

**STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL**

IN RE:

APPLICATION OF OPTASITE TOWERS LLC
AND OMNIPOINT COMMUNICATIONS, INC.
FOR A CERTIFICATE OF ENVIRONMENTAL
COMPATIBILITY AND PUBLIC NEED FOR
THE CONSTRUCTION, MAINTENANCE AND
OPERATION OF A TELECOMMUNICATIONS
FACILITY AT 58 MONTANO ROAD/
618 NEIPSIC ROAD IN THE TOWN OF
GLASTONBURY, CONNECTICUT

DOCKET NO. 359

Date: JUNE 12, 2008

PRE-FILED TESTIMONY OF DEAN GUSTAFSON

Q1. Mr. Gustafson, please state your name and position.

A. Dean Gustafson and I am a Professional Soil Scientist and Senior Wetland Scientist for Vanasse Hangen Brustlin, Inc. ("VHB"). VHB is located at 54 Tuttle Place in Middletown, Connecticut.

Q2. Please state your qualifications.

A. I have a Bachelor of Science degree from the University of Massachusetts with a concentration in Soil Science. My background includes over 20 years of professional experience of wetland consulting. I have been the lead soil/wetland scientist on more than 1000 development projects in Connecticut. In addition, I have assisted in the permitting of more than 100 wireless telecommunication facilities in Connecticut during the past ten years. My responsibilities include: coordination and oversight of site screenings and environmental assessments to fulfill NEPA requirements, environmental site assessments, wetland delineations

and assessments, wetland mitigation design, vegetative/biological surveys and regulatory permitting support. A copy of my resume is enclosed.

Q3. Please describe your involvement in this matter.

A. VHB was responsible for conducting the NEPA screen for the property locate at 497A Wickham Road (Site B) (found in the Application at Exhibit Q) and reviewing the wetlands report and culvert design for the wetlands crossing proposed at Site B (found in the Application at Exhibit L). In addition, VHB has reviewed and adopted the NEPA screen prepared by Kleinfelder East, Inc. for the property located at 58 Montano Road (Site A) (found in the Application at Exhibit P).

Q4. Please describe the existing wetland on the Site B Property.

A. The wetland on the Site B Property consists of an unnamed, shallow intermittent watercourse and associated bordering wetlands which transect the Site B Property from north to south. The unnamed stream on the Site B Property receives overland flow from the surrounding uplands as well as runoff from the adjacent Route 2. The wetlands and watercourse were identified and delineated by Kleinfelder as documented in their June 25, 2007 report (Exhibit L). The wetland delineation was field reviewed on June 11, 2008 and found to be substantially correct (refer to enclosed Wetland Determination Review memorandum dated June 11, 2008).

Q5. Please describe the proposed wetland crossing on the Site B Property.

A. The access driveway leading to the Site of the proposed telecommunications facility will cross the intermittent watercourse and associated riparian corridor for a distance of approximately 52 linear feet. Optasite proposes to install a 6-foot by 6-foot box culvert for the stream crossing. The proposed box culvert will have a gradient no steeper than the existing upstream or downstream gradient and will be set 12 inches below the streambed elevation and backfilled with natural streambed substrate. In total, the proposed crossing will result in permanent wetland fill of 2,852± square feet. The proposed stream crossing design carefully considered the *Natural Stream Crossing Design Standards* stipulated by the U.S. Army Corps of Engineers New England Division under their wetland permit requirements to ensure that the culvert design would not impede fish or aquatic organism movement through this seasonal stream corridor.

Q6. Is there any other area on the Site B Property where Optasite could access the proposed site of the telecommunications facility and not disturb any wetlands or have less wetland impact?

A. No. The unnamed intermittent watercourse on the Site B Property runs the entire length of the Site B Property from north to south. Therefore, there is no way to access the proposed site without crossing this watercourse. The proposed crossing will have the least amount of impact to the watercourse as possible as the location selected is the narrowest point in the wetland/stream corridor. In addition, because of the design of the box culvert, the disturbance to

the intermittent stream and bordering wetlands is minimized and will not adversely affect fish or aquatic organism movement through this stream corridor.

Q7. Please describe the results of the NEPA screen adopted/conducted by VHB at Site A and Site B.

A. At the request of Optasite, VHB conducted a NEPA screen at Site B to determine if the proposed Facility falls under any listed categories of Section 1.1307 under NEPA, the results of which are found at Exhibit Q of the Certificate Application. Based upon VHB's review, the proposed Facility does not fall under any listed categories of Section 1.1307. In addition, VHB corresponded with numerous agencies including the State of Connecticut Department of Environmental Protection ("DEP"), the United States Department of the Interior, Fish and Wildlife Service, the Connecticut Commission on Culture & Tourism, Historic Preservation & Museum Division, among others. Based upon the NEPA screen and agency correspondence, Site B is categorically excluded from any requirement for further environmental review by the FCC in accordance with NEPA and no permit is required by that agency prior to construction of the proposed Facility.

In addition, VHB has reviewed and adopted the NEPA screen performed by Kleinfelder East, Inc. conducted at Site A to determine if the proposed Facility falls under any listed categories of Section 1.1307 under NEPA, the results of which are found at Exhibit P of the Certificate Application. Based upon VHB's review, the proposed Facility at Site A does not fall under any listed categories of Section 1.1307. Site A was field reviewed on June 11, 2008 to confirm an earlier

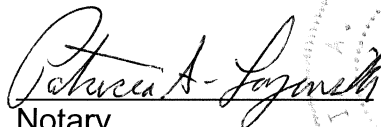
wetland and watercourse investigation performed by Soil Science and Environmental Services, Inc. on March 8, 2006. VHB confirmed that no wetlands or watercourses are located on Site A or in close proximity (refer to enclosed Wetland Determination Review memorandum dated June 11, 2008). Based upon the NEPA screen and agency correspondence, Site A is also categorically excluded from any requirement for further environmental review by the FCC in accordance with NEPA and no permit is required by that agency prior to construction of the proposed Facility.



Date *June 11, 2008*

Dean Gustafson

Subscribed and sworn before me this 11 day of June, 2008.

By: 
Notary
my commission
expires August 31, 2010



Dean E. Gustafson

Professional Soil Scientist
Senior Wetland Scientist

General Background

Mr. Gustafson is a Professional Soil Scientist with twenty years of experience in the environmental field. As the leader of VHB's Middletown, Conn., office's Environmental Group, he manages environmental permitting, NEPA/CEPA documentation, wetlands (delineation, evaluation, mitigation design, monitoring, stream restoration, and local, state and federal permitting), water-quality investigations, coastal-zone-management studies, and natural-resource and ecological evaluations. Mr. Gustafson has particular expertise in wetland identification, soil mapping, soil classification, vegetative and hydrology surveys, wetland impact assessment, wetland mitigation design and oversight. In addition, he has extensive experience in local, state, and federal wetland permitting. Furthermore, he is highly qualified in delineating wetlands according to the Federal Interagency Method's three-parameter approach and has extensive wetland mapping experience in Connecticut, Massachusetts, New York and New Jersey. Mr. Gustafson has been responsible for the mapping of all wetlands during several town-wide wetland identification and evaluation projects. In addition, he has experience in wetland quality assessments using various evaluation models including the federal Descriptive Approach, Connecticut Wetland Evaluation Method (Bulletin No. 9), and the Golet Wetland Wildlife Evaluation Method. Mr. Gustafson also has experience applying the Massachusetts Wildlife Habitat Protection Guidance for Inland Wetlands (March 2006). Mr. Gustafson has been involved in over 1,000 wetland projects in more than 170 towns throughout New England and the Northeast.

