet* flow capacity and to minimize large channelized flow. A *rock sandwich* (aka *French mattress* per Penn State technical bulletin) is one such technique, which will be employed at the *Canton Mountain Wind Project*.

Albert Frick Associates' soil scientists examined the proposed access road corridors, turbine sites and transmission lines, identifying and survey-locating areas of soils which are:

1. poorly to somewhat poorly drained;
2. exhibit oxyaquic-like conditions (soils which are subjected to oxygen rich, seasonally perched ground water after rainfall events, e.g. early spring, late fall and during periods of heavy precipitation. These soils may exhibit more than one color or streaking, caused by differential organic matter accumulation in soil profile horizons);

3. intermittent drainages not included in wetland delineation streams;
4. subterranean mountain streams; OR
5. natural drainage swales that have potential to concentrate surface water runoff during periods of spring snowmelt, late fall rainfall, and/or during periods of extended heavy precipitation.

Where associates field identified soil areas that should be subject to drainage considerations in the development plans, they so noted on the soils plan.

In order to simplify the soils review, we overlaid a composite road alignment plan depicting cut and fill, grading, erosion and sediment control, cross-drainage techniques, and culverting, etc. onto the soils map.

3.0 Methodology

We performed soils identification, mapping and soil surveys in accordance with the standards adopted by the *Maine Association of Professional Soil Scientists (revised February 2004)* for *Class L* soil surveys for the proposed access road and proposed turbine sites and *Class B* for the proposed Operations & Maintenance building site. We performed a modified *Class D* soil survey for the proposed transmission line corridor to identify somewhat poorly to poorly drained soils, which might be sensitive to erosion and sediment control if the proposed construction were done at times when the soils were wet.

We examined the proposed road alignment, turbine sites, O & M building site, and Transmission Line Corridor in the field on October 4, 26 and 27, and November 30, 2010. *Albert Frick*, Certified Soil Scientist, accompanied by a Field Technician with Global Positioning Systems (GPS) unit [Trimble GeoXT submeter accuracy] performed the field work. The latitude and longitude coordinates were recorded in *State Plane West*

US Survey feet. The civil design provided some updates to this information for the base map, and we performed additional field work to accommodate those design changes.

Soils are described using standard soil terminology developed by the *USDA Natural Resources Conservation Service*, which is also where soil interpretation records originate for each soil series described in Maine. Where important distinctions between hydric and non-hydric soils are made in the mapping, the *Maine Association of Professional Soil Scientists Key to Soil Drainage Classes* was also utilized, as well as a separate list of regional indicators for identification of hydric soils (*Field Indicators for Identifying Hydric Soils in New England, version 3 2004*).

The *Canton Mountain Wind Project* is sited in a somewhat remote mountainous area. Consequently, it was not feasible to utilize mechanized equipment (i.e. backhoe excavation, drilling rig, etc.) due to inaccessibility and environmental concerns in this remote location. In such situations, the soil mapping standards allow for use of a tile spade shovel, hand soil auger, and tile probe to excavate test pits to a depth of 40 inches or until refusal due to encountering bedrock, large boulder, or basal lodgment till.

Field work consisted of documenting soil morphology and characteristics with hand dug test pits, borings and probes to bedrock and/or refusal. We identified test pits on-site with numbered flagging tape. AFA personnel located each test pit by submeter GPS. Soil types were identified and depicted on the proposed project Site Plan 1” = 100’.

We took additional confirmatory soil borings/observations by soil auger to assist in the placement of soil map unit boundaries onto the soil survey base map. AFA personnel located observed bedrock outcroppings by GPS survey to further identify shallow to bedrock soil map units, and project the relative depth to bedrock in the soil mapping units.

Soils are described using standard soil terminology developed by the *USDA Natural Resources Conservation Service*, which is also where soil interpretation records originate

for each soil series described in Maine. Where important distinctions between hydric and non-hydric soils are made in the mapping, the *Maine Association of Professional Soil Scientists Key to Soil Drainage Classes* was also utilized, as well as a separate list of regional indicators for identification of hydric soils (*Field Indicators for Identifying Hydric Soils in New England, version 3 2004*).

Soil map units were designed and structured to report the pertinent soil characteristics along with soil limitations for the proposed use and management of a Wind Power project site, so that the design team could take such limitations into account. Here, poor soil drainage is the primary concern in identifying soil limiting factors. Therefore, we used *ad hoc* symbols in places on the map to provide more detailed information about bedrock outcropping locations, groundwater seeps, surface water runoff, soil areas comprised of *oxyaquic*-like soils, intermittent and perennial streams or watercourses, and other natural features encountered on the property. We provided this additional detailed information where we anticipated that civil engineers should further evaluate the need for special cross drainage culverting, and/or erosion and sediment control measures.

A preliminary soils map was developed by obtaining the electronic layer of the *U.S. Natural Resource Conservation Service* medium intensity map, and importing the soil boundary information into the project CAD file. This was utilized for a preliminary soil map and the entire project area was reviewed along the proposed access road corridor, turbine sites, and transmission lines. Soil test pit excavations and descriptions were performed to upgrade, refine, and modify the map within the project borders.

The Design and Permitting teams used the developing soils work, along with the topographic survey and wetland delineation to locate and revise the road alignment and turbine placement, as well as to refine the design with regards to natural hydraulic cross-drainage concerns. These specific areas were identified and additional measures were proposed by project engineers to address hydraulic concerns

The soils data provide information useful for engineering by anticipating existing and proposed conditions with regards to *depth to bedrock*, that will affect blasting, benching techniques, and source of road building materials and/or cost; *soil drainage characteristics* that will affect road hydraulic cross-drainage, culverting frequency and sizing, storm water design, erosion and sediment control, and *soil textures/slopes* that will affect erosion potential.

4.0 Site Location/Setting

The proposed *Canton Mountain Wind Project* is located on Ludden Road off Dixfield Road in Canton, Maine. The project area consists of moderately sloping to steeply sloping topography, and is currently comprised mainly of forested land.

5.0 General Site and Subsurface Conditions

The site primarily includes forested sideslopes and mountain top ridges. Soil landforms generally consist of *loam* and *sandy loam* soils derived from glacial till. The tops of the mountain and ridge lines are generally bedrock controlled, and consequently exhibit shallow to bedrock soil conditions. The sideslopes tend to be comprised of deeper soils (ie. +40" in depth), which are *loam* to *sandy loam* textured soils generally derived from glacial till sediments. These soils commonly exhibit a firm substratum which produces a perched ground water table.

6.0 Soil Map Unit Descriptions

The kinds of map units used in a survey depend primarily on the purposes of the survey and the pattern of the soils and miscellaneous areas in the landscape. The pattern in nature is fixed, and it is not exactly the same in each delineation of a given map unit. In soil surveys, these patterns must be recognized, and map units designed to meet the major objectives of the Survey. It must be remembered that soil interpretations are made for areas of land and the most useful map units are those that group similarities.

The soil map unit descriptions included in Appendix C provide details regarding the soil series encountered, and the composition of soils within the given map unit (both for the range of soil characteristics and the potential similar and dissimilar soil within the soil map unit). Soil map units with multiple names are generally listed in order of their prevalence within the map unit. Slope gradient ranges are also provided, and refer to slope phases indicated in the soil survey map and in the soil legend. The soil narrative report is provided to describe the soil composition and physical characteristics, the general soil limitations, and related recommendations for the proposed use and management. The soils map depicts the spatial location of the soil or soils within the project site.

7.0 Conclusions and Recommendations

There currently is an existing graveled road that reaches the base of the proposed project, where the new access road is proposed. The existing road is currently drivable by 4-wheel drive vehicles. The new proposed roads as well as upgraded road within the project have been subjected to soils, wetlands, topographic mapping, as well as extensive civil engineering proven practices of soil and erosion control standards for mountain access road construction.

Based on our observations of the project site, and our knowledge of the proposed use of the property, the soils within the development area are suitable for the proposed use, with the following notable exceptions:

> *Recommend providing road cross drainage of the natural perched and surface water flow in the specified areas of the soil map located within the cross-hatched blue area as shown on the plans. (Civil engineers should consider rock sandwich [aka French mattress], frequent cross culverting and road turn-outs to maintain and maximize sheet flow).*

The nearly level, moderately sloping glacial till soils that are moderately well drained or well drained are generally suitable for the proposed use, although some modifications to

drainage or slope may be needed to improve conditions (as outlined by the Civil Engineers).

The somewhat poorly drained soils, where seasonal high groundwater tables are within 12” of the mineral soil surface for a significant portion of the year, may require additional measures such as the addition of coarse granular fill, rock sandwich, or the installation of upslope curtain drain to intercept sheet flow drainage, to overcome limitations.

The poorly or very poorly drained hydric soils have further limitations due to prolonged wetland and frost susceptibility, and may have additional permitting implications, if identified as wetland areas. Jurisdictional wetland areas were intentionally avoided, or wetland filling impacts minimized, as part of the selection of the road alignment.

APPENDIX A

Limitations

This soil narrative report and accompanying soil survey map have been prepared for the exclusive use of *Patriot Renewables and Jay Cashman, Inc.*, for its specific application to the proposed *Canton Mountain Wind Project* in *Canton, Maine*. Albert Frick Associates, Inc. conducted the work in accordance with generally accepted soil science practices outlined in the *Maine Association of Professional Soil Scientists Guidelines*, and the *Maine Board of Certification of Geologists and Soil Scientists Guidelines*. Further, presentation of mapping information meets the requirements of Guidelines for Maine Certified Soil Scientists for Soil Identification and Mapping (2004), and in accordance with standards adopted by the Maine Department of Environmental Protection (MDEP) for project review. No other warranty, expressed or implied, is made.

It should be recognized that map unit design is influenced by the intended use of the soil survey information, and may not be adequate or sufficient to evaluate for uses other than that for which the specific soil survey was developed. Soils which are non-limiting for one use may be considered a limitation for different use than that identified.

The analysis contained herein is based on data obtained during subsurface exploration of the site, and the interpretation of published information by the *USDA Natural Resources Conservation Services*. Due to the glaciation of Maine, and the complexity of the landscape, variations in subsurface conditions may exist between exploration sites which may not become evident until significant project excavation begins. Should significant variations in subsurface conditions become evident after the submission of this report, it may be necessary to re-evaluate the nature of the variation, in light of the recommendations enclosed herein.

Due to the combination of remoteness, current inaccessibility of heavy excavation equipment (e.g. backhoe, excavator, drill auger), *Albert Frick Associates'* Soil Scientist utilized hand shovels, tile probes and soil augers. *Refusal* or depth limitation to hand operated equipment may be due to bedrock and/or large stone or boulders.

APPENDIX B

Maine Association of Professional Soil Scientists Standards

Class L (Linear) Soil Survey Map

Purpose - This soil survey standard is designed to provide the minimum soil information necessary to allow for the design and construction of long but narrow projects such as access roads, utility lines or trails with little or no adjacent development. In remote, difficult to access sites such as mountains or roadless areas, soil observations may be made entirely by use of a hand shovel, screw or Dutch auger. For areas which are more accessible, deeper soil observations should be made in order to properly classify the soils.

1. Class L soil survey map units shall be made on the basis of parent material, slope, soil texture, soil depth to dense till or bedrock (whichever is shallowest) and soil wetness (drainage class and/or oxyaquic-like conditions) at the Class A High Intensity Map Unit size. The preferred method of naming the soil map units is by assigning a soil series name or names for complexes. If soils are classified to the series level in remote areas not readily accessible to equipment and/or without road cuts, it shall be noted in the narrative that soils were classified by shallow observations only.

2. Scale is 1 inch equals 100 feet or larger (e.g. 1”=50’).

3. Ground Control - base line and test pits for which detailed data are recorded are located to sub-meter accuracy under the direction of a qualified professional.

