



April 6, 2007

Vanasse Hangen Brustlin, Inc.

Ref: 41240.06

Ms. Alexandria Carter
Verizon Wireless
99 East River Drive
East Hartford, Connecticut 06108

Re: NEPA Wetland Compliance and Permit Determination
Brass Mountain Facility
North Street (Route 63)
Goshen, Connecticut

Dear Ms. Carter:

Vanasse Hangen Brustlin, Inc. (VHB) has completed on-site investigations to determine if wetlands and/or watercourses are located on the above-referenced Site. The results of this investigation reveal that a forested wetland corridor and associated intermittent watercourse are located on the subject property approximately 150 feet east of Route 63; refer to attached Wetlands Delineation Report. The purpose of this letter is to determine compliance with NEPA listed category item 7, significant change in surface features (e.g., wetland fill, etc.) and federal wetland permit requirements with U.S. Army Corps of Engineers New England District (Corps).

VHB understands that Verizon Wireless proposes to construct a wireless telecommunications facility in the southeast portion of the ±233 acre subject property located on the east side of Route 63 in the central part of Goshen, Connecticut. The proposed tower facility will be located near the peak of a locally topographic highpoint know as Brass Mountain. Access to the facility will follow an existing woods road providing access to Route 63. Near the entrance to this woods road is a relatively narrow forested wetland corridor that parallels Route 63. The existing woods road crosses this wetland and associated intermittent watercourse with fill and a 12-inch culvert. The western half of this road crossing contains insufficient fill over original wetland soil such that it is still considered a wetland according to both State of Connecticut and federal classification requirements. Proposed improvements to this existing wetland/watercourse crossing in support of Verizon's development include placement of fill material to create a stable road base and replacement of the single 12-inch culvert with two 24-inch culverts. Improvements to the wetland crossing will result in permanent wetland fill of ±1,880 square feet (SF). It is important to point out that this permanent wetland fill will only take place in the existing disturbed and degraded wetland crossing. As a result, the proposed work will not adversely affect the function and value of the currently disturbed wetland area which is used for vehicle access.

Under NEPA compliance with respect to wetland/waterway impacts, in order to determine if a proposed project results in a "significant environmental effect", for which an Environmental Assessment (EA) must be prepared, a project is evaluated against the Corps' minimal impact threshold criteria to "Waters of the U.S." (e.g., wetlands, waterways, etc.). Generally, if a project is determined to satisfy the requirements of a Category 1 project (minimal impact and eligible without

54 Tuttle Place
Middletown, Connecticut 06457-1847
860.632.1500 • FAX 860.632.7879
email: info@vhb.com
www.vhb.com

screening by reviewing agencies) it is not considered to result in a significant environmental effect and a Finding of No Significant Impact (FONSI) could be issued for the NEPA listed category item 7. In order to support this conclusion, a careful review of the Department of the Army Programmatic General Permit (PGP) State of Connecticut (effective May 31, 2006, expiration date May 31, 2011) criteria for Category 1 is necessary.

For the proposed wetland/watercourse crossing improvements, the following criteria are required in order to be eligible under Category 1 of the PGP.

Unconfined in-stream work, including construction, installation or removal of cofferdam structures or placement of fill, is limited to the period July 1 through September 30 except in instances where a specific written exception has been issued by the CT DEP.

Less than 5,000 SF of Inland Waters, Waterway and/or Wetland Fill and Secondary Impacts. Fill impacts include all temporary and permanent fill and excavation discharges resulting from a single and complete project, see #5 of General Requirements. Secondary impacts include but are not limited include to impacts to inland waters, waterways or wetlands drained, dredged, flooded, cleared or degraded resulting from a single and complete project. (See 40 CFR 230.11 (g) and (h))

Driveway/Roadway Crossings. The following are required for driveway/roadway crossings constructed on brooks, streams, rivers and their tributaries. These provisions do not apply to crossings of drainage ditches or waters with no definable channel.