Mr. Gustafson is a Professional Soil Scientist and Senior Wetland Scientist with Vanasse Hangen Brustlin (VHB), and has 20 years of experience with a wide variety of wetland environmental issues. His areas of expertise include wetland delineation and evaluation, permit preparation, local, state and federal regulatory coordination, and wetland mitigation.

Key Wetland Projects

Telecommunications Carrier Wetland Program

Project Manager for major telecommunications carrier's wetland program. Responsible for wetland delineation, assessment, mitigation, alternatives analysis, design review for permit feasibility, and successful permitting of over 50 wireless telecommunications facilities with local wetland/conservation commissions in the Connecticut, Massachusetts, and Rhode Island market areas.

Certificate for Environmental Compatibility and Public Need, Utility Client, Connecticut

Task Manager in support of Application to the Connecticut Siting Council (CSC) for the permitting of a new 345/115 kV substation in eastern Connecticut. This project required extensive coordination of numerous team members, including client's in-house discipline managers and engineers, consultants, legal counsel, VHB staff, and subcontractors. Responsible for natural resources inventories of existing flora and fauna, habitat evaluations, wetland delineations and local wetland permit application.

Ferry Street Bridge, New Haven

Responsible for environmental permitting of this bridge with local, state and federal regulatory agencies including City of New Haven, CTDEP Office of Long Island Sound, U.S. Coast Guard, and U.S. Army Corps of Engineers.

National Retailer, Rocky Hill

Responsible for wetland permitting of a multi-tenant retail development resulting in significant wetland impacts resulting in the creation of a wetland mitigation area exceeding 1 acre in size. Wetland permits were secured from the Rocky Hill Wetland Agency, CTDEP and U.S. Army Corps of Engineers for wetland impacts and wetland mitigation area.

Luxury Residential Development

Project manager for an award-winning luxury residential community developer. Provided project management and technical direction for wetland compliance of projects undertaken in Connecticut including wetland determination, evaluation, mitigation design and local, state and Army Corps of Engineers permitting.

Retail Wetland Program

Project manager for the Connecticut office for large retail Client Fee-for-Service and Turnkey Developer Programs. Provide project management and technical direction for wetland compliance of projects undertaken in Connecticut including wetland determination, evaluation, mitigation design and local, state and Army Corps of Engineers permitting.

Luxury Automobile Dealership, Hartford, CT

Provided critical wetland support services in the successful approval of a new luxury automobile dealership. Services included both CT and federal wetland delineation, wetland evaluation and alternatives assessment for wetland impacts, City of Hartford and Army Corps of Engineers wetland permit preparation, and coordination with City planning staff.

Wetlands Survey and Permitting, ConnDOT Maintenance Facility.

Performed both a state and federal wetland survey and delineation in conjunction with the submission and successful obtainment of a CTDEP Inland Wetlands and Watercourses permit and 401 Water Quality Certifications to conduct remedial activities within and adjacent to existing floodplain wetlands.

Wetlands Survey at Historic Industrial Facility, Norwalk, CT

Performed both state and federal wetland surveys in conjunction with a proposed remediation of impacted materials located adjacent to a coastal tidal river. Assessed necessary wetland regulatory requirements and secured permits from the Connecticut Department of Environmental Protection Office of the Long Island Sound and Army Corps of Engineers.

Wetland Survey, U.S. Naval Subbase, Groton, CT

Task Manager. Delineation of both state and federally regulated wetlands in conjunction with a remedial investigation at this Superfund site. Also assisted in developing specifications and plans for both in-kind and out-of-kind wetland mitigation for areas impacted with the proposed corrective-action activities.

Town of Cromwell, Wetland Mapping and Inventory Project, Cromwell, CT

Task Manager. Town wide study included the field mapping and classification/ evaluation of all the wetlands within the municipality according to the State of Connecticut Inland Wetlands and Watercourses regulations and Federal criteria (Army Corps of Engineers).

Town of Fairfield, Wetlands Mapping Project, Fairfield, CT

Project Manager. Assisted in the field delineation of wetlands and watercourses for the entire municipality according to the State of Connecticut Inland Wetland Regulations.

Wetland Mapping, Correctional Institution, Somers/Enfield, CT

Assistant Project Manager. Responsibilities included mapping wetlands according to the standards set forth by the State of Connecticut for the 1,700+ acre facility and the production of a high-intensity soil survey and wetland map of the property.

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Education	B.S. University of Massachusetts, Plant and Soil Sciences, 1988 Graduate coursework, University of New Hampshire
Affiliations	Member, Lebanon Inland Wetlands and Watercourses Commission, since 1995.
Registration	Professional Soil Scientist, Society of Soil Scientists of Southern New England, since 1988. Connecticut Association of Wetland Scientists. Association of Massachusetts Wetland Scientists.
Certifications	OSHA Hazardous Water Operations and Emergency Response (HAZWOPER) Training (29 CFR 1910.120)



Vanasse Hangen Brustlin, Inc.

54 Tuttle Place
Middletown, Connecticut 06457
860 632-1500
FAX 860 632-7879

Memorandum

To: Chuck Regulbuto
Optasite Towers LLC
One Research Drive, Suite 200C
Westborough, MA 01581

Date: June 11, 2008

Project No.: 4099.16

From: Dean Gustafson
Professional Soil Scientist

Re: Wetland Determination Review
Proposed Optasite Towers Site
497A Wickham Road
Glastonbury, Connecticut

Vanasse Hangen Brustlin, Inc. (VHB) has completed on-site investigations to determine if the wetland and watercourse delineation conducted by Kleinfelder East, Inc. on June 5, 2007 at 497A Wickham Road, Glastonbury, Connecticut is substantially correct (see attached Kleinfelder Wetland & Watercourse Delineation Report).

The wetland inspection was conducted by reviewing the previously delineated wetland boundary on June 11, 2008. The inspection focused on areas within 150 feet of the proposed Optasite Towers development (e.g., access road, stream crossing and telecommunications facility).

Minor amendments to small areas of flagged wetland line were made in two locations proximate to the proposed access road (see attached amended wetland flagging sketch maps). Wetland flag sequence numbers 167 to 169 (Kleinfelder) were re-flagged to incorporate areas containing poorly drained wetland soils having characteristics consistent with a Wilbraham soil type. The new wetland flag sequence is WF 169X to WF 167X. An additional change to flagging sequence numbers 156 to 158 (Kleinfelder) was made; the new sequence is WF 158X to WF 156X. Soils in this area contain a sandy alluvial surface horizon, likely resulting from flooding during stormwater events and therefore is considered a regulated wetland area. Dominant tree species in the vicinity of these areas include yellow birch, black birch, tulip poplar, red maple and eastern hemlock. The areas of amended wetland boundary do not affect the proposed development activities proposed by Optasite Towers and are mentioned for reference purposes. The remainder of the wetland delineation work was found to be substantially complete.

The proposed tower site is characterized as forested upland with dominant tree species consisting of red oak, white oak, black birch, eastern hemlock, black oak, and tulip poplar. Dominant understory plant species in the vicinity of the proposed tower location include maple leaf viburnum, Christmas fern, witch hazel, and lowbush blueberry.

