CUDDY& FEDER LLP

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February 2, 2018

BY HAND AND ELECTRONIC DELIVERY
Hon. Robert Stein, Chairman
and Members of the Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: Docket 478
Eco-Site, Inc. & T-Mobile Northeast
Proposed Wireless Telecommunications Tower Facility
63 Woodland Street, Glastonbury Connecticut

Dear Chairman Stein and Members of the Council:

On behalf of the applicants please find enclosed the following:

1. Applicants' supplemental submission in furtherance of the captioned Docket; and
2. Full copies of the NEPA Report provided as a Bulk Filing to the Council.

In addition, the Applicants are in receipt of the Council's January 16, 2018 request for extension of time to render a decision in this Docket to May 11, 2018. The Applicants hereby consent to this request for extension.

Should the Council or staff have any questions regarding this matter, please do not hesitate to contact me.

Very truly yours,

Daniel M. Laub

Enclosures

cc: Eco-Site
T-Mobile
Christopher B. Fisher, Esq.

CUDDY& FEDER LLP

CERTIFICATE OF SERVICE

I hereby certify that on this day, an original and 15 copies of the foregoing were delivered by hand and electronically to the Connecticut Siting Council with copy to:

Town of Glastonbury
Richard Johnson, Town Manager
2155 Main Street
PO Box 6523
Glastonbury, CT 06033

February 2, 2018

Daniel M. Laub

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL

IN RE:
APPLICATION OF ECO-SITE AND T-MOBILE NORTHEAST, LLC FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR THE CONSTRUCTION, MAINTENANCE, AND OPERATION OF A TELECOMMUNICATIONS FACILITY LOCATED AT WOODLAND STREET, GLASTONBURY, CONNECTICUT

DOCKET NO. 478

February 2, 2018

APPLICANTS' SUPPLEMENTAL SUBMISSION

Eco-Site and T-Mobile (together the "Applicants"), submit the following information to the State of Connecticut Siting Council in response to questions raised at the January 11, 2018 hearing and pursuant to the Siting Council's January 16, 2018 memorandum in this Docket.

FAA Correspondence

Please find included as Attachment 1 an official copy of the antenna structure registration indicating "FAA Chapters None" which is where any conditions or additional requirements, including marking and lighting, would be identified.

NEPA Report

Included as Attachment 2 please find the NEPA Screening Checklist for this project. Due to its size the entire report including the large Appendix to of the NEPA Report is being bulk filed with the Council with a copy of same being provided to the Town of Glastonbury.

Type of Forest

The proposed facility site is lightly forested and includes a mix of largely broadleaf trees with evergreen trees along with underbrush and young growth prominent along the existing access drive. This is consistent with the site's location in the Eastern Broadleaf Forest (Oceanic) Province which is generally characterized by a winter deciduous forest dominated by tall broadleaf trees that provide dense, continuous canopy in the summer and shed their leaves completely in winter. Field review confirms that the forest overstory is dominated by oaks (white, black, red), American beech, black birch, hickories (shagbark, pignut), eastern hemlock, witch-hazel, and maple-leaved viburnum.

As the Council's site visit was cut short due to the distance of the access drive, time constraints for the hearing and icy field conditions, please find included as Attachment 3 a photo package including numerous views of the existing road, the area of the proposed new access drive and the area of the proposed facility compound.

Carrier Responses

Eco-site reviewed its files and it has not in fact received any correspondence from carriers other than T-Mobile expressing interest in this site but Eco-Site does understand generally that all carriers in the market lack reliable service in this area of Southern Glastonbury.

Revised Drawings and Wetlands Report

Included as Attachment 4 please find drawings reflecting the fully engineered new access drive including provisions for storm water. Two retaining walls are proposed on either side of the new access drive in order to avoid extensive grading that would require a more significant area of disturbance. Also included in Attachment 4 please find the final wetlands report, reflecting this design, and noting that no impacts from the proposal are anticipated.