• **Driveway or Roadway crossings using a culvert provided:**

- *the tributary watershed to the culvert is \leq 1.0 sq. mile (640 acres),*
- *the culvert gradient (slope) is no steeper than the streambed gradient immediately upstream or downstream of the culvert,*
- *for a crossing constructed using a pipe culvert, the inverts are set such that \geq 25% of the pipe or 12", whichever is less, is set below the streambed elevation,*
- *the culvert is backfilled with natural substrate material matching upstream and downstream streambed substrate,*
- *the structure does not otherwise impede the passage of fish and other aquatic organisms, and*
- *the structure allows for continuous flow of the 50-year frequency storm flows.*

The proposed wetland/watercourse crossing design carefully considered these requirements (a.k.a., natural stream crossing design standards) in order to be compliant with a Category 1 determination. First, the wetland fill required to improve the existing wetland/watercourse crossing total 1,880 SF, less than the 5,000 SF trigger. Also, the tributary watershed to the existing culvert is approximately 35 acres, well below the 640 acre limit; refer to attached Watershed Boundary Map. In addition, the two new 24-inch culverts will have a gradient no steeper than the existing upstream or downstream gradients and will be set 12 inches below the streambed elevation and backfilled with natural streambed substrate. The two culverts proposed to replace the one existing 12 inch pipe will not impede fish or aquatic organism movement (actually increases the opening size by a magnitude of four) and allow for unimpeded flow of the 50-year design storm.



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As a result of careful adherence to the Corps' natural stream crossing design standards, the proposed wetland/watercourse impacts associated with Verizon's development are considered eligible under Category 1 of the PGP and therefore a Finding of No Significant Impact for NEPA listed category item 7 is provided.

However, in light of the Supreme Court decision, *Rapanos v. United States* (June 19, 2006), which grappled with the wetland jurisdiction issues under the Clean Water Act, the recent reissuance of the PGP and recent discussions with Corps' staff, VHB recommends that a permit determination request be submitted to the Corps in order to secure formal written confirmation that this project is authorized under Category 1 of the PGP.

If you have any questions concerning this matter do not hesitate to call me.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.



Dean Gustafson
Professional Soil Scientist

Enclosures

cc: Kenneth C. Baldwin, Robinson & Cole LLP





WETLANDS DELINEATION REPORT

Vanasse Hangen Brustlin, Inc.

Date: October 30, 2006 (revised February 2, 2007)
Project No.: 40655
Prepared For: Doug Drost
Engineering Technician
Natcomm, LLC
63-2 North Branford Road
Branford, CT 06405
Site Location: Brass Mountain
North Street (Route 63)
Goshen, Connecticut
Site Map: Wetland Sketch, 8/30/06
Inspection Date: August 30, 2006; January 23, 2007 for revised facility location
Field Conditions: Weather: partly sunny, mid 70's General Soil Moisture: moist
Snow Depth: 0 inches Frost Depth: 0 inches

Type of Wetlands Identified and Delineated:

Connecticut Inland Wetlands and Watercourses
Tidal Wetlands
U.S. Army Corps of Engineers

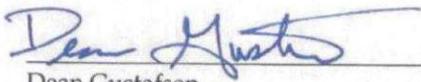
Local Regulated Upland Review Areas: Wetlands: 75 feet Watercourses: 75 feet

Field Numbering Sequence of Wetlands Boundary: WF 1-01 to WF 1-18; WF 1-19 to WF 1-24
[as depicted on attached wetland sketch map]

The classification systems of the National Cooperative Soil Survey, the U.S. Department of Agriculture, Natural Resources Conservation Service, County Soil Survey Identification Legend, Connecticut Department of Environmental Protection and United States Army Corps of Engineers New England District were used in this investigation.

All established wetlands boundary lines are subject to change until officially adopted by local, state, or federal regulatory agencies.

The wetlands delineation was conducted and reviewed by:


Dean Gustafson
Professional Soil Scientist

Enclosures

54 Tuttle Place
Middletown, Connecticut 06457-1847
860.632.1500 • FAX 860.632.7879
email: info@vhb.com
www.vhb.com

Attachments

-
- ▶ Wetland Delineation Field Form
 - ▶ Soil Map
 - ▶ Soil Report
 - ▶ Wetland Delineation Sketch Map

Wetland Delineation Field Form

Project Name:	VERIZON BRASS MNT.	Project Number:	40655
Inspection Date:	8/30/06	Inspector:	DEAN GUSTAFSON
Wetland I.D.:	WETLAND 1		

Field Conditions:	Weather: <i>ptly. sunny, mid 70's</i>	Snow Depth:	—
	General Soil Moisture: <i>moist</i>	Frost Depth:	—
Type of Wetland Delineation:	Connecticut <input checked="" type="checkbox"/>		
	ACOE <input checked="" type="checkbox"/>		
	Tidal <input type="checkbox"/>		
Field Numbering Sequence:	<i>WF 1 to 18 & 19 to 24</i>		

WETLAND HYDROLOGY:

Nontidal

Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>	Permanently Flooded <input type="checkbox"/>
Semipermanently Flooded <input type="checkbox"/>	Seasonally Flooded <input checked="" type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>
Permanently Saturated <input type="checkbox"/>	Seasonally Saturated - seepage <input type="checkbox"/>	Seasonally Saturated - perched <input type="checkbox"/>
Comments:		