Enclosures

KLEINFELDER

EXPECT MORE®

June 25, 2007

Mr. Paul Lusitani
Clough Harbour & Associates, LLP.
2139 Silas Deane Highway
Suite 212
Rocky Hill, CT 06067-2336

**RE: Wetland & Watercourse Delineation Report
618 Neipsic Road a.k.a. 497a Wickham Rd
Glastonbury, Connecticut**

Dear Mr. Lusitani:

Kleinfelder East, Inc. (Kleinfelder) completed an on-site investigation to determine the presence or absence of wetlands and/or watercourses on the above referenced property (618 Neipsic Road a.k.a. 497a Wickham Rd, Glastonbury, CT), as requested and authorized. This investigation involved a wetland/watercourse delineation that was completed by a qualified staff soil scientist and conducted in accordance with the principles and practices noted in the United States Department of Agriculture (USDA) Soil Survey Manual (1993). The soil classification system of the National Cooperative Soil Survey was used in this investigation to identify the soil map units present on the project site.

INVESTIGATION

The project site was investigated on June 5, 2007, with a temperature in the mid-70s under partly sunny conditions. Soil types are identified by observing soil morphology (soil texture, color, structure, etc.). To observe the morphology of the soils, numerous test pits and/or hand borings (generally to a depth of at least two feet) are completed. Wetland and watercourse boundaries were identified with flags and hung from vegetation. These flags are labeled "Wetland Delineation", numbered consecutively, and generally spaced a maximum of approximately 50 feet apart. It is important to note that flagged wetland and watercourse boundaries are subject to change until verified by local, state, or federal regulatory agencies.

REGULATORY INFORMATION

Wetlands and watercourses are regulated by both state and federal law each with different definitions and regulatory requirements. Accordingly, the State may regulate waters that fall outside of federal jurisdiction; however, where federal jurisdiction exists concurrent State jurisdiction is almost always present.

State Regulation

Wetland determinations are based on the presence of poorly drained, very poorly drained, alluvial, or floodplain soils and submerged land. *Watercourses* are defined as "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private, which are contained within, flow through or border upon the state or any portion thereof." *Intermittent watercourse* determinations are made based on the presence of a defined permanent channel and bank, and two of the following characteristics: (1) evidence of scour or deposits of recent alluvium or detritus, (2) the presence of standing or flowing water for a duration longer than a

particular storm incident, and (3) the presence of hydrophytic vegetation. (See Inland Wetlands and Watercourses Act §22a-38 CGS.)

Federal Regulation

The United States Army Corps of Engineers (ACOE) regulate "Waters of the United States" under Section 404 of the Clean Water Act, which includes adjacent/tributary wetlands and watercourses. The New England Region of the ACOE has issued guidance documents discussing how wetlands and/or watercourses can be as much as 500 or more feet from regulated Waters of the U.S. and still be regulated if the Corps finds scientific indicators (e.g. ecological/biological/hydrological) that provide connections to the jurisdictional wetland. This guidance distance has been developed by the Corps New England Region based on research suggesting home range and migratory distances of 54 palustrine/riparian (wetland and watercourse) reptiles, amphibians and mammals. Discontinuities between jurisdictional Waters of the U.S. and neighboring wetlands can cause isolation of those wetlands or watercourse, which in turn can eliminate federal jurisdiction. The Corps use a three (3) parameter approach to wetland delineation that includes soils, hydrology and vegetation. It is necessary to successfully observe all three in order for the area to be considered a federal wetland in addition to it being "adjacent" to Waters of the U.S. Disturbed and atypical conditions allow for some modification of this requirement and invoke professional judgment.

Generally, in accordance with the Connecticut Programmatic General Permit (PGP), the Corps requires a permit application for activities of one (1) acre or greater affecting federal jurisdictional wetland areas or if special wetlands occur (these are defined in the PGP document).

WETLAND AND WATERCOURSE SITE DESCRIPTION

Wetland classifications used to identify the type of wetland(s) occurring on the project site are based on guidance from the U.S. Fish and Wildlife Service (USFWS) (Cowardin et.al. 1979). These are further qualified with the Hydrogeomorphic Method of wetland classification (Brinson, 1993). Photographs of the wetland/watercourse and upland habitats are attached.

The on-site wetland that was delineated consisted of a lacustrine unconsolidated bottom and emergent wetland system (USFWS class: LUB1C and LEM2E) which is seasonally flooded. Surrounding this system was a palustrine forested - emergent wetland system (USFWS class: PFO1 and PEM1) that was associated with the stream. These wetlands were delineated using sequentially numbered flags 1-17 (open end), 50 (open end) – 118 (open end), and 150 (open end) – 175. This wetland area is situated along an unnamed stream which receives overland flow from both the surrounding uplands and runoff from State Route 2, which borders the wetland to south. Water flows in a generally southern direction and ends in a small pond at the northern end of the property associated with Hubbard Brook. The wetland system on-site consists of the immediate edges of the stream, as well as, other seasonally saturated areas surrounding the stream where water ponds during high flow events. In general, the majority of the stream has 1 to 2 inches of water, with the outside edges of turning the channel containing as much as 6 inches. The water which falls on the surrounding uplands during a rain event tends to flow directly into the stream, as well as, flatter areas with the uplands surrounding the stream. Vegetation in these areas is thick and consists mostly of facultative and wetter species.

TABLE 1: Predominate Vegetation within and adjacent to the wetlands (Common (*Scientific*) names)

<p>TREES & SAPLINGS Green ash (<i>Fraxinus pennsylvanica</i>) Pin oak (<i>Quercus palustris</i>) Red maple (<i>Acer rubrum</i>) Red oak (<i>Quercus rubra</i>) Sweet birch (<i>Betula lenta</i>) White pine (<i>Pinus strobus</i>) Atlantic White Cedar (<i>Chamaecyparis thyoides</i>) Yellow birch (<i>Betula alleghaniensis</i>)</p> <p>SHRUBS Rosebay Rhododendron (<i>Rhododendron maximum</i>)</p> <p>HERBS/VINES Slender blue iris (<i>Iris prismatica</i>) Cinnamon fern (<i>Osmunda cinnamomea</i>) Sensitive fern (<i>Onoclea sensibilis</i>) Skunk cabbage (<i>Symplocarpus foetidus</i>) Virginia creeper (<i>Parthenocissus quinquefolia</i>)</p> <p>*Denotes State non-native invasive species</p>

SOIL MAP TYPES

A brief description of each soil map unit identified on the project site is presented below including information from the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil descriptions. Further information on these and other soils, please refer to the internet site at <http://soils.usda.gov/technical/classification/osd/index.html>). The soil survey map and soil identification pages for the project site are attached.

Upland Soils

Manchester (MgB) gravelly sandy loam, 3 to 45 percent slopes

The Manchester series consists of very deep, excessively drained soils formed in sandy and gravelly glacial outwash and stratified drift. They are nearly level to steep soils on outwash plains, terraces, kames, deltas and eskers. Slope ranges from 0 to 45 percent, approximately 3% on site. The soils formed in sandy and gravelly glaciofluvial materials and stratified drift derived mainly from a red sedimentary rocks and basalt. Diagnostic horizons in this pedon include an Ochric epipedon from 0 to 9 inches, a sandy-skeletal particle-size control section from 10 to 40 inches and no diagnostic subsoil.

Hartford sandy loam, 0 to 3 percent slopes

The Hartford series consists of very deep, somewhat excessively drained soils formed in sandy glacial outwash. They are nearly level to strongly sloping soils on plains and terraces. Slope ranges from 0 to 8 percent. Saturated hydraulic conductivity is high in the surface layer and subsoil and high or very high in the substratum. Diagnostic horizons in this pedon include an ochric epipedon from 0 to 8 inches (Ap horizon), and a cambic horizon in the zone from 8 to 26 inches (Bw1 and Bw2 horizons).