Visual Simulations

The Applicants submit herein as Attachment 5 revised simulations prepared by Saratoga Associates providing call-out arrows for those simulations in which the tower placement was difficult to discern. Also included are simulations of the proposed facility in various configurations incorporating "stealth" designs including a faux tree "monopine", a "flagless flagpole" with internally mounted antennas, a flagless flagpole with externally mounted antennas and a design resembling a fire tower. While these products can be engineered, in all cases these more expensive designs appear to increase the visibility of the tower with additional height or massing. The monopine increases the silhouette above any ridgeline and increased height is required for both flagpole designs to accommodate the number of antennas required for T-Mobile. The stealth "fire tower" is a large structure that would require a larger foundation than proposed with the associated monopole and in Eco-Sites experience provides more limited opportunities for collocation than the proposed monopole.

ATTACHMENT 1

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION
ANTENNA STRUCTURE REGISTRATION

OWNER: Eco-Site

FCC Registration Number (FRN): 0023078488

ATTN: Ingrid Thomas Eco-Site 240 Leigh Farm Rd Suite 230 Durham, NC 27707	**Antenna Structure Registration Number** 1301607 **Issue Date** 03-01-2017
Location of Antenna Structure 63-80 Woodland Street Glastonbury, CT 06073 **County:** HARTFORD	**Ground Elevation (AMSL)** 97.2 **meters** **Overall Height Above Ground (AGL)** 48.8 **meters**
Latitude 41- 39- 38.9 N **Longitude** 072- 34- 26.8 W **NAD83**	**Overall Height Above Mean Sea Level (AMSL)** 146.0 **meters**
Center of Array Coordinates N/A	**Type of Structure** MTOWER Monopole
FAA Chapters NONE	

This registration is effective upon completion of the described antenna structure and notification to the Commission. **YOU MUST NOTIFY THE COMMISSION WITHIN 24 HOURS OF COMPLETION OF CONSTRUCTION OR CANCELLATION OF YOUR PROJECT, please file FCC Form 854.** To file electronically, connect to the antenna structure registration system by pointing your web browser to http://wireless.fcc.gov/antenna. Electronic filing is recommended. You may also file manually by submitting a paper copy of FCC Form 854. Use purpose code "NT" for notification of completion of construction; use purpose code "CA" to cancel your registration.

The Antenna Structure Registration is not an authorization to construct radio facilities or transmit radio signals. It is necessary that all radio equipment on this structure be covered by a valid FCC license or construction permit.

You must immediately provide a copy of this Registration to all tenant licensees and permittees sited on the structure described on this Registration (although not required, you may want to use Certified Mail to obtain proof of receipt), and *display* your Registration Number at the site. See reverse for important information about the Commission's Antenna Structure Registration rules.

FCC 854R
June 2012

You must comply with all applicable FCC obstruction marking and lighting requirements, as set forth in Part 17 of the Commission's Rules (47 C.F.R. Part 17). These rules include, but are not limited to:

- ***Posting the Registration Number:*** The Antenna Structure Registration Number must be displayed in a conspicuous place so that it is readily visible near the base of the antenna structure. Materials used to display the Registration Number must be weather-resistant and of sufficient size to be easily seen at the base of the antenna structure. Exceptions exist for certain historic structures. See 47 C.F.R. 17.4(g)-(h).

- ***Inspecting lights and equipment:*** The obstruction lighting must be observed at least every 24 hours in order to detect any outages or malfunctions. Lighting equipment, indicators, and associated devices must be inspected at least once every three months.

- ***Reporting outages and malfunctions:*** When any top steady-burning light or a flashing light (in any position) burns out or malfunctions, the outage must be reported to the nearest FAA Flight Service Station, unless corrected within 30 minutes. The FAA must again be notified when the light is restored. The owner must also maintain a log of these outages and malfunctions.

- ***Maintaining assigned painting:*** The antenna structure must be repainted as often as necessary to maintain good visibility.

- ***Complying with environmental rules:*** If you certified that grant of this registration would not have a significant environmental impact, you must nevertheless maintain all pertinent records and be ready to provide documentation supporting this certification and compliance with the rules, in the event that such information is requested by the Commission pursuant to 47 C.F.R. 1.1307(d).

- ***Updating information:*** The owner must notify the FCC of proposed modifications to this structure; of any change in ownership; or, within 30 days of dismantlement of the structure.

Copies of the Code of Federal Regulations (which contain the FCC's antenna structure registration rules, 47 C.F.R. Part 17) are available from the Government Printing Office (GPO). To purchase CFR volumes, call (202) 512-1800. For GPO Customer Service, call (202) 512-1803. For additional FCC information, consult the Antenna Homepage on the internet at http://wireless.fcc.gov/antenna or call (877) 480-3201 (TTY 717-338-2824).