Tidal

Subtidal <input type="checkbox"/>	Regularly Flooded <input type="checkbox"/>	Irregularly Flooded <input type="checkbox"/>
Seasonally Flooded <input type="checkbox"/>	Temporarily Flooded <input type="checkbox"/>	
Comments:		

WETLAND TYPE:

System

Estuarine <input type="checkbox"/>	Riverine <input type="checkbox"/>	Palustrine <input checked="" type="checkbox"/>
Lacustrine <input type="checkbox"/>	Marine <input type="checkbox"/>	
Comments:		

Class

Emergent Marsh <input type="checkbox"/>	Scrub-shrub <input type="checkbox"/>	Forested <input checked="" type="checkbox"/>
Open Water <input type="checkbox"/>	Disturbed <input type="checkbox"/>	
Comments:		

WATERCOURSE TYPE:

Upper Perennial <input type="checkbox"/>	Lower Perennial <input type="checkbox"/>	Intermittent <input checked="" type="checkbox"/>
Tidal <input type="checkbox"/>		
Comments:		

SPECIAL AQUATIC HABITAT:

Vernal Pool <input type="checkbox"/>	Other <input type="checkbox"/>	
Comments:		

DOMINANT PLANTS:

<i>Eastern hemlock</i>	
<i>red maple</i>	
<i>winterberry</i>	

SOIL SURVEY OF STATE OF CONNECTICUT

Proposed Verizon Wireless Facility, Brass Mountain, Route 63, Goshen, CT



SOIL SURVEY OF STATE OF CONNECTICUT

Proposed Verizon Wireless Facility, Brass Mountain, Route 63, Goshen, CT

MAP LEGEND

-  Soil Map Units
-  Cities
-  Detailed Counties
-  Detailed States
-  Interstate Highways
-  Roads
-  Rails
-  Water
-  Hydrography
-  Oceans
-  Escarpment, bedrock
-  Escarpment, non-bedrock
-  Gully
-  Levee
-  Slope
-  Blowout
-  Borrow Pit
-  Clay Spot
-  Depression, closed
-  Eroded Spot
-  Gravel Pit
-  Gravelly Spot
-  Gully
-  Lava Flow
-  Landfill
-  Marsh or Swamp
-  Miscellaneous Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Slide or Slip
-  Sinkhole
-  Sodic Spot
-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Perennial Water
-  Wet Spot

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 18

Soil Survey Area: State of Connecticut
 Spatial Version of Data: 3
 Soil Map Compilation Scale: 1:12000

Map comprised of aerial images photographed on these dates:
 4/12/1991

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend Summary

State of Connecticut

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, extremely stony	0.2	0.4
62C	Canton and Charlton soils, 3 to 15 percent slopes, extremely stony	7.5	14.3
415C	Westminster-Millsite-Rock outcrop complex, 3 to 15 percent slopes	6.1	11.7
415E	Westminster-Millsite-Rock outcrop complex, 15 to 45 percent slopes	3.7	7.1
417C	Bice fine sandy loam, 8 to 15 percent slopes, very stony	10.7	20.3
417D	Bice fine sandy loam, 15 to 25 percent slopes, very stony	23.1	43.9
425C	Shelburne fine sandy loam, 8 to 15 percent slopes, very stony	0.0	0.1
427C	Ashfield fine sandy loam, 8 to 15 percent slopes, very stony	0.3	0.5
443	Brayton-Loonmeadow complex, extremely stony	1.0	1.9

Map Unit Description (Brief)

State of Connecticut

[Only those map units that have entries for the selected non-technical description categories are included in this report]

Map Unit: 3 - Ridgebury, Leicester, and Whitman soils, extremely stony

Description Category: SOI

Ridgebury, Leicester And Whitman Soils, Extremely Stony

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 50 inches (940 to 1270 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 40 percent Ridgebury soils, 35 percent Leicester soils, 15 percent Whitman soils, 10 percent minor components.