Wetland Soils

Saco (108) silt loam

Saco soils are nearly level soils on flood plains, along rivers and streams. They are in depressed areas. Slope ranges from 0 to 2 percent. The soils formed in recent silty alluvium derived mostly from granite, gneiss, schist, shale and sandstone. In places water is ponded on the surface from late fall through early

spring. Permeability is moderate in the silty layers and rapid or very rapid in the underlying sandy materials. These soils flood in the spring and after periods of heavy rainfall.

REFERENCES

1. Brinson, M.M. 1993. *A Hydrogeomorphic Classification for Wetlands*. Tech. Rpt.WRP-DE-4, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.
2. Cowardin, L.M., V. Carter, F.C. Golet, E.T. LaRoe. 1979. *Classification of Wetland and Deepwater Habitats of the United States*. US Government Printing Office. Washington D.C. GPO 024-010-00524-6.103 pp.

CLOSING

Thank for the opportunity to work with you on this project. Please contact me at (860) 683-4200 if you have any questions or require additional assistance.

Very truly yours,
Kleinfelder East, Inc.



Date:
2007.07.02
20:24:43 -04'00'

Paul Wheeler
Project Wetland Scientist



Date: 2007.07.02
20:24:12 -04'00'

Jeffrey R. Shamas, CE, SS, PWS
Natural Resources Program Manager

Attachments

Photographs

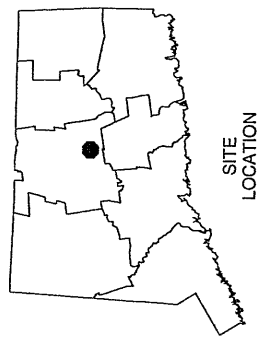
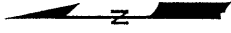
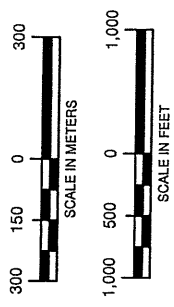


Cover types within Wetland Area



Stream and a portion of the associated wetland within the project Site

Site Location Map

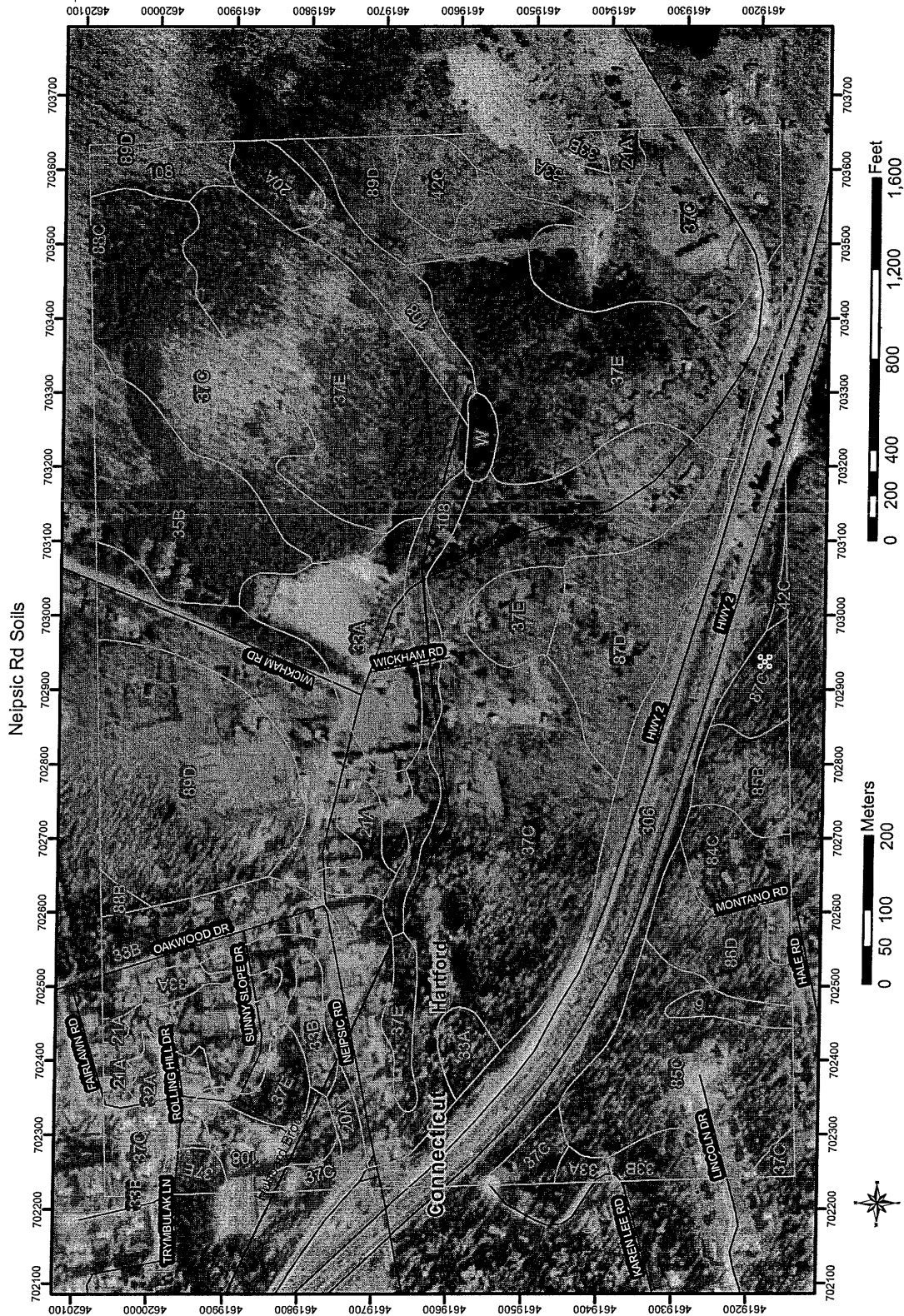


KLEINFELDER 7 AIRPORT PARK BLVD LATHAM, NEW YORK 12110 PH. (518) 786-8750 FAX. (518) 786-8755 www.kleinfelder.com	DRAWN BY: PW	REVISOR: PW	CHECKED BY: JS	APPROVED BY: JS	DATE: 6/8/07	SOURCE: CONNECTICUT DEP GIS DATA DEPOT
	SITE LOCATION MAP					
CLOUGH HARBOUR & ASSOCIATES, LLP 618 NEIPSIC ROAD a.k.a. 497a WICKHAM ROAD HARTFORD COUNTY GLASTONBURY, CONNECTICUT						

FIGURE 1

*Soil Survey Map and
Associated Information*







































SOIL SURVEY OF STATE OF CONNECTICUT



SOIL SURVEY OF STATE OF CONNECTICUT

Neipsic Rd Soils

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: 4
 Soil Map Compilation Scale: 1:12000

Map comprised of aerial images photographed on these dates:
 4/23/1990; 3/24/1997

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.