4. Base map with two foot contour lines.

SEE END OF SOILS SECTION REPORT
FOR LOCATION OF INDIVIDUAL
SOIL MAP SHEETS (1 – 4)

APPENDIX C

Soil Map Unit Descriptions

BRAYTON
(Aeric Haplaquepts)

SETTING

Parent Material: Compact loamy glacial till.

Landform: Depressions and toeslopes of glaciated uplands.

Position in Landscape: Lowest positions on landform.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Poorly drained, with a perched water table 0 to 1.0 feet beneath the soil surface from November through May or during periods of excessive precipitation.

Typical Profile Description:

Surface layer:	Very dark grayish brown sandy loam, 0-5"
Subsurface layer:	Grayish brown sandy loam, 5-15"
Subsoil layer:	Olive gray fine sandy loam, 15-24"
Substratum:	Olive sandy loam, 24-65"

Hydrologic Group: Group C

Surface Run Off: Moderate to moderately rapid.

Permeability: Moderate in solum, moderately slow or slow in dense substratum.

Depth to Bedrock: Deep, greater than 40 inches.

Hazard to Flooding: None

Erosion Factors: K: .24 - .32

INCLUSIONS
(Within Mapping Unit)

Similar: Colonel

Dissimilar: Naskeag, Peacham, Waskish

USE AND MANAGEMENT

Development for wind power projects: The limiting factor for development of wind power projects is wetness, since seasonal high groundwater tables within these map units are generally within 7" of the ground surface for long durations of the year. Groundwater perches on the firm substratum in Brayton, and this can carry significant amounts of runoff from long, upsloping watersheds. Importation of granular fill may be necessary to overcome limitations due to drainage for turbine pad construction, and maintaining cross drainage on new road sections will avoid concentration of stormwater. Brayton flows may have further implications as jurisdictional wetlands, when all three parameters of hydrophytic (wetland) vegetation, wet hydrology, and hydric (wetland) soils are present.

COLONEL
(Aquic Haplorthods)

SETTING

Parent Material: Compact loamy glacial till.

Landform: Glaciated uplands.

Position in Landscape: Intermediate positions on landform.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Somewhat poorly drained, with a perched water table 1.0 to 1.5 feet beneath the soil surface from November through May or during periods of excessive precipitation.

Typical Profile Description:

Surface layer:	Grayish brown fine sandy loam, 0-2"
Subsurface layer:	Dark reddish brown fine sandy loam, 2-12"
Subsoil layer:	Light olive brown gravelly fine sandy loam, 12-18"
Substratum:	Olive gravelly fine sandy loam, 18-65"

Hydrologic Group: Group C

Surface Run Off: Moderate

Permeability: Moderate in solum and moderately slow or slow in the compact substratum.

Depth to Bedrock: Deep, greater than 40 inches.

Hazard to Flooding: None

Erosion Factor: K: .17 - .24

INCLUSIONS
(Within Mapping Unit)

Similar: Dixfield, Skerry, Westbury

Dissimilar: Brayton, Naskeag

USE AND MANAGEMENT

Development of Wind Power Projects: The limiting factor of this soil for development of wind power projects is wetness, since Colonel soils exhibit a perched water table within 15" of the ground surface during periods of heavy precipitation and spring run-off. Proposed activities near the bottom of long sideslopes may be subject to considerable runoff. Maintaining cross drainage beneath proposed roads will help to assure stable road bases, and to avoid concentration of stormwater flows.

DIXFIELD
(Typic Haplorthods)

SETTING

Parent Material: Compact loamy glacial till.

Landform: Glaciated uplands and drumlins.

Position in Landscape: Upper portions of landform.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well drained, with a perched water table 1.5 to 2.5 feet beneath the existing soil surface from November through April and during periods of excessive precipitation.

Typical Profile Description:

Surface layer:	Grayish brown and dark brown fine sandy loam, 0-6"
Subsurface layer:	Strong brown and dark yellowish brown fine sandy loam, 6-19"
Subsoil layer:	Light olive brown gravelly fine sandy loam, 19-24"
Substratum:	Light olive brown gravelly sandy loam, 24-65"

Hydrologic Group: Group C

Permeability: Moderate in the solum, moderately slow or slow in the compact substratum.

Depth to Bedrock: Very deep, greater than 60".

Hazard to Flooding: None

Erosion Factors: K: .17 - .24

INCLUSIONS
(Within Mapping Unit)

Similar: Hermon, Skerry, Becket, Marlow
Dissimilar: Colonel, Tunbridge, Lyman

USE AND MANAGEMENT

Development with Wind Power Projects: Dixfield soils are generally suited for development of wind power projects, in that these soils are moderately well drained with dense basal till substratum. Depths to seasonal high groundwater table can be overcome by redirection of surface water runoff, and/or importation of coarse granular fill, or by providing adequate cross-drainage techniques.

HERMON
(Typic Haplorthods)

SETTING

Parent Material: Hermon - sandy ablation glacial till without a restrictive subsurface.

Landform: Glaciated upland plains, hills and ridges.

Position in Landscape: Both soils occupy uppermost portions of landforms.

Slope Gradient Ranges: **(C)** 8-20% **(D)** 20%+

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Hermon soils are somewhat excessively drained, while Skerry soils are moderately well drained

Drainage Class: Somewhat excessively drained, with a water table greater than 6.0 feet beneath the existing soil surface.

Typical Profile Description:

Surface layer:	Pinkish gray sandy loam, 0-3"
Subsurface layer:	Dark reddish brown, 3-9"
Subsoil layer:	Strong brown & dark yellowish brown, 9-32"
Substratum:	Light olive brown gravelly coarse sand, 32-65"

Hydrologic Group: Hermon: Group A

Surface Run Off: Slow to medium

Permeability: Rapid in the solum, rapid or very rapid in the coarser substratum.

Depth to Bedrock: Very deep, greater than 60".

Hazard to Flooding: None

Erosion Factors: K: .10 - .24

INCLUSIONS
(Within Mapping Unit)

Similar: Marlow, Becket, Adams

Dissimilar: Waumbek (moderately well drained), Skerry, Colonel, Tunbridge, Lyman

USE AND MANAGEMENT

Development of Wind Power Projects: Herman soils are generally suited for the development of wind power projects. The Hermon map unit may also be a source of gravelly materials for use as road subgrades, etc.

LYMAN-TUNBRIDGE COMPLEX

SETTING

Parent Material: Loamy glacial till.

Landform: Glaciated uplands.

Position in Landscape: Upper positions on landform.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Somewhat excessively to well drained, with no evidence of a water table, or only inches from the bedrock surface during spring and periods of heavy precipitation.

Typical Profile Description:

(Lyman)

Surface layer:	Black & reddish brown loam & fine sandy loam, 0-4"
Subsurface layer:	Very dusky red loam, 4-6"
Subsoil layer:	Dark red loam, 6-10"
Substratum layer:	Dark brown to brown loam, 10-20"

(Tunbridge)

Surface layer:	Black and reddish brown loam and fine sandy loam, 0-4"
Subsurface layer:	Very dusky red loam, 4-6"
Subsoil layer:	Dark red loam, 6-10"
Substratum layer:	Dark brown to brown loam, 10-25". Bedrock at 25"

Hydrologic Group: Group C/D

Surface Run Off: Rapid

Permeability: Moderate or moderately rapid.

Depth to Bedrock: Shallow (Lyman, 10-20") to moderately deep (Tunbridge, 20-40").

Hazard to Flooding: None

Erosion Factors: K: .20 - .32

INCLUSIONS (Within Mapping Unit)

Similar: Dixfield, Skerry (deeper than 40" to bedrock)

Dissimilar: Naskeag (in depressional areas), Colonel, Brayton

USE AND MANAGEMENT

Development of Wind Power Projects: Lyman and Tunbridge soils are generally well-suited for construction of wind power projects, in that they generally exhibit no seasonal water table and the shallow to bedrock soil depths can provide for solid anchoring points into the bedrock surface.

MADE LAND

SETTING

Parent Material: Variable

Landform: Variable

Position in Landscape: Variable

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: None assigned

Typical Profile Description:

Surface layer:) Typically this map unit
Subsurface layer:) consists of areas
Subsoil layer:) excavated and reworked
Substratum:) by man, then smoothed.

Hydrologic Group: None assigned

Surface Run Off: Variable

Permeability: Variable

Depth to Bedrock: Variable

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Filled Land

Dissimilar: Small 'made' depressions that contain standing water or have other drainage implications. These may be caused by compaction by vehicular traffic, which is not synonymous with seasonal water tables.

USE AND MANAGEMENT

Development of Wind Power Project: This map unit consists of areas reworked by man, so that the soils are no longer taxonomically classifiable. Limiting factor for development is soil drainage, though somewhat difficult to determine in these map units. Proper foundation drainage or other site alterations recommended for construction. This map unit usually consists of existing graveled roadways.

NASKEAG
(Aeric Haplaquods)

SETTING

Parent Material: Loamy and sandy glacial till over bedrock.

Landform: Depressions of glaciated bedrock ridges.

Position in Landscape: Lowest positions in depressions or concavities in landform.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Somewhat poorly to poorly drained, with a perched water table 0-1.5 feet beneath the soil surface.

Typical Profile Description:

Surface layer:	Very dusky red muck, 0-5"
Subsurface layer:	Light brownish gray and brown sandy loam or loamy sand, 5-16"
Subsoil layer:	Dusky red loamy sand, 10-26"
Substratum:	Light yellowish brown gravelly loamy sand, 26-38"

Hydrologic Group: Group C

Surface Run Off: Moderate or moderately rapid (across bedrock surface)

Permeability: Rapid

Depth to Bedrock: Moderately deep, 20-40" to bedrock surface.

Hazard to Flooding: None, but may be ponded for short duration in spring and during periods of excessive rainfall.

Erosion Factors: K: .10

INCLUSIONS
(Within Mapping Unit)

Similar: Colonel, Brayton, Naskeag SWP

Dissimilar: Rock Outcrop, Naskeag (Variant-V.P.D.), Waskish

USE AND MANAGEMENT

Development of Wind Power Projects: The limiting factor for development of wind power projects is wetness, due to a seasonal high groundwater table near the soil surface for a significant portion of the year, and bedrock which varies generally from 20-40". Naskeag (poorly drained) may also have further limitation as a wetland area, if combined parameter of wet hydrology, hydric soils, and hydrophytic vegetation are all present. The underlying bedrock, generally within 40 inches of the surface, does generally provide for a firm structural foundation for construction if the wetness, due to perched ground water tale, is properly addressed with drainage and/or suitable fill material.

NASKEAG (SWP)
(Aeric Haplaquods)

SETTING

Parent Material: Loamy and sandy glacial till over bedrock.

Landform: Depressions of glaciated bedrock ridges.

Position in Landscape: Lowest positions in depressions or concavities in landform.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Somewhat poorly drained, with a perched water table 7" to 15" beneath the soil surface.

Typical Profile Description:

Surface layer:	Very dusky red muck, 0-5"
Subsurface layer:	Light brownish gray and brown sandy loam or loamy sand, 5-16"
Subsoil layer:	Dusky red loamy sand, 10-26"
Substratum:	Light yellowish brown gravelly loamy sand, 26-38"

Hydrologic Group: Group C

Surface Run Off: Moderate or moderately rapid (across bedrock surface)

Permeability: Rapid

Depth to Bedrock: Moderately deep, 20-40" to bedrock surface.

Hazard to Flooding: None, but may be ponded for short duration in spring and during periods of excessive rainfall.