ATTACHMENT 2

NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) SCREENING

"CT-0007"
80 Woodland Street
South Glastonbury, CT 06073
CBRE Project No.: TS60415486

Prepared For:
Eco-Site

www.cbre.com/Assessment

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TELECOM ADVISORY SERVICES

4 West Red Oak Lane
White Plains, New York 10604
914.694.9600 Tel
914.694.1335 Fax

October 20, 2016

Jonathan Terry
Eco-Site
c/o Airosmith Development, Inc.
28 Clinton Street
Saratoga Springs, NY 12866

Re: NEPA Screening
"CT-0007"
80 Woodland Street, South Glastonbury, CT 06073
CBRE Project No.: TS60415486

Dear Mr. Terry:

CBRE Telecom Services, Inc. (CBRE) was retained by Eco-Site c/o Airosmith Development, Inc. (Eco-Site) to prepare an environmental screening pursuant to NEPA (40 CFR 1500-1508) and NEPA procedures required by the Federal Communications Commission (FCC) (47 CFR, Chapter 1, Part 1, Subpart I, §1.1301 to 1.1319). This review has been prepared to address the potential adverse environmental impacts associated with the proposed Undertaking. Environmental characteristics of the Undertaking were screened against the criteria listed in 47 CFR, Chapter 1, Part 1, Subpart I, §1.1306 & §1.1307(a) and (b).

The Subject Property is a portion of undeveloped woodland located in the southwestern section of an approximately 177-acre parcel. The Subject Property parcel consists primarily of woodland and is improved with several residential dwellings and barns which are located in the northeastern portion of the property near Woodland Street. The surrounding area is rural and consists primarily of undeveloped woodland, agricultural land, and limited amounts of residential development.

Eco-Site proposes to install a new telecommunications tower facility. The facility will consist of a 155-foot monopole and ancillary support equipment located within a 50-foot by 50-foot fenced compound on a 100-foot by 100-foot lease area. A proposed, 30-foot wide access and utility easement will extend from Woodland Street to the proposed lease area, utilizing a portion of an existing gravel driveway. Please see the attached lease exhibits for your review and information.

This review has been prepared to address the potential adverse environmental impacts associated with the proposed Undertaking. Environmental characteristics of the Undertaking were screened against the criteria listed in 47 CFR, Chapter 1, Part 1, Subpart I, §1.1306 & §1.1307(a) and (b).

This report concludes that the proposed installation will not result in a significant environmental effect per the criteria outlined in §1.1306 & §1.1307(a) and (b). As such the preparation of an Environmental Assessment (EA) is not required. Please note, as of the date of this Report, the thirty-day comment period stipulated by the NPA has expired. Based on the lack of response from the SHPO and in accordance with the procedures set forth in the NPA, CBRE assumes concurrence with this conclusion.

CBRE is pleased to submit this copy of our NEPA Screening in connection with the above-referenced property.

Thank you for letting us be of service and please do not hesitate to contact me at (914) 597-6956 or christopher.bond@cbre.com.

Sincerely,

CBRE Telecom Services, Inc.

Christopher Bond
Project Manager - Biologist

E. Gio Del Rivero
Director, Project Management

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NEPA CHECKLIST

FCC NEPA CATEGORY	RESPONSIBLE AGENCY	POTENTIAL FOR A SIGNIFICANT IMPACT		SUMMARY OF IMPACT
		YES	NO	
Is the Undertaking located within a **Designated Wilderness Area**	National Park Service, US Forest Service, Bureau of Land Management	◇	◈	
Is the Undertaking located within a **Designated Wildlife Preserve**?	National Park Service, US Forest Service, Bureau of Land Management	◇	◈	
Is the Undertaking located **within 1-mile of a National Wild and Scenic River or National Scenic Trail**?	National Park Service, US Forest Service, Bureau of Land Management	◇	◈	
Will the Undertaking affect **Threatened or Endangered Species** or a **Designated Critical Habitat**?	US Fish & Wildlife Service	◇	◈	
Will the Undertaking affect **Historic Resources listed on or eligible for listing on the National Register of Historic Places**?	Advisory Council on Historic Preservation, State Historic Preservation Office, Tribal Historic Preservation Office	◇	◈	
Will the Undertaking affect **Indian Religious Sites**?	Tribal Historic Preservation Office, American Indian Bureau of Indian Affairs	◇	◈	
Is the Undertaking located within a **Flood Plain?**	Federal Emergency Management Agency	◇	◈	
Will the Undertaking involve significant changes to **Surface Features**?	US Army Core of Engineers	◇	◈	
Will the Undertaking include **High Intensity White Lights**?	N/A	◇	◈	
Will the Undertaking result in human exposure to **Radio-Frequency Radiation** in excess of applicable safety standards?	N/A	N/A	N/A	