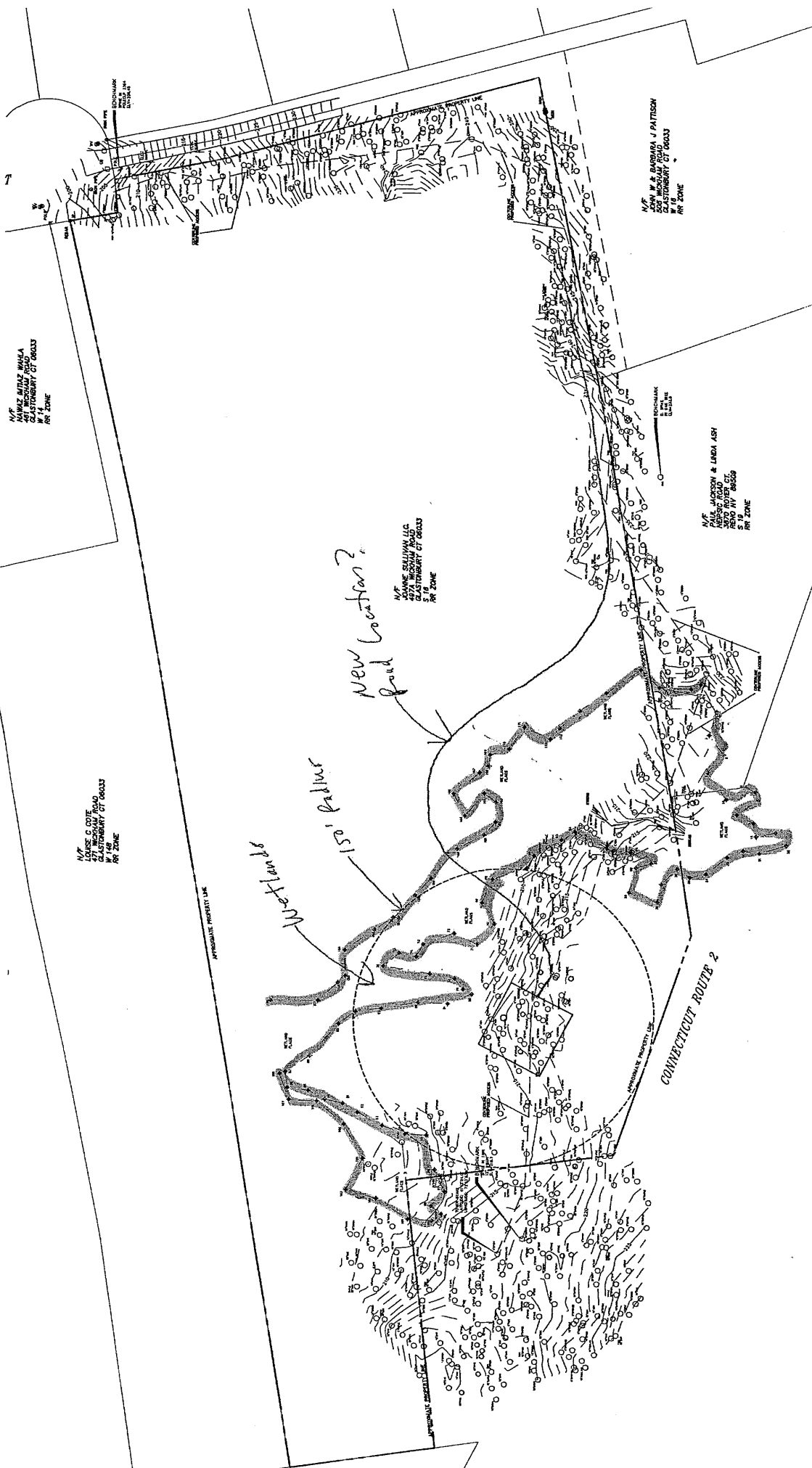
Map Unit Legend Summary

State of Connecticut

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
6	Wilbraham and Menlo soils, extremely stony	1.3	0.4
20A	Ellington silt loam, 0 to 5 percent slopes	3.5	1.1
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	3.7	1.1
32A	Haven and Enfield soils, 0 to 3 percent slopes	1.8	0.5
33A	Hartford sandy loam, 0 to 3 percent slopes	17.6	5.4
33B	Hartford sandy loam, 3 to 8 percent slopes	11.9	3.7
35B	Penwood loamy sand, 3 to 8 percent slopes	12.2	3.8
37C	Manchester gravelly sandy loam, 3 to 15 percent slopes	105.4	32.4
37E	Manchester gravelly sandy loam, 15 to 45 percent slopes	52.7	16.2
42C	Ludlow silt loam, 2 to 15 percent slopes, extremely stony	3.2	1.0
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	4.7	1.4
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	3.8	1.2
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	13.7	4.2
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	5.2	1.6
87C	Wethersfield loam, 8 to 15 percent slopes	2.4	0.7
87D	Wethersfield loam, 15 to 25 percent slopes	10.7	3.3
88B	Wethersfield loam, 3 to 8 percent slopes, very stony	0.5	0.2
88C	Wethersfield loam, 8 to 15 percent slopes, very stony	0.1	0.0
89D	Wethersfield loam, 15 to 35 percent slopes, extremely stony	25.6	7.9
108	Saco silt loam	16.4	5.0

State of Connecticut

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
306	Udorthents Urban land complex	28.3	8.7
W	Water	1.0	0.3



M/F
MILWAUKEE PARK
417 W. MILWAUKEE ROAD
CLAYTONSBURY CT 06033
PR ZONE

M/F
C. G. DUFF
17 W. G. DUFF ROAD
CLAYTONSBURY CT 06033
PR ZONE

M/F
MAINE SULLIVAN LLC
4574 WESTMIN ROAD
S. 18
PR ZONE

M/F
JOHN W. & BARBARA J PATTERSON
CLAYTONSBURY CT 06033
PR ZONE

M/F
PAUL JACKSON & LYNN ASH
WENTWORTH ROAD
SOUTH BRITAIN CT
PR ZONE

Wetlands
1st fallow
New location?