Ridgebury soils

This component occurs on upland drainageway and depression landforms. The parent material consists of lodgement till derived from granite, schist, and gneiss. The slope ranges from 0 to 5 percent and the runoff class is very low. The depth to a restrictive feature is 20 to 30 inches to densic material. The drainage class is poorly drained. The slowest permeability within 60 inches is about 0.00 in/hr (very slow), with about 2.5 inches (low) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 3 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 5 inches; fine sandy loam
5 to 14 inches; fine sandy loam
14 to 21 inches; fine sandy loam
21 to 60 inches; sandy loam

Leicester soils

This component occurs on upland drainageway and depression landforms. The parent material consists of melt-out till derived from granite, schist, and gneiss. The slope ranges from 0 to 5 percent and the runoff class is very low. The depth to a restrictive feature is greater than 60 inches. The drainage class is poorly drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 7.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 9 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; moderately decomposed plant material
1 to 7 inches; fine sandy loam
7 to 10 inches; fine sandy loam
10 to 18 inches; fine sandy loam
18 to 24 inches; fine sandy loam
24 to 43 inches; gravelly fine sandy loam
43 to 65 inches; gravelly fine sandy loam

Whitman soils

This component occurs on upland drainageway and depression landforms. The parent material consists of lodgement till derived from gneiss, schist, and granite. The slope ranges from 0 to 2 percent and the runoff class is very low. The depth to a restrictive feature is 12 to 20 inches to densic material. The drainage class is very poorly drained. The slowest permeability within 60 inches is about 0.00 in/hr (very slow), with about 1.9 inches (very low) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is occasional. The minimum depth to a seasonal water table, when present, is about 0 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 9 inches; fine sandy loam
9 to 16 inches; fine sandy loam
16 to 22 inches; fine sandy loam
22 to 60 inches; fine sandy loam

Map Unit Description (Brief)

State of Connecticut

Map Unit: 62C - Canton and Charlton soils, 3 to 15 percent slopes, extremely stony

Description Category: SOI

Canton And Charlton Soils, 3 To 15 Percent Slopes, Extremely Stony

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 37 to 49 inches (940 to 1244 millimeters) and the average annual air temperature is 45 to 52 degrees F. (7 to 11 degrees C.) This map unit is 45 percent Canton soils, 35 percent Charlton soils, 20 percent minor components.

Canton soils

This component occurs on upland hill landforms. The parent material consists of melt-out till derived from schist, granite, and gneiss. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 1.98 in/hr (moderately rapid), with about 5.6 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; moderately decomposed plant material
1 to 3 inches; gravelly fine sandy loam
3 to 15 inches; gravelly loam
15 to 24 inches; gravelly loam
24 to 30 inches; gravelly loam
30 to 60 inches; very gravelly loamy sand

Charlton soils

This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, schist, and gneiss. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 6.4 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 4 inches; fine sandy loam
4 to 7 inches; fine sandy loam
7 to 19 inches; fine sandy loam
19 to 27 inches; gravelly fine sandy loam
27 to 65 inches; gravelly fine sandy loam

Map Unit Description (Brief)

State of Connecticut

Map Unit: 415C - Westminster-Millsite-Rock outcrop complex, 3 to 15 percent slopes

Description Category: SOI

Westminster-Millsite-Rock Outcrop Complex, 3 To 15 Percent Slopes

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 35 to 55 inches (889 to 1397 millimeters) and the average annual air temperature is 39 to 45 degrees F. (4 to 7 degrees C.) This map unit is 40 percent Westminster soils, 40 percent Millsite soils, 15 percent Rock Outcrop, 5 percent minor components.

Westminster soils

This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from schist, granite, and gneiss. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is 10 to 20 inches to bedrock (lithic). The drainage class is somewhat excessively drained. The slowest permeability within 60 inches is about 1.98 in/hr (moderately rapid), with about 2.2 inches (very low) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.0 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 2 inches; moderately decomposed plant material
2 to 5 inches; fine sandy loam
5 to 12 inches; fine sandy loam
12 to 16 inches; fine sandy loam
16 to 27 inches; bedrock

Millsite soils

This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from granite, gneiss, and schist. The slope ranges from 3 to 15 percent and the runoff class is low. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 3.8 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is none. The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; moderately decomposed plant material
1 to 5 inches; fine sandy loam
5 to 13 inches; stony fine sandy loam
13 to 24 inches; fine sandy loam
24 to 31 inches; sandy loam
31 to 39 inches; bedrock

Rock Outcrop

This component occurs on bedrock controlled landforms. The slope ranges from 3 to 15 percent and the runoff class is very high. The Nonirrigated Land Capability Class is 8

Map Unit Description (Brief)

State of Connecticut

Map Unit: 415E - Westminster-Millsite-Rock outcrop complex, 15 to 45 percent slopes

Description Category: SOI

Westminster-Millsite-Rock Outcrop Complex, 15 To 45 Percent Slopes

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 35 to 55 inches (889 to 1397 millimeters) and the average annual air temperature is 39 to 45 degrees F. (4 to 7 degrees C.) This map unit is 40 percent Westminster soils, 40 percent Millsite soils, 15 percent Rock Outcrop, 5 percent minor components.