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FCC EXCLUSION ANALYSIS

Nationwide Programmatic Agreement dated 09/2004 ("NPA")
Nationwide Programmatic Agreement for the Collocation of Wireless Antennas dated 3/16/2001 ("CNPA")
Report and Order for the Acceleration of Broadband Deployment dated 10/21/2014 ("R&O")

TYPE OF UNDERTAKING		
Maintenance	Does the Undertaking involve MORE than the maintenance or servicing of existing permitted antennas and/or associated equipment? *If answer is "No", no further review is required. If "Yes" proceed to next question.*	Yes ● No ❍
Like for Like Modification	Does the Undertaking involve MORE than an exact antenna replacement (same location, and same OR smaller height and width) for an existing antenna? *If answer is "No", no further review is required. If "Yes" proceed to next question.*	Yes ● No ❍
New Tower	Does the Undertaking involve the construction of a new tower**?** *If answer is "Yes", proceed to the applicable Exclusion Analysis sections below and review any exclusions which could apply. If "No" proceed to next question.*	Yes ● No ❍
Collocation	Does the Undertaking involve only the collocation of antennas on an existing tower or non tower structure? *I If answer is "Yes", proceed to the applicable Exclusion Analysis sections below and review any exclusions which could apply.*	Yes ❍ No ●

NPA EXCLUSION ANALYSIS		
◇	**Exclusion A - Enhancement of a Tower**	
	Will the Undertaking consist of a collocation as defined by the CNPA?	Yes ❍ No ❍
	Will the height of the existing approved or grandfathered tower be increased by more than 10% or by the height of one additional antenna array with separation from the nearest antenna not to exceed twenty feet?	Yes ❍ No ❍
	Will more than the standard number of equipment, not to exceed 4 additional equipment cabinets or 1 additional shelter, be added?	Yes ❍ No ❍
	Will the width of the tower be increased by more than 20 feet or more than the width of the tower at the level of the appurtenance?	Yes ❍ No ❍
	Will there be excavation outside the current boundaries of the leased or owned property?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including either Section 106 Consultation or R&O Review as per below.	
◇	**Exclusion B - Construction of a Replacement Tower**	
	Will the height of the existing approved or grandfathered tower be increased by more than 10% or by the height of one additional antenna array with separation from the nearest antenna not to exceed twenty feet?	Yes ❍ No ❍
	Will more than the standard number of equipment, not to exceed 4 additional equipment cabinets or 1 additional shelter, be added?	Yes ❍ No ❍
	Will the width of the tower be increased by more than 20 feet or more than the width of the tower at the level of the appurtenance?	Yes ❍ No ❍
	Will there be excavation outside the current boundaries of the leased or owned property?	Yes ❍ No ❍
	Will the Undertaking increase the boundaries of the owned or leased area surrounding the existing tower by more than thirty feet?	Yes ❍ No ❍
	Will construction of the proposed replacement tower involve excavation outside of a thirty-foot radius from the edge of owned or leased area or outside existing access or utility easements?	Yes ❍ No ❍
	If the existing tower was constructed after March 16, 2001, has it NOT undergone Section 106 review?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including either Section 106 Consultation or R&O Review as per below.	
◇	**Exclusion C - Construction of temporary communications tower or facility**	
	Will the temporary installation involve excavation of soils where the depth of previous disturbance does NOT exceed the proposed disturbance depth by at least 2' or where geomorphic evidence does NOT indicate that cultural resource bearing soils do not occur in the area of the Undertaking or occur at depths at least 2' more than the proposed disturbance depth?	Yes ❍ No ❍
	Will the temporary installation be in operation for more than twenty-four months?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including either Section 106 Consultation or R&O Review as per below.	
◇	**Exclusion D - Construction of Facility within an existing industrial park, commercial strip mall or shopping center**	
	Will the Undertaking be over 200 feet in height?	Yes ❍ No ❍
	Is the locally designated industrial park, commercial strip mall, or shopping center less than 100,000 square feet?	Yes ❍ No ❍
	Is the locally designated industrial park, commercial strip mall, or shopping center located within the boundaries of or within five hundred feet of a historic property?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including either Section 106 Consultation or R&O Review as per below. Consultation with Native American Tribes and NHOs must be completed to meet this exclusion.	
◇	**Exclusion E - Construction of a Facility in or within 50' of the outer boundary of a Utility Transmission or distribution Right**	
	Will the proposed facility be located outside of or beyond fifty feet of a right-of-way designated by Federal, State, local, or Tribal governments as a location for communications towers or utility transmission and distribution lines?	Yes ❍ No ❍
	Could the proposed facility be considered a "substantial increase" in height, mass, or size in relation to existing towers or utility transmission and distribution lines located that the site?	Yes ❍ No ❍