CONNECTICUT ROUTE 2

APPROXIMATE PROPERTY LINE

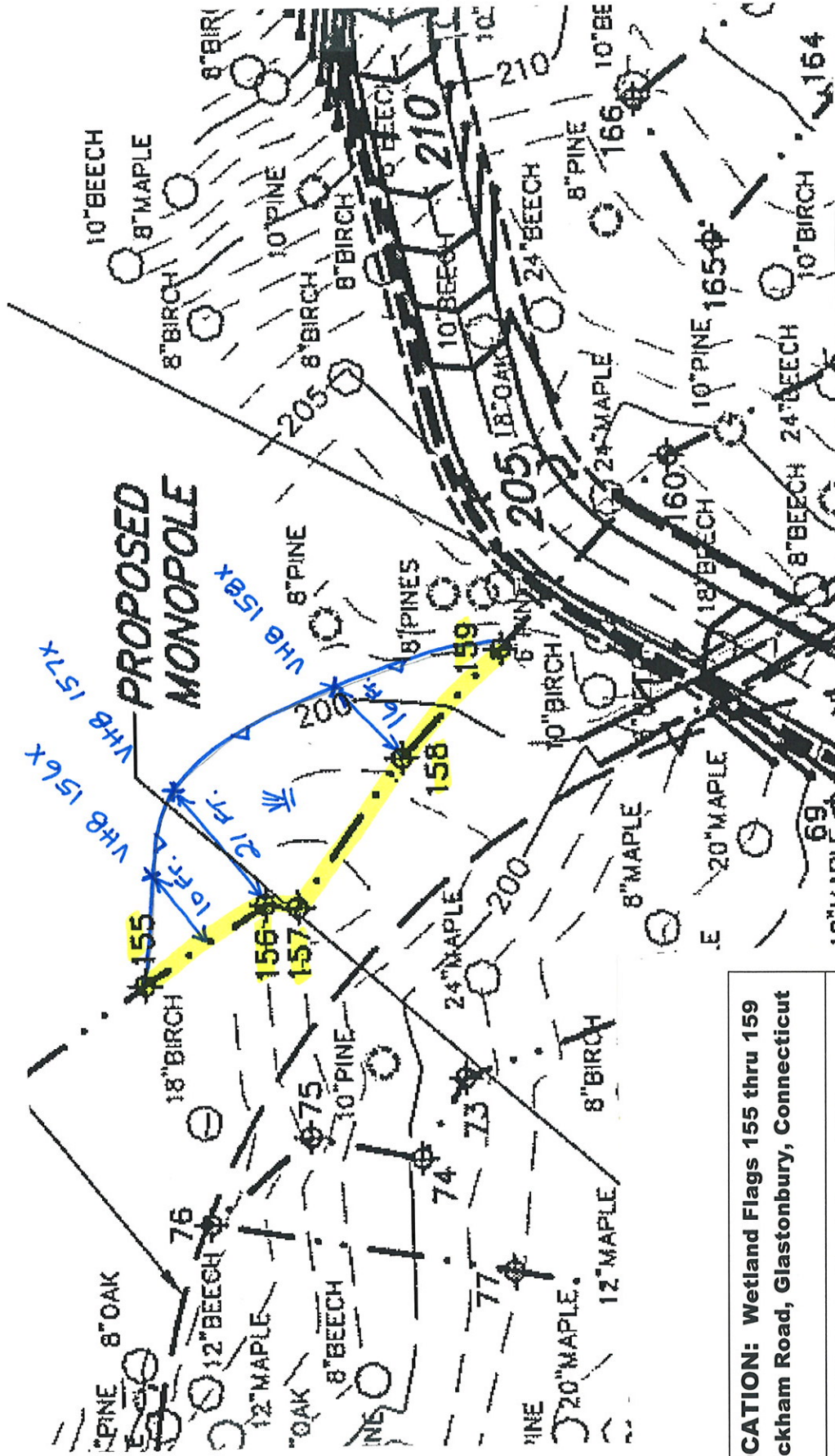
APPROXIMATE PROPERTY LINE

WETLAND DELINEATION SKETCH

VHB Vanasse Hangen Brustlin, Inc.

54 Tuttle Place
Middletown, CT 06457

AMENDED WETLAND FLAGS
VHB 156X, 157X & 158X



SITE LOCATION: Wetland Flags 155 thru 159 497A Wickham Road, Glastonbury, Connecticut
SKETCHED BY: Dean Gustafson, PSS
DATE: June 11, 2008

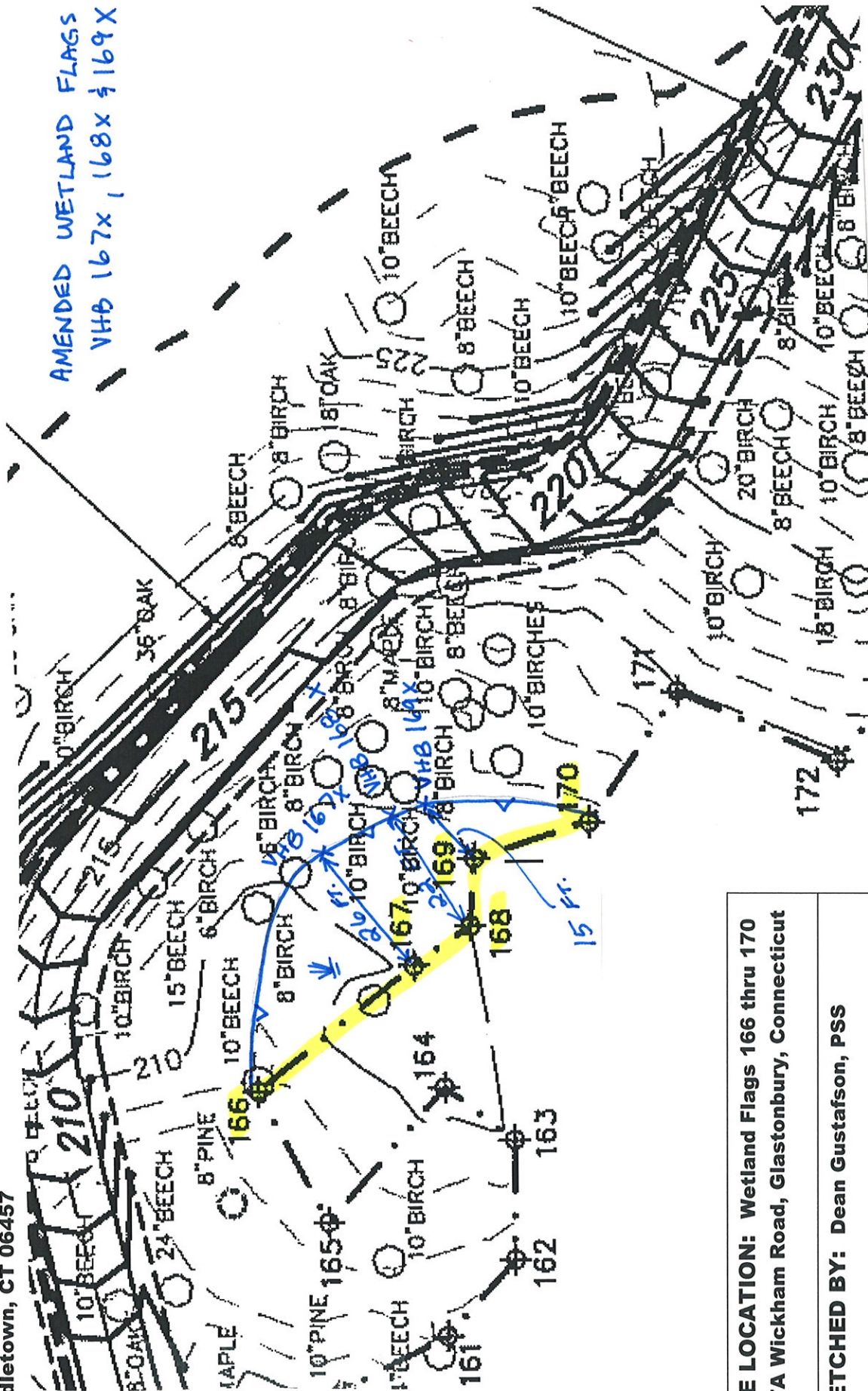
Note: the information shown on this sketch depicting amended wetland boundary is approximate and is to be used for general planning purposes only.

WETLAND DELINEATION SKETCH

VHB Vanasse Hangen Brustlin, Inc.

54 Tuttle Place

Middletown, CT 06457



Note: the information shown on this sketch depicting amended wetland boundary is approximate and is to be used for general planning purposes only.

SITE LOCATION: Wetland Flags 166 thru 170 497A Wickham Road, Glastonbury, Connecticut
SKETCHED BY: Dean Gustafson, PSS
DATE: June 11, 2008



Vanasse Hangen Brustlin, Inc.