Erosion Factors: K: .10

INCLUSIONS
(Within Mapping Unit)

Similar: Colonel

Dissimilar: Rock Outcrop, Naskeag PD, Waskish (Moosabec), Lyman

USE AND MANAGEMENT

Development of Wind Power Projects: The limiting factor for development of wind power projects is wetness, due to a seasonal high groundwater table 7 to 12" from the soil surface for a significant portion of the year, and bedrock which varies generally from 20-40". The underlying bedrock, generally within 40 inches of the surface, does generally provide for a firm structural foundation for construction if the wetness, due to perched ground water tale, is properly addressed with drainage and/or suitable fill material.

PEACHAM
(Histic Humaquepts)

SETTING

Parent Material: Organic depositions underlain by compact loamy glacial till.

Landform: Depressions and drainage ways on glaciated uplands.

Position in Landscape: Lowest positions and depressions on landform.

Slope Gradient Ranges: **(A)** 0-3% **(B)** 3-8%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Very poorly drained, with a perched water table within 0.5 feet of the soil surface from November through May.

Typical Profile Description:

Surface layer:	Black organic material, 0-7"
Subsurface layer:	Olive gray loam, 7-10"
Substratum:	Dark greenish gray loam, 10-65"

Hydrologic Group: Group D

Surface Run Off: Moderately rapid to rapid.

Permeability: Moderate or moderately slow in upper layers, and slow or very slow in the dense substratum.

Depth to Bedrock: Deep, greater than 40".

Hazard to Flooding: None, although may be ponded during spring time and periods of excessive precipitation.

INCLUSIONS
(Within Mapping Unit)

Similar: Brayton, Whately

Dissimilar: Naskeag, Sebago

USE AND MANAGEMENT

Development of Wind Power Projects: The limiting factor for development of wind power projects is wetness, due to a seasonal high groundwater table at the surface of the soil for a significant portion of the year. Peacham soil is considered a wetland (hydric) soil, and usually is subjected to wetland permitting requirements, if it is proposed to be impacted. Avoidance of this area, and/or consideration within the environmental wetland permits (DEP NRPA and U.S. ACOE) is recommended.

SKERRY
(Aquic Haplorthods)

SETTING

Parent Material: Loamy glacial till underlain by sandy textured denser till.

Landform: Drumlins and glaciated uplands.

Position in Landscape: Usually occupies upper components of landform.

Slope Gradient Ranges: **(B)** 3-8% **(C)** 8-20%

COMPOSITION AND SOIL CHARACTERISTICS

Drainage Class: Moderately well-drained, with a perched water table 1.5 to 3.5 feet below the soil surface from November through May.

Typical Profile Description:

Surface layer:	Light gray fine sandy loam, 0-4"
Subsurface layer:	Dark reddish brown fine sandy loam, 4-20"
Subsoil layer:	Yellowish brown fine sandy loam, 20-25"
Substratum:	Mixed brown and light olive brown fine sandy loam and sand, 25-65"

Hydrologic Group: Group C

Surface Run Off: Moderate

Permeability: Moderate in solum and slow or moderately slow in the compact substratum.

Depth to Bedrock: Deep, greater than 40".

Hazard to Flooding: None

INCLUSIONS
(Within Mapping Unit)

Similar: Dixfield, Herman, Marlow

Dissimilar: Colonel, Westbury, Tunbridge

USE AND MANAGEMENT

Development of Wind Power Projects: Skerry soils are generally suited for development of wind power projects, in that these soils are moderately well drained with basal till substratum. Depths to seasonal high groundwater table can be overcome by redirection of surface water runoff, and/or importation of coarse granular fill.

APPENDIX D

Soil Profile Descriptions

Town, City, Plantation	Street, Road, Subdivision	Owner's Name
CANTON	CANTON MOUNTAIN WIND PROJECT	PATRIOT RENEWABLES

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 1 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/2)	
10			LIGHT OLIVE BROWN	
	GRAVELLY SANDY LOAM	FIRM	OLIVE	FREE WATER & COMMON, DISTINCT
20				
30				
40		(OXIAQUIC)		
		LIMIT OF EXCAVATION		
50				

FOR WASTEWATER DISPOSAL →

Soil Classification: Profile	Condition	Slope	Limiting Factor	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	10 "	

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
COLONEL	SOMEWHAT POORLY	C

Observation Hole TP 2 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	FINE SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3	
10			BROWN (7.5YR 4/3)	
20	GRAVELLY SANDY LOAM	FIRM	LIGHT OLIVE BROWN (2.5Y 4/3)	FEW, FAINT
30				
40		LIMIT OF EXCAVATION		
50				

Soil Classification: Profile	Condition	Slope	Limiting Factor	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	20 "	

Soil Series Name:	Drainage Class:	Hydrologic Group:
DIXFIELD	MODERATELY WELL	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 3 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	FINE SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
10			LIGHT YELLOW BROWN (10YR 6/4)	
20	GRAVELLY SANDY LOAM	FIRM	OLIVE BROWN	FEW, FAINT
30		LIMIT OF EXCAVATION		
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification: Profile	Condition	Slope	Limiting Factor	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	18 "	

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
DIXFIELD	MODERATELY WELL	C

Observation Hole TP 4 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK BROWN)10YR 3/3)	
10			LIGHT BROWN	
20	GRAVELLY COBBLY SANDY LOAM	FIRM	LIGHT OLIVE BROWN	FEW, FAINT.
30				
40		LIMIT OF EXCAVATION		
50				

Soil Classification: Profile	Condition	Slope	Limiting Factor	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	16 "	

Soil Series Name:	Drainage Class:	Hydrologic Group:
DIXFIELD	MODERATELY WELL	C

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CANTON	CANTON MOUNTAIN WIND PROJECT	PATRIOT RENEWABLES

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 5 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	FINE SANDY LOAM	FRIABLE	DARK GRAYISH BROWN (10YR 3/2)	
10			OLIVE	COMMON, DISTINCT
20		FIRM	OLIVE GRAY	△△△ FREE WATER
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	8 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
COLONEL	SOMEWHAT POORLY	C

Observation Hole TB 6 ☐ Test Pit ■ Boring

_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	FINE SANDY LOAM	FRIABLE	DARK BROWN	
10			LIGHT YELLOW BROWN	
20				
30			REFUSAL IN LARGE ROCK OR BEDROCK	
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	24 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 7 ☐ Test Pit ■ Boring

_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK BROWN	
10			LIGHT YELLOW BROWN	
20			REFUSAL IN LARGE ROCK OR BEDROCK	
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	10 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

Observation Hole TP 8 ■ Test Pit ☐ Boring

_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	FINE SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
10			DARK YELLOW BROWN	
20			LIGHT BROWN	
30			REFUSAL IN LARGE ROCK OR BEDROCK	
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	____ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 9 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	ORGANIC		BLACK	
	SANDY LOAM	FRIABLE	GRAY (10YR 6/1)	
10	REFUSAL IN LARGE ROCK OR BEDROCK			
20				
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	6 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN (VARIANT)	SOMEWHAT EXCESSIVELY	C/D

Observation Hole TP 10 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	ORGANIC		GRAY (ALBIC) 10YR 7/1	
	FINE SANDY LOAM	FRIABLE	STRONG BROWN	
10	REFUSAL IN LARGE ROCK OR BEDROCK			
20				
30				
40				
50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	10 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 11 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	ORGANIC		DARK BROWN	
	SANDY LOAM	FRIABLE	STRONG BROWN	
10			OLIVE BROWN	FREE WATER
	REFUSAL IN LARGE ROCK OR BEDROCK			
20				
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	8 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
NASKEAG (SWP)	POORLY DRAINED	C

Observation Hole TP 12 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			DARK BROWN	
	SANDY LOAM	FRIABLE		
10			STRONG BROWN (7.5YR 4/6)	
20				
30	REFUSAL IN LARGE ROCK OR BEDROCK			
40				
50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	28 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 13 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
ORGANIC		BLACK	
SANDY LOAM	FRIABLE	DARK BROWN	
REFUSAL IN LARGE ROCK OR BEDROCK			

FOR WASTEWATER DISPOSAL →

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	10 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

Observation Hole TP 14 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
		GRAY (10YR 7/1)	
SANDY LOAM	FRIABLE		
		STRONG BROWN	
REFUSAL IN LARGE ROCK OR BEDROCK			

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	23 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 15 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
			△△△
PEAT		BLACK	FREE WATER
	FRIABLE TO LOOSE		
LIMIT OF EXCAVATION			

FOR WASTEWATER DISPOSAL →

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	0 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
WONSQUEAK (VASSALBORO)	VERY POORLY DRAINED	D

Observation Hole TB 16 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
		DARK BROWN	
SANDY LOAM	FRIABLE	STRONG BROWN (7.5YR 4/6)	
REFUSAL IN LARGE ROCK OR BEDROCK			

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	12 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 17 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE		
10	REFUSAL IN LARGE ROCK OR BEDROCK			
20				
30				
40				
50				

FOR WASTEWATER DISPOSAL

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	6 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 18 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
10	GRAVELLY SANDY LOAM		GRAY DARK YELLOW BROWN	
20	REFUSAL IN LARGE ROCK OR BEDROCK			
30				
40				
50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 19 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
10			REDDISH BROWN (5YR 4/2)	
20	REFUSAL IN LARGE ROCK OR BEDROCK			
30				
40				
50				

FOR WASTEWATER DISPOSAL

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	15 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 20 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Depth	Texture	Consistency	Color	Mottling
0	ORGANIC		BLACK	
10	SANDY LOAM	FRIABLE	GRAY (ALBIC) (10YR 7/1)	
20	GRAVELLY COARSE SAND		DARK YELLOW BROWN	
30	REFUSAL IN LARGE ROCK OR BEDROCK			
40				
50				

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	21 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

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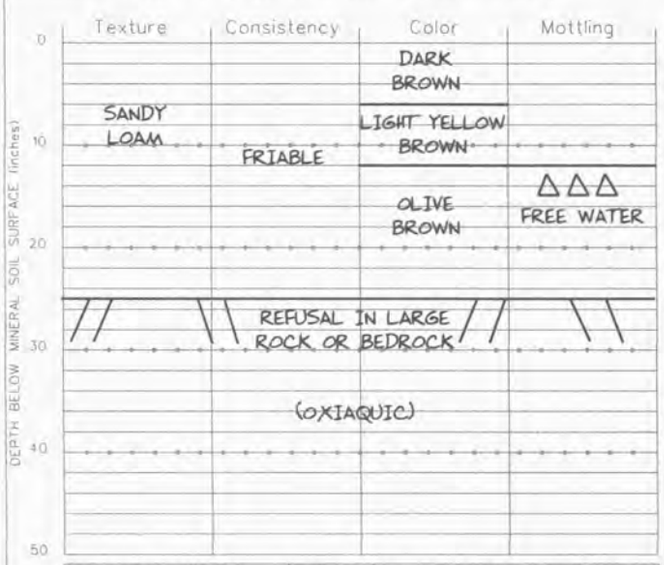
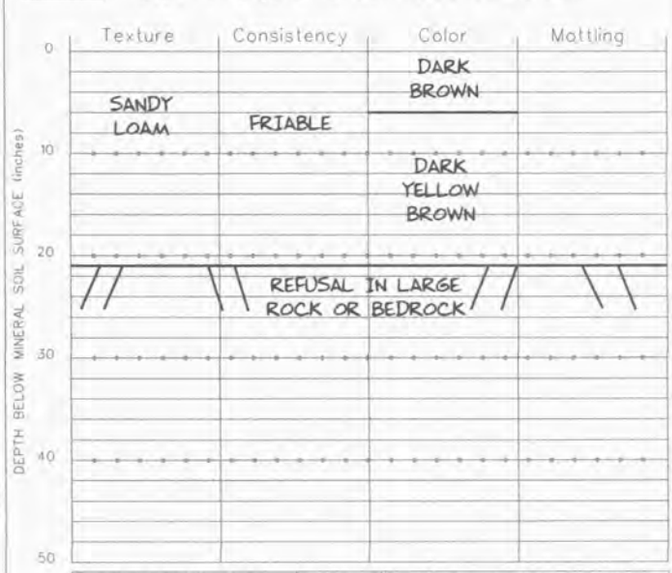
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 21 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil



FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: ____%	Limiting Factor: 12 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: NASKEAG (SWP)	Drainage Class: POORLY DRAINED	Hydrologic Group: C	

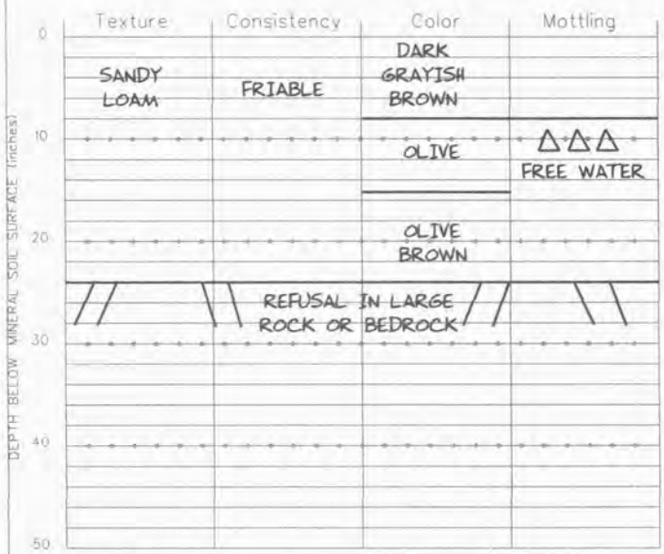
Observation Hole TB 22 ☐ Test Pit ■ Boring
_____" Depth of Organic Horizon Above Mineral Soil



Soil Classification: Profile / Condition	Slope: ____%	Limiting Factor: 21 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth
Soil Series Name: LYMAN/TUNBRIDGE	Drainage Class: WELL DRAINED	Hydrologic Group: C/D	

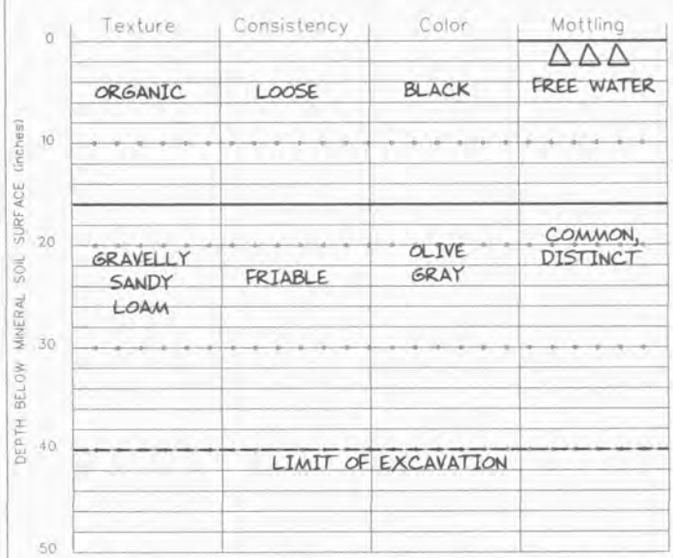
SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 23 ☐ Test Pit ■ Boring
_____" Depth of Organic Horizon Above Mineral Soil



FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: ____%	Limiting Factor: 8 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: NASKEAG (SWP)	Drainage Class: POORLY DRAINED	Hydrologic Group: C	

Observation Hole TP 24 ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil



Soil Classification: Profile / Condition	Slope: ____%	Limiting Factor: 0 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
Soil Series Name: WONSQUEAK	Drainage Class: VERY POORLY DRAINED	Hydrologic Group: D	

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 25 ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
ORGANIC		BLACK	
SANDY LOAM	FRIABLE	YELLOW BROWN	
		LIGHT YELLOW BROWN	
REFUSAL IN LARGE ROCK OR BEDROCK			

Soil Classification: Profile / Condition	Slope	Limiting Factor	
	___ %	33 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

Observation Hole TB 26 ☐ Test Pit ■ Boring
" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
		REDDISH BROWN (5YR 4/4)	
REFUSAL IN LARGE ROCK OR BEDROCK			

Soil Classification: Profile / Condition	Slope	Limiting Factor	
	___ %	24 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 27 ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
GRAVELLY COARSE SANDY LOAM		BROWN (10YR 4/3)	
		BROWN (10YR 5/3)	
REFUSAL IN LARGE ROCK OR BEDROCK			

Soil Classification: Profile / Condition	Slope	Limiting Factor	
	___ %	18 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

Observation Hole TP 28 ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
		GRAY (10YR 6/1)	
FINE SANDY LOAM		DARK BROWN (10YR 3/3)	
	FRIABLE	REDDISH BROWN (5YR 4/1)	
SANDY LOAM			
REFUSAL IN LARGE ROCK OR BEDROCK			

Soil Classification: Profile / Condition	Slope	Limiting Factor	
	___ %	33 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

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CANTON	CANTON MOUNTAIN WIND PROJECT	PATRIOT RENEWABLES

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 29 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK REDDISH GRAY (10YR 4/1)	
10			DARK REDDISH BROWN (5YR 3/2)	
20			BROWN (10YR 4/3)	
30				
40	REFUSAL IN LARGE ROCK OR BEDROCK			
50				

	Soil Classification (Profile / Condition)	Slope	Limiting Factor		Soil Series Name	Drainage Class	Hydrologic Group
FOR WASTEWATER DISPOSAL		___ %	36 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth			
FOR SOILS MAPPING					TUNBRIDGE	WELL DRAINED	C

Observation Hole TP 30 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	FINE SANDY LOAM	FRIABLE	GRAY (5YR 5/1)	
10			BROWN (7.5YR 4/3)	ΔΔΔ FREE WATER
20			LIGHT OLIVE BROWN (2.5Y 5/3)	
30	REFUSAL IN LARGE ROCK OR BEDROCK			
40				
50				

	Soil Classification (Profile / Condition)	Slope	Limiting Factor		Soil Series Name	Drainage Class	Hydrologic Group
FOR WASTEWATER DISPOSAL		___ %	9 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth			
FOR SOILS MAPPING					NASKEAG (SWP)	POORLY DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 31 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK GRAYISH BROWN (10YR 4/2)	
10	REFUSAL IN LARGE ROCK OR BEDROCK			
20				
30				
40				
50				

	Soil Classification (Profile / Condition)	Slope	Limiting Factor		Soil Series Name	Drainage Class	Hydrologic Group
FOR WASTEWATER DISPOSAL		___ %	10 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth			
FOR SOILS MAPPING					LYMAN	SOMEWHAT EXCESSIVELY	C/D

Observation Hole TP 32 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	GRAYISH BROWN (10YR 5/2)	
10			STRONG BROWN (7.5YR 4/1)	
20			BROWN (10YR 4/3)	
30	REFUSAL IN LARGE ROCK OR BEDROCK			
40				
50				

	Soil Classification (Profile / Condition)	Slope	Limiting Factor		Soil Series Name	Drainage Class	Hydrologic Group
FOR WASTEWATER DISPOSAL		___ %	25 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth			
FOR SOILS MAPPING					TUNBRIDGE	WELL DRAINED	C

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 33 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM	FRIABLE	DARK GRAY (10YR 4/1)	
REFUSAL IN LARGE ROCK OR BEDROCK			

FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: %	Limiting Factor: 8 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: LYMAN	Drainage Class: SOMEWHAT EXCESSIVELY	Hydrologic Group: C/D	

Observation Hole TB 34 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
ORGANIC	LOOSE	BLACK	
FINE SANDY LOAM	FRIABLE		

	Soil Classification: Profile / Condition	Slope: %	Limiting Factor: 0 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
	Soil Series Name: NASKEAG (P.D)	Drainage Class: POORLY DRAINED	Hydrologic Group: C	

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 35 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
ORGANIC PEAT	LOOSE	BLACK	△△△ FREE WATER
LIMIT OF EXCAVATION			

FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: %	Limiting Factor: 0 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: WONSQUEAK (VASSALBORO)	Drainage Class: VERY POORLY DRAINED	Hydrologic Group: D	

Observation Hole TP 36 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	GRAY (7.5YR 6/1) STRONG BROWN (7.5YR 5/6)	
REFUSAL IN LARGE ROCK OR BEDROCK			

	Soil Classification: Profile / Condition	Slope: %	Limiting Factor: 12 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth
	Soil Series Name: LYMAN	Drainage Class: SOMEWHAT EXCESSIVELY	Hydrologic Group: C/D	

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 37 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
		DARK YELLOW BROWN (10YR 4/4)	
		LIGHT OLIVE BROWN (2.5YR 5/3)	
REFUSAL IN LARGE ROCK OR BEDROCK			

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	28 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 38 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
		BROWN (10YR 4/3)	FEW, FAINT
		OLIVE BROWN (2.5Y 4/3)	
	FIRM		COMMON, DISTINCT

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	10 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
COLONEL	SOMEWHAT POORLY	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 39 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	NONE EVIDENT
		DARK BROWN (7.5YR 3/3)	
BEDROCK			

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	20 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN/TUNBRIDGE	WELL DRAINED	C/D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 40 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
		DARK YELLOW BROWN 10YR 3/4)	
		OLIVE BROWN (2.5Y 4/3)	
REFUSAL IN LARGE ROCK OR BEDROCK			

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	31 "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ■ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 41 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FROZEN	DARK BROWN (10YR 3/3)	
	FRIABLE	DARK YELLOW BROWN 10YR 3/4)	
REFUSAL IN LARGE ROCK OR BEDROCK			

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	15 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth
FOR SOILS MAPPING	Soil Series Name: LYMAN	Drainage Class: SOMEWHAT EXCESSIVELY	Hydrologic Group: C/D	

Observation Hole TP 42 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	VERY DARK GRAYISH BROWN (10YR 3/2)	
		OLIVE	FREE WATER
BEDROCK			

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	10 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
FOR SOILS MAPPING	Soil Series Name: NASKEAG (SWP)	Drainage Class: POORLY	Hydrologic Group: C	

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 43 ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	DARK BROWN	
		DARK REDDISH-BROWN	
REFUSAL IN LARGE ROCK OR BEDROCK			

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	16 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth
FOR SOILS MAPPING	Soil Series Name: LYMAN	Drainage Class: SOMEWHAT EXCESSIVELY	Hydrologic Group: C/D	

Observation Hole TP 44 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM	FRIABLE	BLACK	
		DUSKY RED (2.5YR 3/3)	
BEDROCK			

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	14 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth
FOR SOILS MAPPING	Soil Series Name: LYMAN	Drainage Class: SOMEWHAT EXCESSIVELY	Hydrologic Group: C/D	

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 45 ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	ORGANIC		BLACK	
	SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
10	BEDROCK			
20				
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	4 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

Observation Hole TB 46 ☐ Test Pit ■ Boring
" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			BLACK	
	SANDY LOAM	FRIABLE	DARK REDDISH BROWN	
10	BEDROCK			
20				
30				
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	11 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 47 ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	ORGANIC		BLACK	
			VERY DARK BROWN (7.5YR 3/1)	
10	VERY FINE SANDY LOAM	FRIABLE		
			DARK OLIVE GRAY (5Y 3/2)	△△△ FREE WATER
20				
30	BEDROCK			
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	10 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
NASKEAG (SWP)	POORLY	C