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	Will the Undertaking increase the boundaries of the owned or leased area surrounding the existing tower by more than thirty feet?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including either Section 106 Consultation or R&O Review as per below. Consultation with Native American Tribes and NHOs must be completed to meet this exclusion.	
◇	**Exclusion F - Construction of a Tower in a SHPO/THPO permitted zone**	
	Will the proposed facility be located inside of an area designated by the SHPO and/or THPO for the construction of communications towers and associated facilities?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including either Section 106 Consultation or R&O Review as per below. Consultation with Native American Tribes and NHOs must be completed to meet this exclusion.	

CNPA EXCLUSION ANALYSIS		
◇	**Exclusion III - Collocation of antennas on a tower constructed on or before March 16, 2001**	
	Will the height of the existing approved or grandfathered tower be increased by more than 10% or by the height of one additional antenna array with separation from the nearest antenna not to exceed twenty feet?	Yes ❍ No ❍
	Will more than the standard number of equipment, not to exceed 4 additional equipment cabinets or 1 additional shelter, be added?	Yes ❍ No ❍
	Will the width of the tower be increased by more than 20 feet or more than the width of the tower at the level of the appurtenance?	Yes ❍ No ❍
	Will there be excavation outside the current boundaries of the leased or owned property?	Yes ❍ No ❍
	Has the FCC determined that the tower has, or potentially has, an "adverse effect" on historic properties?	Yes ❍ No ❍
	Is the tower pending environmental review before the FCC involving Section 106 compliance?	Yes ❍ No ❍
	Has the licensee or tower owner received notification of complaint from the public, SHPO, or Council that the collocation will have an adverse effect on historic properties?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including Section 106 Consultation.	
◇	**Exclusion IV - Collocation of antennas on a tower constructed after March 16, 2001**	
	Has the tower **NOT** previously undergone Section 106 review?	Yes ❍ No ❍
	Will the height of the existing approved or grandfathered tower be increased by more than 10% or by the height of one additional antenna array with separation from the nearest antenna not to exceed twenty feet?	Yes ❍ No ❍
	Will more than the standard number of equipment, not to exceed 4 additional equipment cabinets or 1 additional shelter, be added?	Yes ❍ No ❍
	Will the width of the tower be increased by more than 20 feet or more than the width of the tower at the level of the appurtenance?	Yes ❍ No ❍
	Will there be excavation outside the current boundaries of the leased or owned property?	Yes ❍ No ❍
	Will the collocation result in a substantial increase in the size of the tower?	Yes ❍ No ❍
	Has the FCC determined that the tower has or will have, or potentially has or will have, an "adverse effect" on historic properties?	Yes ❍ No ❍
	Has the licensee or tower owner received notification of complaint from the public, SHPO, or Council that the collocation will have an adverse effect on historic properties?	Yes ❍ No ❍
	If any of the above questions are answered "Yes", further review is required including Section 106 Consultation.	
◇	**Exclusion V - Collocation of antennas on buildings / non-tower structures**	
	Is the building/structure over 45 years old?	Yes ❍ No ❍
	Is the building/structure located inside the boundary of a historic district, or if the antenna is visible from the ground level of the historic district, the building or structure is within 250 feet of the boundary of the historic district?	Yes ❍ No ❍
	Is the building/structure a National Historic Landmark, or listed or eligible for listing on the NRHP?	Yes ❍ No ❍
	Has the licensee received notification of complaint from the public, SHPO, or Council that the collocation will have an adverse effect on historic properties?	Yes ❍ No ❍
	If the age of the building/non-tower structure is greater than 45 years, but the answer to the remaining three Stipulation conditions is 'No' (i.e. the age of the building is the only trigger for Section 106 review), then please refer to the following page for possible alternate exclusions for building collocations which may apply.	