54 Tuttle Place
Middletown, Connecticut 06457
860 632-1500
FAX 860 632-7879

Memorandum

To: Chuck Regulbuto
Optasite Towers LLC
One Research Drive, Suite 200C
Westborough, MA 01581

Date: June 11, 2008

Project No.: 4099.16

From: Dean Gustafson
Professional Soil Scientist

Re: Wetland Determination Review
Proposed Optasite Towers Site
58 Montano Road
Glastonbury, Connecticut

Vanasse Hangen Brustlin, Inc. (VHB) has completed on-site investigations to confirm that no wetlands or watercourses are present on the proposed Optasite Towers Site at 58 Montano Road in Glastonbury, Connecticut. A wetland and watercourse inspection was previously performed by Soil Science and Environmental Services, Inc. (SS&ES) on March 8, 2006 during which no wetlands or watercourses; a copy of the SS&ES report is enclosed.

The Site was inspected on June 11, 2008 to confirm the previous findings of SS&ES. The proposed Site consists of a developed residential property and adjoining upland forested areas bordering the north side of Montano Road and south side of Route 2. The proposed access road would lead from Montano road east across the property towards a forested upland area of the subject property (refer to enclosed Site Access Map, Sheet No. A02, prepared by Clough Harbour & Assoc. LLP, dated 09/17/07). On site investigations confirmed that there are no wetlands or watercourses located on the parcel. Upland glacial till soils previously identified by SS&ES, Woodbridge, Paxton and Montauk, were field confirmed. Dominant overstory tree species identified in the vicinity of the proposed tower and access road include red oak, black oak, white oak, pignut hickory, American beech, black birch, tulip poplar, sugar maple, red maple, and black cherry. Dominant plants observed in the understory include maple leaf viburnum, black cherry, spicebush, American beech, Virginia creeper, Christmas fern, jack-in-the-pulpit, Asiatic bittersweet, and smooth buckthorn. The nearest wetland/watercourse area appears to be a narrow forested wetland and intermittent watercourse system located approximately 500 feet west of Montano Road and the start of the proposed access road.

Enclosures

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.

545 Highland Avenue * Route 10 * Cheshire * Connecticut * 06410 * (203) 272-7837
FAX (203) 272-6698

WETLANDS/WATERCOURSES AND SOIL REPORT

To: URS Corporation
Attn: Alitz Abadjian
500 Enterprise Drive, Suite 3B
Rocky Hill, CT 06067

SSES Job No: 2006-111-CT-GLA-1
Client Job No: OPT013/36915453.00000
Site Inspection Date: March 8, 2006

PROJECT TITLE AND LOCATION: Proposed Optasite Tower, 58 Montano Road, Glastonbury,
CT

IDENTIFICATION OF WETLANDS AND WATERCOURSES RESOURCES

WETLANDS AND WATERCOURSES PRESENT ON PROPERTY: Yes _____ No XX

Wetlands: Inland Wetlands _____ **Watercourses:** Streams _____
Tidal Wetlands _____ Waterbodies _____

Remarks: _____

VEGETATION COMMUNITIES PRESENT IN WETLANDS

Forest _____ Sapling/Shrub _____ Wet Meadow _____ Marsh _____ Field/Lawn _____

SOIL MOISTURE CONDITION

Dry _____
Moist XX
Wet _____

WINTER CONDITIONS

Frost Depth: 0-3 inches
Snow Depth: 0-3 inches

The classification system of the National Cooperative Soil Survey, USDA, Natural Resources Conservation Service and the State Soil Legend were used in this investigation. The investigation was conducted by the undersigned Registered Soil Scientist. A sketch map showing wetland boundaries and the numbering sequence of wetland markers, watercourses and soil types in both wetland and non-wetlands are included with this report. After the wetland boundary and/or watercourse flags have been located/plotted by the surveyor, it is recommended that a copy of the survey map be sent to our firm for review. All wetland boundary lines established by the undersigned Registered Soil Scientist are subject to change until officially adopted by local, state or federal regulatory agencies.

Respectfully Submitted by

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.

Thomas W. Pietras

Thomas W. Pietras
Registered Professional Soil Scientist
Professional Wetland Scientist

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.

545 Highland Avenue * Route 10 * Cheshire * Connecticut * 06410 * (203) 272-7837

FAX (203) 272-6698

WETLANDS/WATERCOURSES AND SOIL REPORT

PROJECT TITLE AND LOCATION: Proposed Optasite Tower, 58 Montano Road, Glastonbury, CT

NUMBERING SEQUENCE OF WETLAND BOUNDARY LINE MARKERS:

There are no wetlands on the property, nor were any observed to lie in close proximity.

SOILS SECTION:

Soil Legend: State Soil Number/County Soil Symbol, Soil Series Name, Taxonomic Class & Brief Description.

WETLAND SOILS

None

NON-WETLAND SOILS

45/Wx Woodbridge fine sandy loam (Aquic Dystrudepts) - This is a deep, moderately well drained, glacial till soil developed in a friable, coarse-loamy textured, solum over dense, basal till (hardpan). The till was derived from schist, gneiss and granite. Woodbridge soils occur on glaciated plains, hills and ridges. The hardpan is within 20 to 40 inches.

84/Pb Paxton and Montauk fine sandy loams (Oxyaquic Dystrudepts) - These are deep, well drained, glacial till soils developed in a friable, coarse-loamy textured solum over dense, coarse-loamy to sandy textured, basal till (hardpan). The till was derived from schist, gneiss and granite. Typical depth to hardpan is 30-40 inches. Paxton and Montauk soils occur on glaciated plains, hills and ridges.

Notes: An existing residence and lawn area are present in the front portion of the lot. The rear of the property is forested. Near the southeast property corner is a shallow, dug well. The well measures approximately 8 feet in diameter and is 4 to 5 feet deep in the center. On 3/8/06, the well was full to the ground surface. To the east of the property the land drops sharply downward towards Route 2. A drainage ditch runs along the western side of the highway.

SOIL SCIENCE AND ENVIRONMENTAL SERVICES, INC.

545 Highland Avenue * Route 10 * Cheshire * Connecticut * 06410 * (203) 272-7837

FAX (203) 272-6698

DEFINITIONS AND METHODOLOGY DEFINITIONS OF STATE REGULATED WETLANDS & WATERCOURSES

INLAND WETLANDS AND WATERCOURSES: According to Section 22a-38 of the State of Connecticut Inland Wetlands and Watercourses Act, Wetlands "means land, including submerged land, not regulated pursuant to sections 22a-28 to 22a-35, which consists of any of the soil types designated as poorly drained, very poorly drained, alluvial, and floodplain by the National Cooperative Soils Survey, as may be amended from time to time, of the Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture." Watercourses "means rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent, public or private. Intermittent watercourses shall be delineated by a defined permanent channel and bank and the occurrence of two or more of the following characteristics: (A) Evidence of scour or deposits of recent alluvium or detritus, (B) the presence of standing or flowing water for a duration longer than a particular storm incident, and (C) the presence of hydrophytic vegetation."

TIDAL WETLANDS: According to Connecticut General Statutes, Sec. 22a-29 (2) of the Tidal Wetlands Act, Tidal Wetlands are defined as "those areas which border on or lie beneath tidal waters, such as, but not limited to banks, bogs, salt marsh, swamps, meadows, flats, or other low lands subject to tidal action, including those areas now or formerly connected to tidal waters, and whose surface is at or below an elevation of one foot above local extreme high water; and upon which may grow or be capable of growing some, but not necessarily all of the following:" (list of those plants common to tidal marshes, brackish wetlands and other wetlands which are subject to tidal influence).