Observation Hole TP 48 ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	ORGANIC		BLACK	
	SANDY LOAM	FRIABLE	BROWN (7.5YR 5/2)	
10	BEDROCK			
20				
30				
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	6 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN (VARIANT)	SOMEWHAT EXCESSIVELY	C/D

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 49 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
FINE SANDY LOAM (0–10)	FRIABLE	DARK BROWN (10YR 3/3)	
		DARK YELLOW BROWN (10YR 4/3)	
GRAVELLY SANDY LOAM (10–20)		LIGHT OLIVE BROWN (2.5Y 5/3)	
REFUSAL IN LARGE ROCK OR BEDROCK (40)			

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	39 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

Observation Hole TP 50 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM (0–10)	FRIABLE	BLACK	
		DARK GRAY (10YR 4/1)	
		DARK BROWN (7.5Y 3/4)	
		BROWN (10YR 4/3)	
BEDROCK (30)			

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	28 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE	WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 51 ■ Test Pit ☐ Boring

3 " Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM (0–10)		DARK BROWN (10YR 3/3)	
		DARK YELLOW BROWN (10YR 4/3)	
GRAVELLY LOAMY SAND (10–20)	FRIABLE	LIGHT BROWN	
COBBLE (20–30)	SOMEWHAT FIRM		
LIMIT OF EXCAVATION (40)			

Soil Classification	Slope	Limiting Factor	
3 Profile / B Condition	5 %	24 "	☐ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
BECKET	WELL DRAINED	C

Observation Hole TP 52 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling
SANDY LOAM (0–10)		DARK BROWN	
GRAVELLY LOAMY SAND (10–20)	FRIABLE	DARK YELLOW BROWN (10YR 4/3)	
		LIGHT BROWN (30)	
LIMIT OF EXCAVATION (REFUSAL IN COBBLE OR LARGE BOULDER) (40)			

Soil Classification	Slope	Limiting Factor	
Profile / Condition	%	"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
BECKET	WELL DRAINED	C

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 53 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM		DARK BROWN (10YR 3/3)	
10–20	LOAMY SAND	FRIABLE	DARK BROWN (10YR 3/4)	
20–30	VERY GRAVELLY LOAMY SAND		BROWN (10YR 4/3)	
30–50	REFUSAL; LARGE BOULDER AND/OR BASAL TILL			

FOR WASTEWATER DISPOSAL →

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	___ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
BECKET	WELL DRAINED	C

Observation Hole TP 54 ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	BLACK / DARK YELLOW BROWN	
10–20	COBBLY SANDY LOAM		BROWN	
20–30	REFUSAL ON LARGE BOULDER OR BASAL TILL			

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	28 "	☐ Ground Water ■ Restrictive Layer ☐ Bedrock ■ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
MARLOW (INCLUSION)	WELL DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole _____ ☐ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling

FOR WASTEWATER DISPOSAL →

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	___ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:

Observation Hole _____ ☐ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

Texture	Consistency	Color	Mottling

Soil Classification (Profile / Condition)	Slope	Limiting Factor	
	___ %	___ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 1A ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN; GRAY (ALBIC)	
10–20			STRONG BROWN 7.5YR 4/4	
20–30		FIRM		
30–50				

Soil Classification	Slope	Limiting Factor	
Profile: ____ Condition: ____	____ %	____ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
DIXFIELD	MODERATELY WELL	C

Observation Hole TP 2A ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	SANDY LOAM	FRIABLE	DARK BROWN (10YR 3/3)	
10–20			DARK YELLOW BROWN (10YR 4/4)	
20–30			LIGHT BROWN	
30–40		FIRM		
40–50				

Soil Classification	Slope	Limiting Factor	
Profile: ____ Condition: ____	____ %	____ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
MARLOW	WELL DARINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 3A ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	VERY FINE SANDY LOAM	FRIABLE	VERY DARK BROWN (7.5Y 3/1)	OXIDIZED RHIZOSPHERES COMMON, DISTINCT
10–20	SANDY LOAM		GRAYISH BROWN (2.5Y 5/2)	
20–30		FIRM		
30–50				

Soil Classification	Slope	Limiting Factor	
Profile: ____ Condition: ____	____ %	____ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR WASTEWATER DISPOSAL →

FOR SOILS MAPPING → Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON	POORLY DRAINED	C

Observation Hole TP 4A ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)

	Texture	Consistency	Color	Mottling
0–10	FINE SANDY LOAM	FRIABLE	DARK BROWN (7.5YR 3/2); DARK BROWN (7.5YR 3/4)	
10–20	SANDY LOAM		LIGHT OLIVE BROWN (2.5Y 5/4)	FEW, FAINT
20–30		FIRM		COMMON DISTINCT
30–40		LIMIT OF EXCAVATION		
40–50				

Soil Classification	Slope	Limiting Factor	
Profile: ____ Condition: ____	____ %	____ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
DIXFIELD	MODERATELY WELL	C

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 5A ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			DARK GRAYISH BROWN (5Y 25/2)	
10	LOAMY SAND	FRIABLE	VERY DARK GRAYISH BROWN (25Y 3/2)	COMMON, DISTINCT
20		FIRM		
		LIMIT OF EXCAVATION		
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	____"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON (VARIANT)	POORLY DRAINED	C

Observation Hole TB 6A ☐ Test Pit ■ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	SANDY LOAM	FRIABLE	DARK YELLOW BROWN	
20		REFUSAL IN-LARGE BOULDER OR BEDROCK		
30				
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	____"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
LYMAN	SOMEWHAT EXCESSIVELY	C/D

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 7A ■ Test Pit ☐ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			GRAY (25Y 5/1)	
10	SANDY LOAM	FRIABLE	GRAYISH BROWN (25Y 5/2) WITH LIGHT OLIVE BROWN MOTTLES (25Y 5/4)	COMMON, DISTINCT
20		FIRM		
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	____"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON (VARIANT)	POORLY DRAINED	C

Observation Hole TB 8A ☐ Test Pit ■ Boring
_____" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	SANDY LOAM	FRIABLE	DARK YELLOW BROWN	
20	LOAMY SAND			
30				
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile ____ Condition ____	____ %	____"	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
HERMON	SOMEWHAT EXCESSIVELY	A

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Town, City, Plantation	Street, Road Subdivision	Owner's Name
CANTON	CANTON MOUNTAIN WIND PROJECT	PATRIOT RENEWABLES

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 76A ☐ Test Pit ■ Boring
3 " Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	GRAY (ALBIC)	
10			DARK YELLOW BROWN	FEW, FAINT
20	REFUSAL IN BASAL TILL			
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile: — Condition: —	___ %	___ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
COLONEL	SOMEWHAT POORLY	C

Observation Hole TB 77A ☐ Test Pit ■ Boring
" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	DARK GRAYISH BROWN	
10			OLIVE	
20	REFUSAL IN BASAL TILL			
30				
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile: — Condition: —	___ %	___ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON	POORLY DRAINED	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TB 78A ☐ Test Pit ■ Boring
" Depth of Organic Horizon Above Mineral Soil

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0	SANDY LOAM	FRIABLE	BLACK (2.5Y 2.5/1)	
10			VERY DARK GRAYISH BROWN (2.5Y 3/2)	MOTTLES LIGHT OLIVE BROWN (2.5Y 5/3)
20	LARGE STONE	REFUSAL IN LARGE STONE		
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification	Slope	Limiting Factor	
Profile: — Condition: —	___ %	___ "	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
BRAYTON	POORLY DRAINED	C

Observation Hole TP 79A ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil
SOIL TEST PIT EXCAVATED BY BACKHOE

Depth below mineral soil surface (inches)	Texture	Consistency	Color	Mottling
0			DARK BROWN 10YR3/3	
10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK YELLOWISH BROWN 10YR4/6	NONE EVIDENT
20			YELLOWISH BROWN 10YR5/6	
30	REFUSAL (LARGE STONES/BEDROCK)			
40				
50				

Soil Classification	Slope	Limiting Factor	
Profile: — Condition: —	___ %	30 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

Soil Series Name:	Drainage Class:	Hydrologic Group:
TUNBRIDGE (INCLUSION)	WELL DRAINED	C

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 80A ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK BROWN	
			DARK YELLOWISH BROWN 10YR4/6	
10–20			YELLOWISH BROWN 10YR5/6	
20–30		SOMEWHAT FIRM	LIGHT OLIVE BROWN 2.5Y5/4	FEW FAINT
30–50				

FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: ___ %	Limiting Factor: 28 "	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: DIXFIELD	Drainage Class: MODERATELY WELL	Hydrologic Group: C	

Observation Hole TP 81A ■ Test Pit ☐ Boring

3+/- " Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	VERY DARK GRAY 10YR3/2	
			DARK REDDISH BROWN 5YR3/4 W/ REDOX DEPLETIONS	REDOX DEPLETIONS
10–20				
20–30	GRAVELLY SANDY LOAM	SOMEWHAT FIRM TO FIRM	OLIVE BROWN	COMMON FAINT COMMON WOODY ROOTS TO 20"
30–40				
40–50		REFUSAL (LARGE STONES/BEDROCK)		

FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: ___ %	Limiting Factor: 9 "	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: COLONEL/NASKEAG	Drainage Class: SWP/PD	Hydrologic Group: C	

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 82A ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK BROWN 10YR3/3	
			DARK YELLOWISH BROWN 10YR4/6	
10–20			MIXED DARK YELLOWISH BROWN W/ REDOX	FEW FAINT
20–30			OLIVE BROWN	COMMON FAINT
30–40				
40–50		LIMIT OF EXCAVATION		

FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: ___ %	Limiting Factor: 14 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: COLONEL (NOT OXYAQUIC)	Drainage Class: SOMEWHAT POORLY	Hydrologic Group: C	

Observation Hole TP 83A ■ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK BROWN 10YR3/3	
			DARK YELLOWISH BROWN 10YR4/6	
10–20			YELLOWISH BROWN 10YR5/6	
20–30	SANDY LOAM	FIRM	OLIVE BROWN	COMMON DISTINCT
30–40				
40–50		REFUSAL (LARGE STONES/BEDROCK)		

FOR WASTEWATER DISPOSAL →	Soil Classification: Profile / Condition	Slope: ___ %	Limiting Factor: "	☐ Ground Water ■ Restrictive Layer ■ Bedrock ☐ Pit Depth
FOR SOILS MAPPING →	Soil Series Name: TUNBRIDGE-DIXFIELD	Drainage Class: WELL-MODERATELY WELL	Hydrologic Group: C	

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 84A ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil
SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK BROWN; STRONG BROWN	NONE EVIDENT
10–20	BEDROCK			
20–50				

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	17 "	☐ Ground Water ☐ Restrictive Layer ■ Bedrock ☐ Pit Depth

FOR SOILS MAPPING	Soil Series Name:	Drainage Class:	Hydrologic Group:
	LYMAN	SOMEWHAT EXCESSIVELY	C/D

Observation Hole TP 85A ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil
SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK BROWN 10YR3/3; DARK YELLOWISH BROWN 10YR4/6	
10–20	SANDY LOAM & LOAMY SAND		OLIVE BROWN	
20–30		SOMEWHAT FIRM TO FIRM	LIGHT OLIVE BROWN	FEW FAINT
30–50	LIMIT OF EXCAVATION (REFUSAL)			

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	27 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING	Soil Series Name:	Drainage Class:	Hydrologic Group:
	DIXFIELD (INCLUSIONS OF MARLOW)	MODERATELY WELL	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 86A ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil
SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK BROWN 10YR3/3; DARK YELLOWISH BROWN 10YR4/6	
10–20	GRAVELLY SANDY LOAM		YELLOWISH BROWN 10YR5/6	
20–30			LIGHT OLIVE BROWN	FEW FAINT
30–40	GRAVELLY SANDY LOAM & LOAMY SAND	FIRM TO VERY FIRM	OLIVE	COMMON FAINT
40–50	LIMIT OF EXCAVATION			