R&O EXCLUSION ANALYSIS		
◇	**Categorical Exclusion of Deployments in Active Above-Ground Utility Right-Of-Ways**	
	The facility is not located within the boundaries of a National Historic Landmark, or property listed or eligible for listing on the National Register of Historic Places, or historic district.	Yes ❍ No ❍
	The facility will be located in a right-of-way that is designated by a Federal, State, local, or Tribal government for communications towers, above-ground utility transmission or distribution lines, or any associated structures and equipment.	Yes ❍ No ❍
	The right-of-way is in active use for such designated purposes.	Yes ❍ No ❍

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	The facility would not result in a Substantial Increase.	Yes ❍ No ❍
	In the context of this Categorical Exclusion, the term "Substantial Increase" is defined as: *1. Increase the height of the tower or non-tower structure by more than 10% or twenty feet, whichever is greater, over existing support structures that are located in the right-of-way within the vicinity of the proposed construction;* *2. Involve the installation of more than four new equipment cabinets or more than one new equipment shelter;* *3. Add an appurtenance to the body of the structure that would protrude from the edge of the structure more than twenty feet, or more than the width of the structure at the level of the appurtenance, whichever is greater (except that the deployment may exceed this size limit if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable); and,* *4. Involve excavation outside the current site, defined as the area that is within the boundaries of the leased or owned property surrounding the deployment or that is in proximity to the structure and within the boundaries of the utility easement on which the facility is to be deployed, whichever is more restrictive.*	
	If any of the above questions are answered "No", Section 106 consultation is required.	
◇	**Deployments on New or Replacement Poles / Utility Structures**	
	Will all antennas that are part of the deployment fit within enclosures (or if the antennas are exposed, within imaginary enclosures) that are no more than three cubic feet in volume, and all antennas on the structure, including any pre-existing antennas on the structure, fit within enclosures (or if the antennas are exposed, within imaginary enclosures) that total no more than six cubic feet in volume?	Yes ❍ No ❍
	Are all other wireless equipment associated with the structure, including pre-existing enclosures and including equipment on the ground associated with antennas on the structure, cumulatively no more than seventeen cubic feet in volume, exclusive of (i) Vertical cable runs for the connection of power and other services (ii) Ancillary equipment installed by other entities that is outside of the applicant's ownership or control, and (iii) Comparable equipment from pre-existing wireless deployments on the structure?	Yes ❍ No ❍
	Will the deployment involve no new ground disturbance?	Yes ❍ No ❍
	Will the deployment otherwise require the preparation of an EA under paragraph (a)(4)(i) of this section solely because of the age of the structure?	Yes ❍ No ❍
	If any of the above questions are answered "No", Section 106 consultation is required.	
◇	**Non Visible Antennas**	
	Is there an existing antenna on the building or structure?	Yes ❍ No ❍
	Is the new antenna NOT visible from any adjacent street or surrounding public spaces and is the antenna added in the same vicinity as the existing antenna?	Yes ❍ No ❍
	Does the new antenna comply with all zoning conditions and historic preservation conditions applicable to existing antennas in the same vicinity that directly mitigate or prevent effects, such as camouflage or concealment requirements?	Yes ❍ No ❍
	Does the deployment of the new antenna involve no new ground disturbance?	Yes ❍ No ❍
	Would the deployment otherwise require the preparation of an EA under paragraph (a)(4) of this section solely because of the age of the structure?	Yes ❍ No ❍
	If any of the above questions are answered "No", Section 106 consultation is required.	
◇	**Visible Replacement Antennas**	
	Is the antenna replacing an existing antenna?	Yes ❍ No ❍
	Will the new antenna be located in the same vicinity as the existing antenna?	Yes ❍ No ❍
	Will the new antenna be visible only from adjacent streets and surrounding public spaces that afford views of the existing antenna?	Yes ❍ No ❍
	Is the new antenna not more than 3 feet larger in height or width (including all protuberances) than the existing antenna?	Yes ❍ No ❍
	Will the new equipment cabinets NOT be visible from adjacent streets or surrounding public spaces?	Yes ❍ No ❍
	Does the new antenna comply with all zoning conditions and historic preservation conditions applicable to existing antennas in the same vicinity that directly mitigate or prevent effects, such as camouflage or concealment requirements?	Yes ❍ No ❍
	Does the deployment of the new antenna involve no new ground disturbance?	Yes ❍ No ❍
	Would the deployment otherwise require the preparation of an EA under paragraph (a)(4) of this section solely because of the age of the structure?	Yes ❍ No ❍
	If any of the above questions are answered "No", Section 106 consultation is required.	
◇	**Other Visible Antennas**	
	Is there an existing antenna on the building or structure?	Yes ❍ No ❍
	Will the new antenna be located in the same vicinity as the existing antenna?	Yes ❍ No ❍
	Will the new antenna be visible only from adjacent streets and surrounding public spaces that afford views of the existing antenna?	Yes ❍ No ❍
	Was the existing antenna deployed NOT using this exclusion §1.1307(a)(4)(ii)(B)(2)(iii))?	Yes ❍ No ❍
	Is the new antenna not more than 3 feet larger in height or width (including all protuberances) than the existing antenna?	Yes ❍ No ❍