METHODOLOGY FOR IDENTIFICATION OF SOILS, WETLANDS & WATERCOURSES

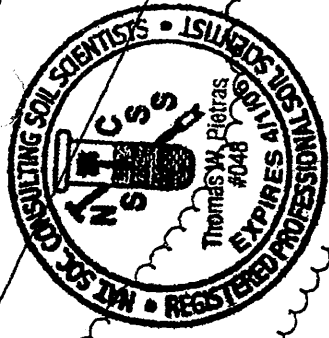
1) **SOILS IDENTIFICATION:** Soils are investigated by digging test holes with a spade and auger. Test holes are typically dug to depths of between 15 and 40 inches. Based on soil features, including coloration patterns, texture and depths to restrictive layers, the soils are identified by soil series utilizing the classification system of the National Cooperative Soil Survey. The soil map series correspond with the State Soil Map Legend established by USDA, NRCS in the State of Connecticut Soil Survey. For further information about soils refer to the NRCS website for CT: www.ct.nrcs.usda.gov

2) **INLAND WETLAND DELINEATION:** Soil test holes and borings are made in selected areas in order to determine the lateral extent of Inland Wetlands. The boundaries of all Inland Wetlands on each project site are delineated with consecutively numbered survey tapes, unless instructed by the client to only map wetland boundaries for planning purposes.

3) **IDENTIFICATION OF WATERCOURSES:** Watercourse locations are sketched onto maps. Often ponds, streams and rivers are already shown on the survey map. If a watercourse is not shown on a survey map, survey tapes are placed along the channel and labeled "Intermittent or Perennial Watercourse."

4) **TIDAL WETLANDS:** Tidal Wetlands are identified based on a predominance of tidal wetland plants and observation of physical markings or water laid deposits resulting from tidal action. Tidal Wetland boundaries are established by locating the upland limits of the "Listed Plants" from the Tidal Wetlands Act to the extent that these plants reflect inundation by tides.

Ortho map of soil types
field identified on
March 8, 2006
Thomas W. Pietras



Route 2
APPROX. COMPOUND
DRAINAGE DITCHES
LOCATIONS

55.70' S ROAD

~~S21 (Montano Rd.)~~
#58
~~64/Pb~~

S22 (Montano Rd.)
#48

S23 (Montano Rd.)
#49

~~45~~
WX shallow dug well

~~69~~
Pb

361.40'

66.40'

338.10'

360'±

104'

181'±



(MAP #32A3)

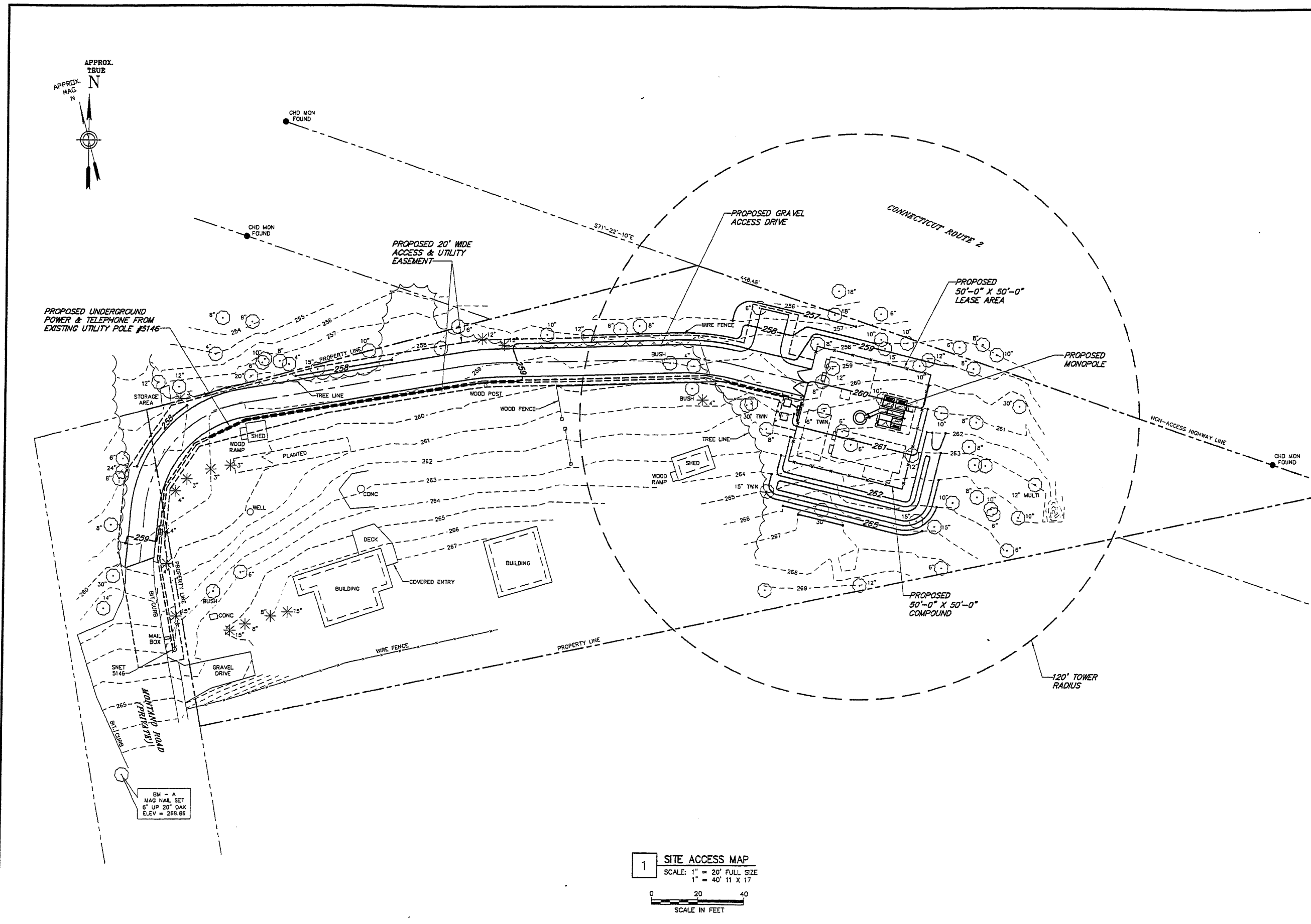
NO.	SUBMITTAL		
0	08/17/07	ISSUED FOR REVIEW	
	BY: PAL	CHK: PAL	APP'D: JPS

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SITE ID:
 CT-999-0101
 SITE NAME:
 MONTANO
 SITE ADDRESS:
 58 MONTANO ROAD
 GLASTONBURY, CT
 06033
 HARTFORD COUNTY

SHEET TITLE
 SITE ACCESS MAP

SHEET NUMBER
 A02



1 SITE ACCESS MAP
 SCALE: 1" = 20' FULL SIZE
 1" = 40' 11 X 17
 SCALE IN FEET

BASEMAP NOTES:
 1. BASEMAP INFORMATION OBTAINED FROM DRAWINGS BY URS CORPORATION AES DATED 03/14/06 AND A 05/15/07 SITE VISIT PERFORMED BY CLOUGH HARBOUR & ASSOCIATES LLP AND DOES NOT REPRESENT AN ACTUAL FIELD SURVEY.

Fig. 1.105281-01-002 MONTANO-GLASTONBURY-CT-DIVIDING-LINE-2 SITE ACCESS MAP ENG. Scale: 9/7/2007 8:37:48 AM Plotted: 9/17/2007 8:37:56 AM User: Unknown Plot