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	26 "	■ Ground Water ■ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING	Soil Series Name:	Drainage Class:	Hydrologic Group:
	DIXFIELD	MODERATELY WELL	C

Observation Hole TP 87A ■ Test Pit ☐ Boring
" Depth of Organic Horizon Above Mineral Soil
SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0–10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK BROWN 10YR3/3; DARK YELLOWISH BROWN 10YR4/6	
10–30			YELLOWISH BROWN 10YR5/6	REDOX CONCENTRATIONS
30–40	GRAVELLY SANDY LOAM	FIRM TO VERY FIRM	LIGHT OLIVE BROWN 2.5Y5/4	COMMON FAINT
40–50	LIMIT OF EXCAVATION			

FOR WASTEWATER DISPOSAL	Soil Classification (Profile / Condition)	Slope	Limiting Factor	
		___ %	24 "	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth

FOR SOILS MAPPING	Soil Series Name:	Drainage Class:	Hydrologic Group:
	DIXFIELD	MODERATELY WELL	C

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10/4/10 — Date

[1/18/2011 REVISED]

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SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole TP 88A ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK YELLOWISH BROWN 10YR4/6	
20			YELLOWISH BROWN 10YR5/6	
30	GRAVELLY SANDY LOAM & LOAMY SAND	FIRM TO VERY FIRM	LIGHT OLIVE BROWN 2.5Y5/4	COMMON FAINT
40				
50	(LIMIT OF EXCAVATION @ 56")			

FOR WASTEWATER DISPOSAL →

Soil Classification: Profile	Condition	Slope	Limiting Factor	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	27 "	

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:
DIXFIELD/SKERRY	MODERATELY WELL	C

Observation Hole TP 89A ☐ Test Pit ■ Boring

" Depth of Organic Horizon Above Mineral Soil

SOIL TEST PIT EXCAVATED BY BACKHOE

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0			DARK BROWN	
10	GRAVELLY FINE SANDY LOAM	FRIABLE	DARK YELLOWISH BROWN	
20			YELLOWISH BROWN	
30	SANDY LOAM W/ LOAMY SAND LENSES	SOMEWHAT FIRM TO FIRM	MIXED OLIVE BROWN	COMMON FAINT
40				
50	LIMIT OF EXCAVATION			

Soil Classification: Profile	Condition	Slope	Limiting Factor	■ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	22 "	

Soil Series Name:	Drainage Class:	Hydrologic Group:
DIXFIELD/SKERRY	MODERATELY WELL	C

SOIL DESCRIPTION AND CLASSIFICATION (Location of Observation Holes Shown Above)

Observation Hole ___ ☐ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

FOR WASTEWATER DISPOSAL →

Soil Classification: Profile	Condition	Slope	Limiting Factor	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	"	

FOR SOILS MAPPING →

Soil Series Name:	Drainage Class:	Hydrologic Group:

Observation Hole ___ ☐ Test Pit ☐ Boring

" Depth of Organic Horizon Above Mineral Soil

DEPTH BELOW MINERAL SOIL SURFACE (inches)	Texture	Consistency	Color	Mottling
0				
10				
20				
30				
40				
50				

Soil Classification: Profile	Condition	Slope	Limiting Factor	☐ Ground Water ☐ Restrictive Layer ☐ Bedrock ☐ Pit Depth
		___ %	"	

Soil Series Name:	Drainage Class:	Hydrologic Group:

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10/4/10 — Date [1/18/2011 REVISED]

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APPENDIX E

Glossary Of Soil Terminology

Depth Classes

These refer to the depth of the particle control section used to describe the central concept of each taxonomic unit. These are as follows:

Very shallow	less than 10" to bedrock
Shallow	10" to 20" to bedrock
Moderately deep	20" to 40" to bedrock
Deep	40" to 60" deep
Very deep	greater than 60"

Drainage Class

Drainage class is a reference to the frequency and duration of periods of soil saturation and/or action by seasonal groundwater tables, as evidenced by soil morphologic features identified within each respective soil profile.

Seven classes of soil drainage are recognized:

Excessively drained	water is removed from the soil very rapidly. These are commonly very coarse-textured, rocky or shallow. All are free of soil mottling related to wetness.
Somewhat excessively drained	water is removed from the soil rapidly. Many somewhat excessively drained soils are sandy-textured and very pervious/porous. Some are shallow. Some occur on steep slopes where much of the water they receive is lost as runoff. These too are free of observed mottling due to wetness.
Well drained	Water is removed from the soil readily, but not rapidly. It may be available for plant growth at the deepest rooting depths, and not so wet as to inhibit the growth of plant roots for significant periods during most growing seasons. Well drained soils are often medium textured, or contain restrictive subhorizons generally below 24". They are mainly free of mottling related to wetness.

Moderately well drained	water is removed from the spoils somewhat slowly during wet periods and spring seasons. Moderately well drained soils are saturated in the upper soil profile for short duration during the growing season. Often, they contain a slowly pervious (or restrictive) layer beneath the solum, and may receive additional runoff from upslope areas.
Somewhat poorly drained	water is removed so slowly that the soil is wet for significant periods during the growing season. Somewhat poorly drained soils commonly have an impervious substratum that contributes to a perched water table, additional water through sideslope seeps, long continuous sheet flows below large watershed areas with few or no outlets, or a combination of these together.
Poorly drained	water is removed from these soils so slowly that the soil is saturated during the growing season or remains wet for long durations. Water is present during the growing season which may be prohibitive to plant root growth, due to anaerobic/saturated conditions. These soils are classified as hydric, and may also have implications as wetlands.
Very poorly drained	water is removed from these soils so slowly that free water can be observed at or very near the mineral soil surface for long durations during the growing season. These commonly occur on nearly level slopes or in depressional areas, and can be frequently ponded. Often they include thick organic surface horizons.

Hydrologic Soil Groups

A hydrologic soil group is a class of numerous soil series that all have the same runoff potential under similar climate and vegetative conditions. Soil properties that can influence runoff are those that affect minimum infiltration rates for a bare soil after prolonged wetting and with no frozen ground surface. Most important are depth to seasonal high groundwater table, permeability rates after prolonged wetting, and depth to slowly permeable (restrictive) layer.

Permeability

Permeability is the soil property which enables water to move downward through the soil profile. It is measured as the number of inches per hour of water that can be added to a particular soil as it moves downward through the unsaturated soil. Terminology and ranges are as flows:

Very slow	less than 0.06 in./hr
Slow	0.06 to 0.20 in./hr
Moderately slow	0.20 to 0.60 in./hr
Moderate	0.6 to 2.0 in./hr
Moderately rapid	2.0 to 6.0 in./hr
Rapid	6.0 to 20 in./hr

Soil Erodibility (K Factor)

The measure of soil erodability, or K factor, is the susceptibility of a soil particle to detachment and transport by rainfall. K factors for soil in Maine vary from 0.02 to 0.69. The higher the value, the more susceptible the named soil is to sheet or rill erosion by water.

Soil properties which influence erosion are those that can affect infiltration rates, movement of water through the soil profile and the water storage capacity of a soil. Other soil properties can affect the dispersion and mobility of soil particles by rainfall ad/or runoff. Some of the most important of these properties include soil layer, and the size and stability of the soil structural aggregates in the exposed faces of subsoils. Background levels of soil moisture and the presence of frozen soil horizons also can influence erosion.

Soil Texture

Soil texture refers to the USDA classification for the relative proportions by weight of the several soil particle size classes that are finer than 2 millimeters in diameter, which form the fine earth fraction. (Materials larger than 2 mm. in diameter are considered rock fragments).

Soil texture can influence on plant growth, or the soil mechanics of a particular site when used as construction and/or backfill material for foundations, etc. It influences such physical properties as load bearing strength, permeability, shrink/swell potential (frost action or due to wetness), compressibility and compaction. Rock fragment size and content can also affect applications for use as construction materials.

Soil Texture Modifiers

Named soil texture classes can be further modified by the addition of appropriate adjectives when rock fragment content approaches 15% by volume (i.e. gravelly sandy loam). “Mucky” or “peaty” are modifying terms used when organic matter content reaches 40% (i.e. mucky silt/loam).

Surface Runoff

Surface runoff is water that flows away from the soil over the surface of the site without infiltrating into the ground surface. It may originate from precipitation, or as drainage water from adjacent, upslope areas. The rate and amount of runoff are affected by internal physical

characteristics of the soil as well as slope gradient ranges and landform shape (i.e. concave vs. convex slopes). Runoff can be significantly different on a given soil under natural vegetation, cultivation by man, or other kinds of management. Runoff from a particular site can also be affected by other factors such as rainfall amounts, snow pack accumulation or other climatic fluctuations. Surface runoff is usually significantly greater on frozen ground surfaces.

Six categories for runoff rates are provided:

Ponded	little or none of the precipitation and run-on (from surrounding, higher elevations) escapes the site as runoff. Free water stands on or above the existing soil surface for significant periods of time. Ponding normally appears on level to nearly level (i.e. <3%) slopes, in depressions or within concavities in a pit/mound micro-relief topography. Water depth may vary considerably throughout the year, or from year to year. Often this is consistent with very poorly drained soils.
Very slow	surface water flows away slowly, and free water may be present at the soil surface for portions of the year, or may infiltrate slowly into the soil surface when not ponded. These soils may be consistent with very poorly drained, or poorly drained soils that are coarser textured and somewhat porous.
Slow	surface water flows away from the soil quickly enough, either due to slope or the porosity of the soils, so that free water can be observed at the soil surface for moderate periods immediately following spring snowmelt or prolonged storm rainfall events. Most of the water passes through the soil, is used by plants, or evaporates.
Medium	surface water flows away quickly enough due to slope or soil porosity that water is observed at or near the soil surface for short durations, usually during spring snowmelt or immediately following significant storm rainfall events.
Rapid	surface water flows away quickly enough that any period of saturation is brief, and free water does not stand on the soil surface. Only a small portion of the water enters the soil as infiltration, either due to steep slopes and/or fine textures with slow rates of absorption.
Very rapid	surface water flows away so quickly that duration of any event is brief, and water never stands on the soil surface. Only a very small portion of the available moisture enters the soil as infiltration.

ADDITIONAL SOIL TERMS

Flooding (Hazard to flooding)

Flooding is the temporary covering of the soil surface by flowing water from any source, including but not limited to: streams or rivers overflowing their banks, runoff from adjacent or upslope areas, inflow from high tide action, or a combination of sources. Water due to snowmelt is excluded from this definition, as is standing or ponded water that forms a permanent or semi-permanent cover above the soil surface.

Flooding hazard is further expressed by frequency classes, duration, and the time of year that the flooding occurs. The velocity and depth of the floodwater are also important factors.

Oxyaquic — Soil drainage conditions that imply soil saturation for prolonged periods, which are rich in dissolved oxygen and therefore do not exhibit the anaerobic conditions necessary to create hydric soil morphology.

Ponding — Ponding is standing water in a closed depression. The water is removed only by evaporation, transpiration by plants, or percolation through the ground.

Soil complex — A map unit that consist of two or more kinds of soils (i.e. soil series/taxonomic unit) that occur on a non-regular, non-repeating pattern that cannot be separated out at the scale provided. The order of the soils named is generally in order of predominance within the map unit.

Soil map unit — A collection of soils or soil areas that are delineated during soils mapping. It generally is an aggregate of several soil entities with a predominant named soil type. Kinds of soil map units may include complexes, consociations, or associations.