Westminster soils

This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from schist, granite, and gneiss. The slope ranges from 15 to 45 percent and the runoff class is medium. The depth to a restrictive feature is 10 to 20 inches to bedrock (lithic). The drainage class is somewhat excessively drained. The slowest permeability within 60 inches is about 1.98 in/hr (moderately rapid), with about 2.2 inches (very low) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.0 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 2 inches; moderately decomposed plant material
2 to 5 inches; fine sandy loam
5 to 12 inches; fine sandy loam
12 to 16 inches; fine sandy loam
16 to 27 inches; bedrock

Millsite soils

This component occurs on upland hill and ridge landforms. The parent material consists of melt-out till derived from granite, gneiss, and schist. The slope ranges from 15 to 45 percent and the runoff class is medium. The depth to a restrictive feature is 20 to 40 inches to bedrock (lithic). The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 3.8 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is none. The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 1 inches; moderately decomposed plant material
1 to 5 inches; fine sandy loam
5 to 13 inches; stony fine sandy loam
13 to 24 inches; fine sandy loam
24 to 31 inches; sandy loam
31 to 39 inches; bedrock

Rock Outcrop

This component occurs on bedrock controlled landforms. The slope ranges from 15 to 45 percent and the runoff class is very high. The Nonirrigated Land Capability Class is 8

Map Unit Description (Brief)

State of Connecticut

Map Unit: 417C - Bice fine sandy loam, 8 to 15 percent slopes, very stony

Description Category: SOI

Bice Fine Sandy Loam, 8 To 15 Percent Slopes, Very Stony

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 35 to 55 inches (889 to 1397 millimeters) and the average annual air temperature is 39 to 45 degrees F. (4 to 7 degrees C.) This map unit is 85 percent Bice soils. 15 percent minor components.

Bice soils

This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, gneiss, and schist. The slope ranges from 8 to 15 percent and the runoff class is low. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 7.0 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 7 inches; fine sandy loam
7 to 16 inches; fine sandy loam
16 to 24 inches; gravelly fine sandy loam
24 to 60 inches; gravelly sandy loam

Map Unit: 417D - Bice fine sandy loam, 15 to 25 percent slopes, very stony

Description Category: SOI

Bice Fine Sandy Loam, 15 To 25 Percent Slopes, Very Stony

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 35 to 55 inches (889 to 1397 millimeters) and the average annual air temperature is 39 to 45 degrees F. (4 to 7 degrees C.) This map unit is 85 percent Bice soils. 15 percent minor components.

Bice soils

This component occurs on upland hill landforms. The parent material consists of melt-out till derived from granite, gneiss, and schist. The slope ranges from 15 to 25 percent and the runoff class is medium. The depth to a restrictive feature is greater than 60 inches. The drainage class is well drained. The slowest permeability within 60 inches is about 0.57 in/hr (moderate), with about 7.0 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is greater than 6 feet. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 7 inches; fine sandy loam
7 to 16 inches; fine sandy loam
16 to 24 inches; gravelly fine sandy loam
24 to 60 inches; gravelly sandy loam

Map Unit Description (Brief)

State of Connecticut

Map Unit: 425C - Shelburne fine sandy loam, 8 to 15 percent slopes, very stony

Description Category: SOI

Shelburne Fine Sandy Loam, 8 To 15 Percent Slopes, Very Stony

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 38 to 48 inches (965 to 1219 millimeters) and the average annual air temperature is 39 to 45 degrees F. (4 to 7 degrees C.) This map unit is 85 percent Shelburne soils. 15 percent minor components.

Shelburne soils

This component occurs on upland hill and drumlin landforms. The parent material consists of lodgement till derived from granite, gneiss, and schist. The slope ranges from 8 to 15 percent and the runoff class is low. The depth to a restrictive feature is 20 to 30 inches to densic material. The drainage class is well drained. The slowest permeability within 60 inches is about 0.00 in/hr (very slow), with about 3.5 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 24 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is none. The Nonirrigated Land Capability Class is 6s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 2 inches; fine sandy loam
2 to 7 inches; fine sandy loam
7 to 21 inches; gravelly fine sandy loam
21 to 27 inches; bouldery fine sandy loam
27 to 32 inches; gravelly fine sandy loam
32 to 43 inches; fine sandy loam
43 to 55 inches; fine sandy loam
55 to 80 inches; fine sandy loam

Map Unit: 427C - Ashfield fine sandy loam, 8 to 15 percent slopes, very stony

Description Category: SOI

Ashfield Fine Sandy Loam, 8 To 15 Percent Slopes, Very Stony

This map unit is in the New England and Eastern New York Upland, Southern Part Major Land Resource Area. The mean annual precipitation is 36 to 46 inches (914 to 1168 millimeters) and the average annual air temperature is 39 to 47 degrees F. (4 to 7 degrees C.) This map unit is 85 percent Ashfield soils. 15 percent minor components.