Soil slope gradient range

The slope identified for any given map unit, based on the immediate topography within a specific portion of the mapping site. Designations generally are as follows:

A	0-3%	nearly level to level
B	3-8%	gently sloping
C	8-20%	moderately sloping
D	20%+	steeply sloping

Stoniness — This is a phase of surface characteristic that may be identified in soils mapping, ranging from stony or bouldery (0.01 to 0.1% of

soil surface covered with stones) to rubbly or rubble land, in which up to 75% of the soil surface is covered with stones. Extremely stony sites or sites with rubble land may have additional limitations for use of mechanized equipment.

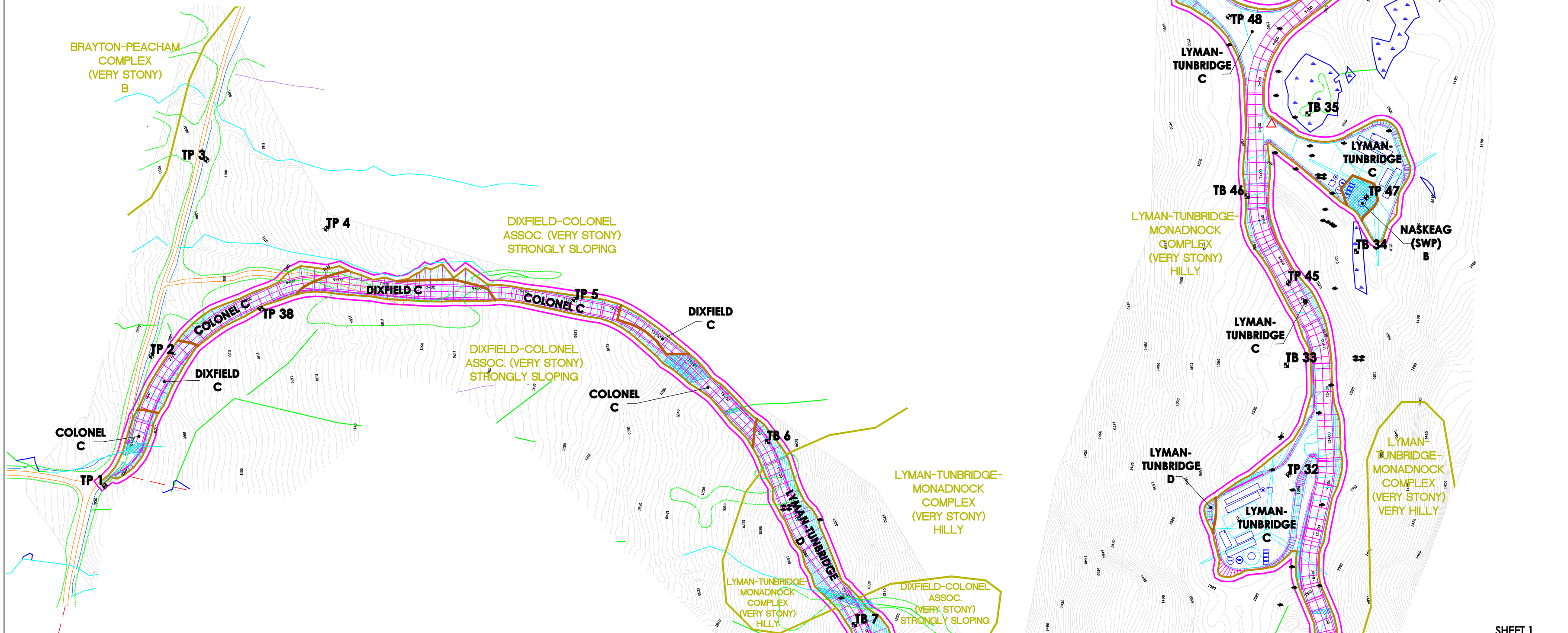
Stony — The areas have enough stones at or near the surface to be a continuing nuisance during operations that mix the surface layer, but they do not make most such operations impractical. Conventional, wheeled vehicles can move with reasonable freedom over the area. Stones may damage both the equipment that mixes the soil and the vehicles that move on the surface. Usually these areas have Class 1 stoniness. If necessary in a highly detailed survey, these areas may be designated as "slightly stony" and "moderately stony".

Very Stony — The areas have so many stones at or near the surface that operations which mix the surface layer either require heavy equipment or use of implements that can operate between the larger stones. Tillage with conventionally powered farm equipment is impractical. Wheeled tractors and vehicles with high clearance can operate on carefully chosen routes over and around the stones. Usually, these areas have Class 2 stoniness.

Extremely Stony — The areas have so many stones at or near the surface that wheeled power equipment, other than some special types, can operate only along selected routes. Tracked vehicles may be used in most places, although some routes have to be cleared. Usually, these areas have Class 3 stoniness.

Rubbly — The areas have so many stones at or near the surface that tracked vehicles cannot be used in most places. Usually, these areas have class 4 or 5 stoniness. If necessary in a highly detailed survey, they may be designated as "rubbly" and "very rubbly'.

If the soil has stones, boulders, and smaller fragments, the name includes the kind of rock fragment that are most limiting in the use or management of the soil. This is not necessarily the kind that is most abundant or the kind that is used to modify texture class of horizons in the profile description.



SHEET 1
SHEET 2

SOILS MAP LEGEND:

- TP — SOIL TEST PIT
- TB — SOIL TEST BORING
- WETLAND AREA (JURISDICTIONAL) –POORLY OR VERY POORLY DRAINED SOIL AREA (HYDRIC SOIL)
- BEDROCK OUTCROP (LOCATED BY C.P.S.)
- MET TOWER
- WOODS ROAD (EXISTING)
- NON–WETLAND DRAINAGE
- STREAM
- LIMITS OF SOIL STUDY CORRIDOR
- NRCS SOIL BOUNDARY LINE
- NRCS SOIL NAME
- CLASS L SOIL BOUNDARY LINE
- DIXFIELD — CLASS L SOIL NAME
- AREA RECOMMENDED FOR CROSS–DRAINAGE (OXYAQUIC CONDITION, VERY POORLY TO SOMEWHAT POORLY AND/OR NATURAL SWALED. SUBJECT TO SURFACE AND/OR PERCHED GROUNDWATER FLOW DURING SPRING MELT AND TIMES OF HEAVY PRECIPITATION

GRAPHIC SCALE
100 0 50 100 200
(IN FEET)
1 inch = 100 ft.

SLOPE DESIGNATION

A	0 - 3%
B	3 - 8%
C	8 - 20%
D	20%+

NOTE: SEE ACCOMPANYING SOIL NARRATIVE REPORT, DATED JANUARY, 2011

THE ACCOMPANYING SOILS SURVEY MAP (CLASS "L"), SOIL PROFILE DESCRIPTIONS AND SOIL NARRATIVE REPORT WERE DONE IN ACCORDANCE WITH THE STANDARDS ADOPTED BY THE MAINE ASSOCIATION OF PROFESSIONAL SOIL SCIENTISTS, FEBRUARY 1995, AS AMENDED AND PREPARED BY ALBERT FRICK ASSOCIATES, SOIL SCIENTIST, SEALING THE PLANS AND REPORT.

STATE OF MAINE — ALBERT FRICK — 66 — CERTIFIED SOIL SCIENTIST

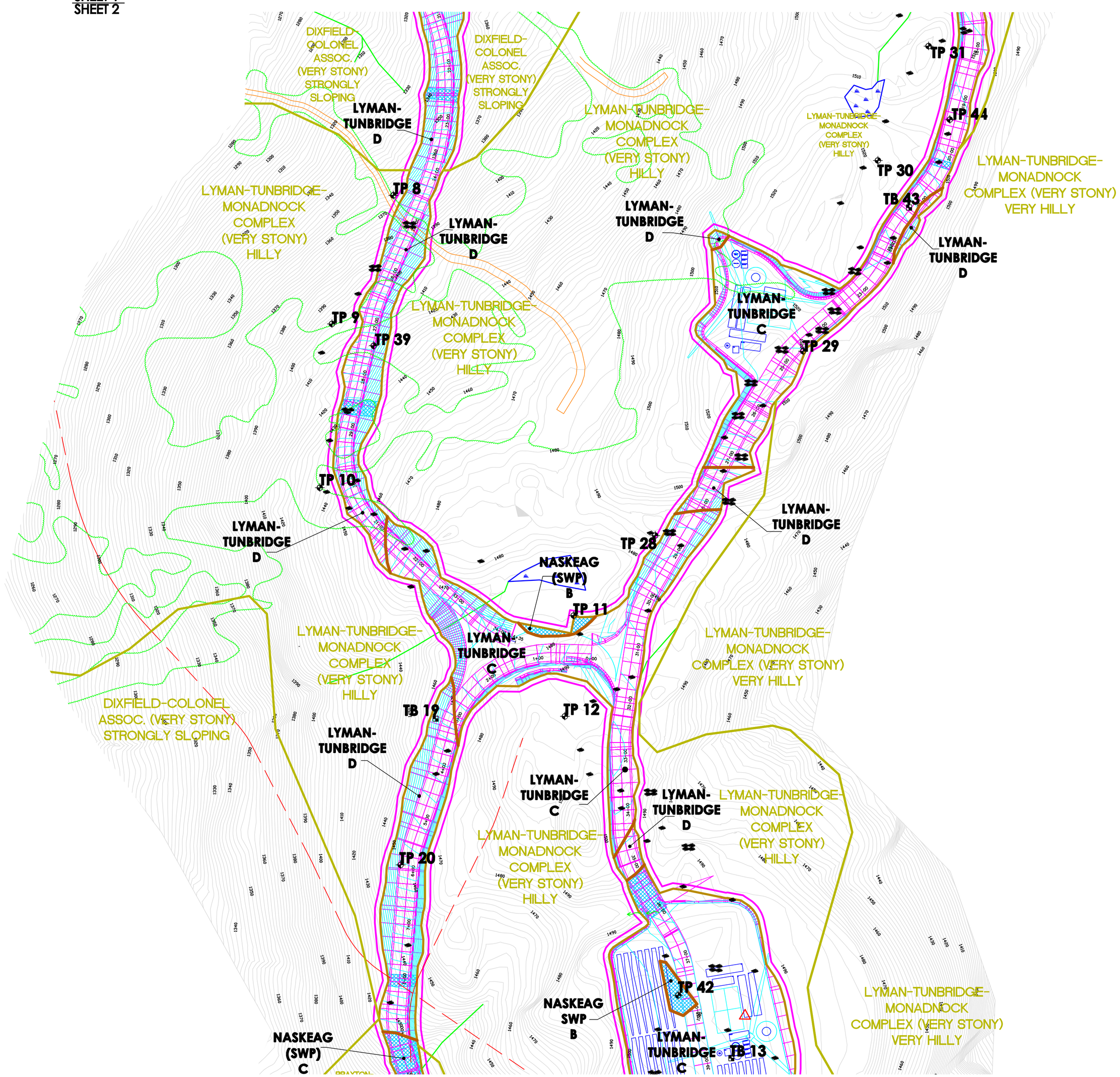
DATE:	REVISIONS:
12/29/10	UPDATED ALIGNMENT AND SOILS MAP

SOILS MAP
CANTON MOUNTAIN WIND PROJECT
PATRIOT RENEWABLES
CANTON, MAINE
SHEET 1 of 4

Albert Frick Associates, Inc.
Soil Scientists & Site Evaluators
Gorham, Maine 04038

Drawn By: B.J. | Checked By: A.F.
Date: 11/2/2010 | Scale: 1" = 100'

SHEET 1
SHEET 2



SHEET 2
SHEET 3

SOILS MAP LEGEND:

- TP — SOIL TEST PIT
- TB — SOIL TEST BORING
- WETLAND AREA (JURISDICTIONAL) –POORLY OR VERY POORLY DRAINED SOIL AREA (HYDRIC SOIL)
- BEDROCK OUTCROP (LOCATED BY G.P.S.)
- MET TOWER
- WOODS ROAD (EXISTING)
- NON-WETLAND DRAINAGE
- STREAM
- LIMITS OF SOIL STUDY CORRIDOR
- NRCS SOIL BOUNDARY LINE
- NRCS SOIL NAME
- CLASS L SOIL BOUNDARY LINE
- DIXFIELD — CLASS L SOIL NAME
- AREA RECOMMENDED FOR CROSS-DRAINAGE (OXYAQUIC CONDITION, VERY POORLY TO SOMEWHAT POORLY AND/OR NATURAL SWALED. SUBJECT TO SURFACE AND/OR PERCHED GROUNDWATER FLOW DURING SPRING MELT AND TIMES OF HEAVY PRECIPITATION

GRAPHIC SCALE
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DATE:	REVISIONS:
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SOILS MAP
CANTON MOUNTAIN WIND PROJECT
PATRIOT RENEWABLES
CANTON, MAINE
SHEET 2 of 4

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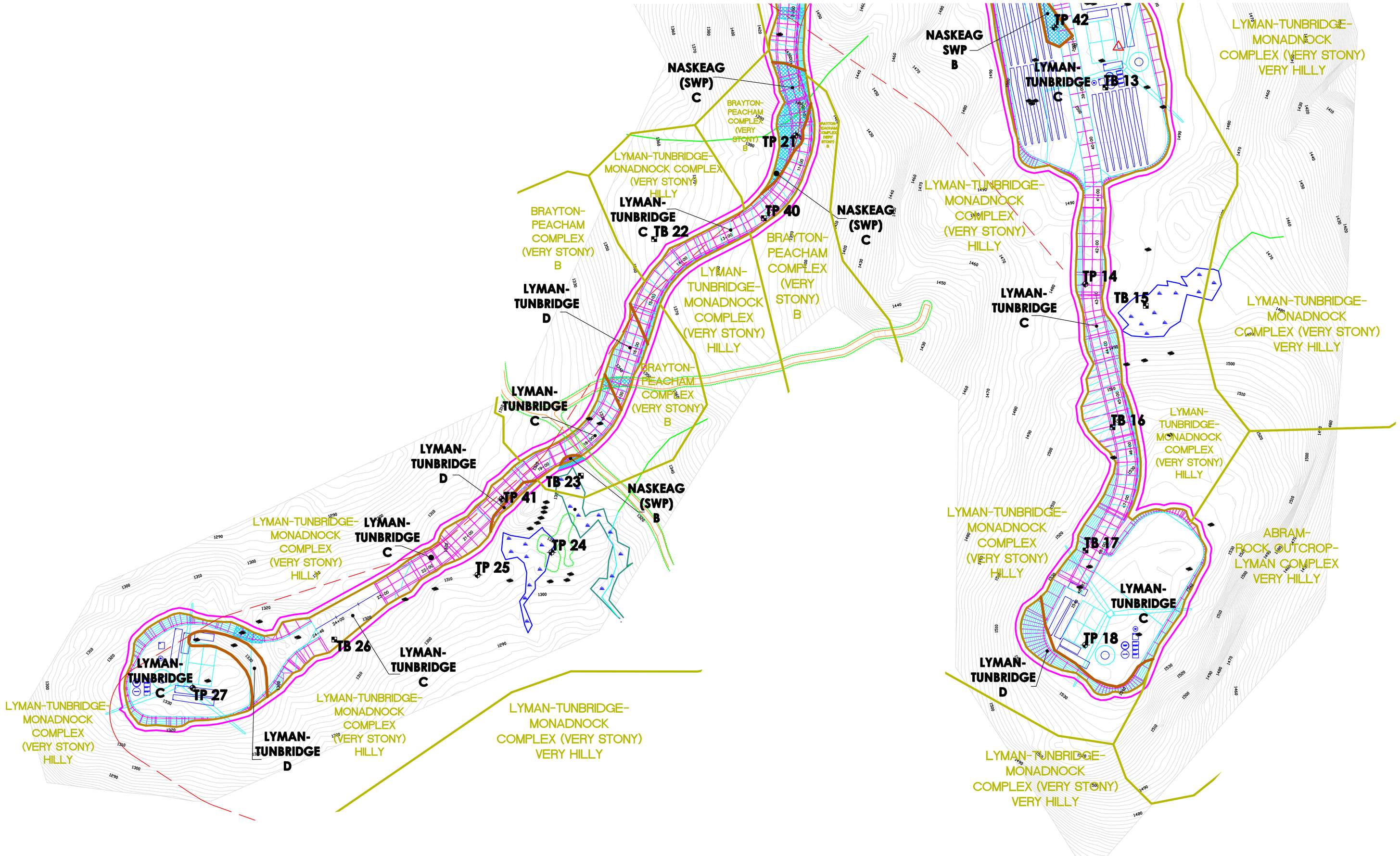
SHEET 2
SHEET 3



SHEET 3
END

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.

SOILS MAP LEGEND:

- TP — SOIL TEST PIT
- TB — SOIL TEST BORING
- WETLAND AREA (JURISDICTIONAL) –POORLY OR VERY POORLY DRAINED SOIL AREA (HYDRIC SOIL)
- BEDROCK OUTCROP (LOCATED BY G.P.S.)
- MET TOWER
- WOODS ROAD (EXISTING)
- NON-WETLAND DRAINAGE
- STREAM
- LIMITS OF SOIL STUDY CORRIDOR
- NRCS SOIL BOUNDARY LINE
- NRCS SOIL NAME
- CLASS L SOIL BOUNDARY LINE
- DIXFIELD — CLASS L SOIL NAME
- AREA RECOMMENDED FOR CROSS-DRAINAGE (OXYAQUIC CONDITION, VERY POORLY TO SOMEWHAT POORLY AND/OR NATURAL SWALED. SUBJECT TO SURFACE AND/OR PERCHED GROUNDWATER FLOW DURING SPRING MELT AND TIMES OF HEAVY PRECIPITATION

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DATE:	REVISIONS:
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SOILS MAP
CANTON MOUNTAIN WIND PROJECT
PATRIOT RENEWABLES
CANTON, MAINE
SHEET 3 of 4

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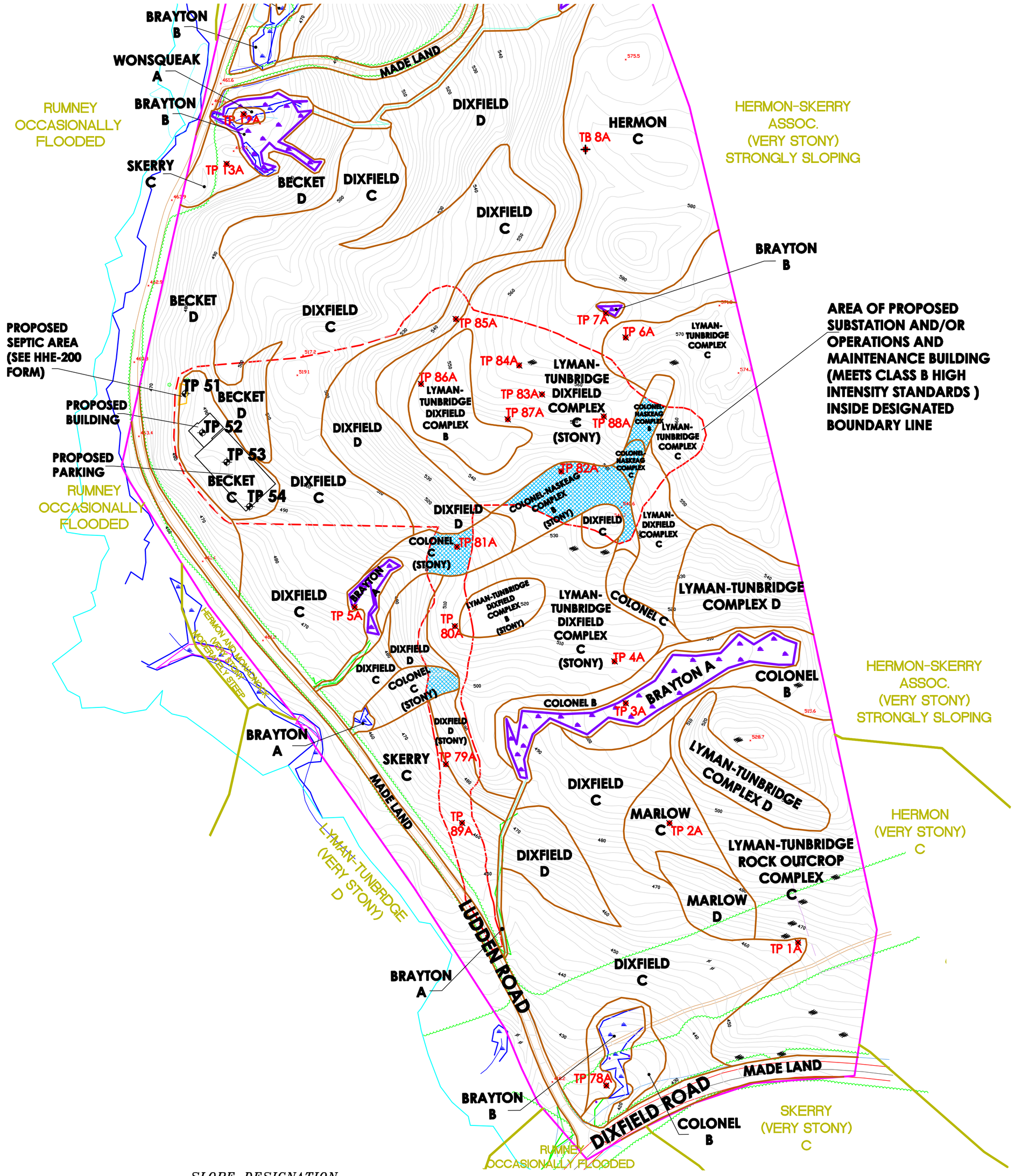

GRAPHIC SCALE

100 0 50 100 200

(IN FEET)
1 inch = 100 ft.

SOILS MAP LEGEND:

- SOIL TEST PIT (FOR TIMBERWINDS)
- SOIL TEST BORING (FOR TIMBERWINDS)
- PREVIOUS SOIL TEST PIT (FOR T-LINE AND SUBSTATION)
- PREVIOUS SOIL TEST BORING (FOR T-LINE AND SUBSTATION)
- WETLAND AREA (JURISDICTIONAL) -POORLY OR VERY POORLY DRAINED SOIL AREA (HYDRIC SOIL)
- BEDROCK OUTCROP (LOCATED BY G.P.S.)
- MET TOWER
- WOODS ROAD (EXISTING)
- NON-WETLAND DRAINAGE
- STREAM
- SOIL STUDY CORRIDOR
- HIGH INTENSITY SOIL STUDY AREA
- NRCS SOIL BOUNDARY LINE
- NRCS SOIL NAME
- CLASS L SOIL BOUNDARY LINE
- DIXFIELD CLASS L SOIL NAME
- AREA RECOMMENDED FOR CROSS-DRAINAGE (OXYAQUIC CONDITION, VERY POORLY TO SOMEWHAT POORLY AND/OR NATURAL SWALED. SUBJECT TO SURFACE AND/OR PERCHED GROUNDWATER FLOW DURING SPRING MELT AND TIMES OF HEAVY PRECIPITATION

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STATE OF MAINE ALBERT FRICK 66 CERTIFIED SOIL SCIENTIST

DATE:	REVISIONS:

SOILS MAP O&M BUILDING
CANTON MOUNTAIN WIND PROJECT
PATRIOT RENEWABLES CANTON, MAINE
SHEET 4 of 4

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