Ashfield soils

This component occurs on upland hill and drumlin landforms. The parent material consists of lodgement till derived from granite, gneiss, and schist. The slope ranges from 8 to 15 percent and the runoff class is low. The depth to a restrictive feature is 20 to 33 inches to densic material. The drainage class is moderately well drained. The slowest permeability within 60 inches is about 0.00 in/hr (very slow), with about 3.4 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 18 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 6s

Typical Profile:

0 to 1 inches; slightly decomposed plant material
1 to 2 inches; moderately decomposed plant material
2 to 3 inches; highly decomposed plant material
3 to 7 inches; fine sandy loam
7 to 12 inches; fine sandy loam
12 to 18 inches; fine sandy loam
18 to 24 inches; fine sandy loam
24 to 29 inches; fine sandy loam
29 to 44 inches; fine sandy loam
44 to 57 inches; sandy loam
57 to 80 inches; fine sandy loam

Map Unit Description (Brief)

State of Connecticut

Map Unit: 443 - Brayton-Loonmeadow complex, extremely stony

Description Category: SOI

Brayton-Loonmeadow Complex, Extremely Stony

This map unit is in the New England and Eastern New York Upland, Northern Part Major Land Resource Area. The mean annual precipitation is 36 to 55 inches (914 to 1400 millimeters) and the average annual air temperature is 39 to 45 degrees F. (4 to 7 degrees C.) This map unit is 50 percent Brayton soils, 35 percent Loonmeadow soils, 15 percent minor components.

Brayton soils

This component occurs on upland depression and drainageway landforms. The parent material consists of loamy lodgement till derived from phyllite and schist. The slope ranges from 0 to 8 percent and the runoff class is negligible. The depth to a restrictive feature is 20 to 27 inches to densic material. The drainage class is poorly drained. The slowest permeability within 60 inches is about 0.00 in/hr (very slow), with about 3.4 inches (moderate) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is none. The minimum depth to a seasonal water table, when present, is about 6 inches. The maximum calcium carbonate within 40 inches is none. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

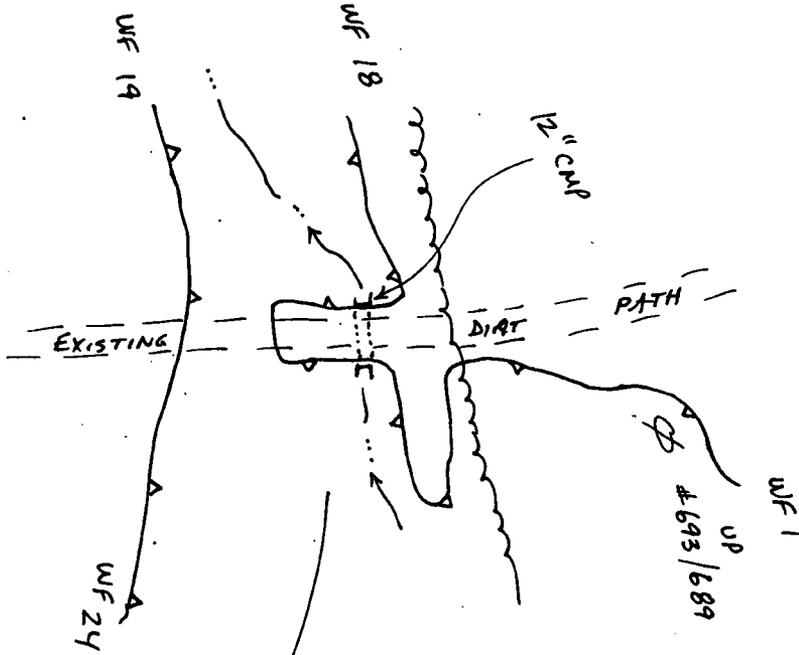
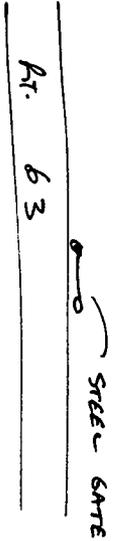
0 to 2 inches; moderately decomposed plant material
2 to 9 inches; loam
9 to 17 inches; gravelly sandy loam
17 to 22 inches; gravelly sandy loam
22 to 27 inches; sandy loam
27 to 42 inches; gravelly sandy loam
42 to 65 inches; gravelly sandy loam

Loonmeadow soils

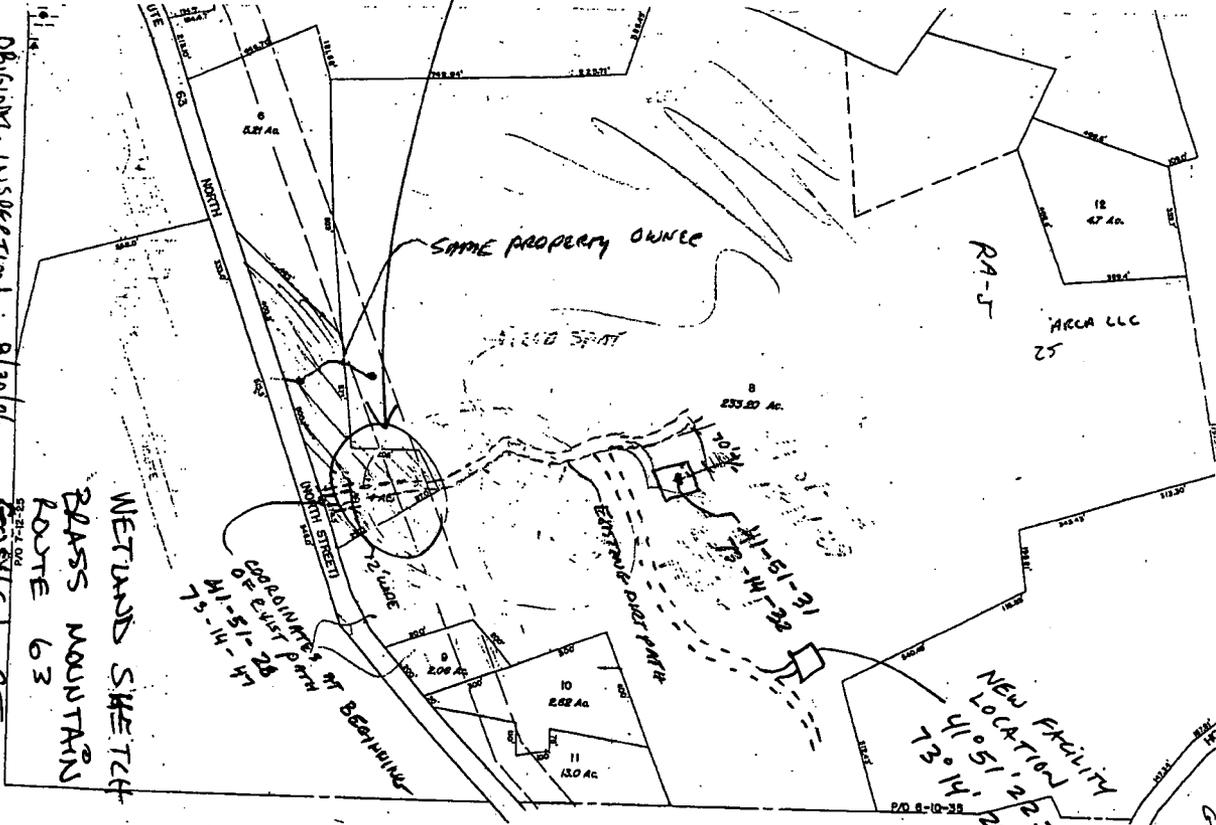
This component occurs on upland depression and drainageway landforms. The parent material consists of lodgement till derived from dolomite, phyllite, granite, gneiss and schist. The slope ranges from 0 to 3 percent and the runoff class is negligible. The depth to a restrictive feature is greater than 60 inches. The drainage class is very poorly drained. The slowest permeability within 60 inches is about 0.06 in/hr (slow), with about 7.3 inches (high) available water capacity. The weighted average shrink-swell potential in 10 to 60 inches is about 1.5 LEP (low). The flooding frequency for this component is none. The ponding hazard is frequent. The minimum depth to a seasonal water table, when present, is about 9 inches. The maximum calcium carbonate within 40 inches is 5 percent. The maximum amount of salinity in any layer is about 0 mmhos/cm (nonsaline). The Nonirrigated Land Capability Class is 7s

Typical Profile:

0 to 2 inches; slightly decomposed plant material
2 to 9 inches; mucky fine sandy loam
9 to 18 inches; sandy loam
18 to 35 inches; gravelly sandy loam
35 to 80 inches; gravelly sandy loam



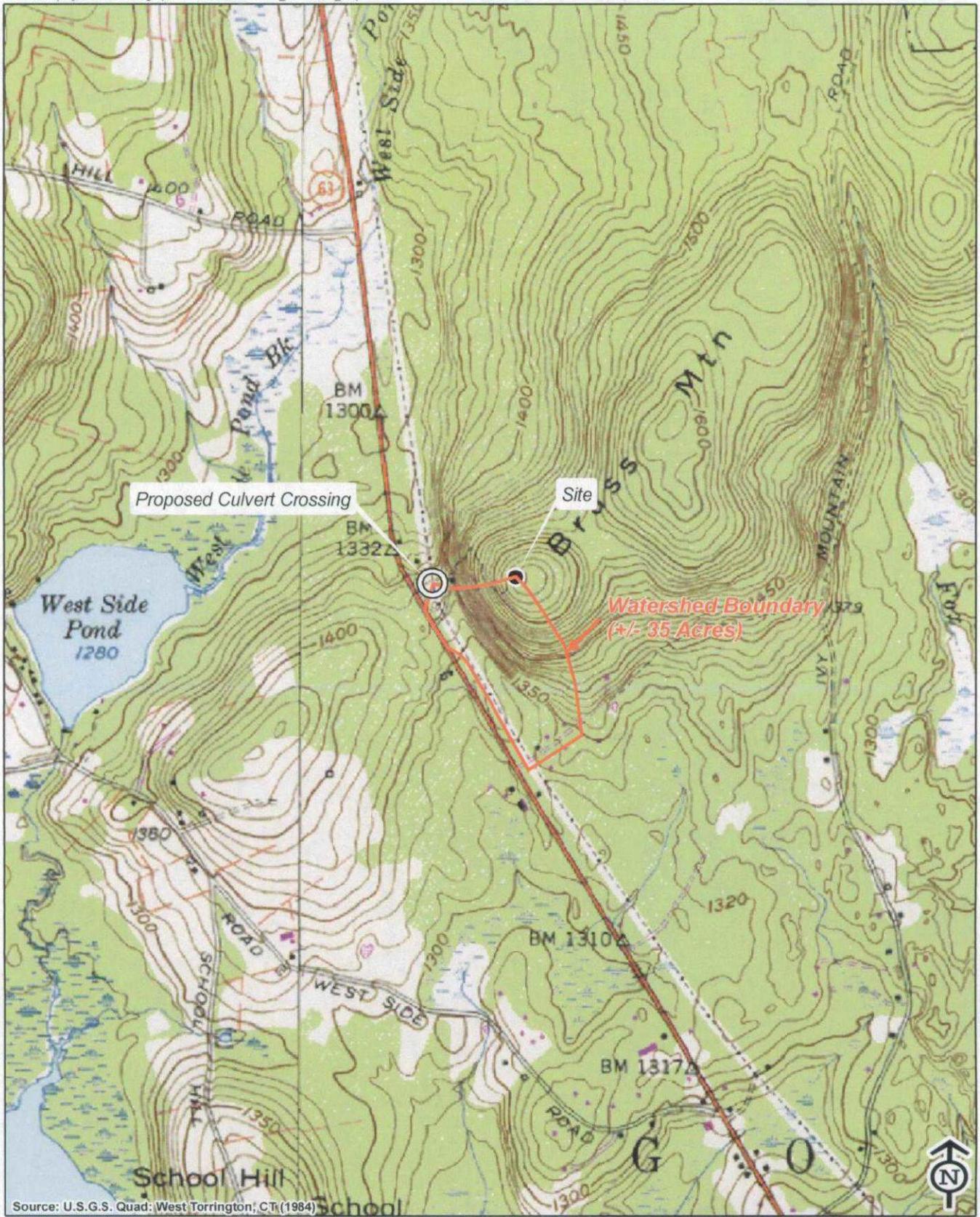
Original inspection: 8/30/06
New Facility Inspection: 11/21/07



DATE OF REVISIONS:

LEGEND

PARCEL NUMBERS 2



Source: U.S.G.S. Quad: West Torrington, CT (1984)



Vanasse Hangen Brustlin, Inc.

Legend

- Site
- Watershed Boundary for Proposed Intermittent Stream Crossing (+/- 35 Acres)

**Watershed Boundary Map
Proposed Telecommunications Facility
Brass Mountain - Route 63
Goshen, Connecticut**

April 5, 2007