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	Will the new equipment cabinets NOT be visible from adjacent streets or surrounding public spaces?	Yes ❍ No ❍
	Does the new antenna comply with all zoning conditions and historic preservation conditions applicable to existing antennas in the same vicinity that directly mitigate or prevent effects, such as camouflage or concealment requirements?	Yes ❍ No ❍
	Does the deployment of the new antenna involve no new ground disturbance?	Yes ❍ No ❍
	Would the deployment otherwise require the preparation of an EA under paragraph (a)(4) of this section solely because of the age of the structure?	Yes ❍ No ❍
	If any of the above questions are answered "No", Section 106 consultation is required.	

FINDINGS	
Section 106 consultation is required In accordance with 47 CFR Part 1.1301-1.1319 of the FCC regulations.	Yes ● No ❍
Comments: None	

NEPA REVIEW SUMMARY

DESIGNATED WILDERNESS AREAS • 47 CFR §1.1307(a)(1)
DESIGNATED WILDLIFE PRESERVES • 47 CFR §1.1307(a)(2)
NATIONAL WILD AND SCENIC RIVERS • PUBLIC LAW 90-542
NATIONAL SCENIC TRAILS • PUBLIC LAW 90-543
Is the Undertaking located within a Designated Wilderness Area or Preserve or within 1-mile of a National Wild and Scenic River or National Scenic Trail?

Summary

The Undertaking is not located in an officially Designated Wilderness Area or Preserve or within one-mile of a National Wild and Scenic River or National Scenic Trail and the Undertaking is exempt from further review. This determination was made by the review of several online resources maintained by the United States Geological Survey (USGS), National Park Service (NPS), U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), and Bureau of Land Management (BLM).

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THREATENED AND ENDANGERED SPECIES • 47 CFR §1.1307(a)(3)

Will the Undertaking (i) affect listed threatened or endangered species or designated critical habitats; or (ii) are likely to jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats, as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973?

One federally-listed endangered, threated, or proposed species are known to occur within the vicinity of the Undertaking. This determination was made by the review of online resources maintained by the USFWS which identifies trust resources within the vicinity of the Undertaking.

Additionally, based on a review of the USFWS online Critical Habitat Portal the Undertaking is not located within a designated critical habitat

CBRE also reviewed online resources maintained by the Connecticut Department of Energy and Environmental Protection (CTDEEP) to identify any state-protected resources that are known to occur within proximity of the Undertaking and found that no state-listed species are known to occur within the immediate proximity of the Undertaking.

Suitable habitat capable of supporting the Northern long-eared bat was observed within the vicinity of the Undertaking. CBRE submitted the NLEB streamlined consultation form to the USFWS on June 10, 2016. According to the USFWS, "If the USFWS does not respond within 30 days from submittal of this form, the action agency may presume that its determination is informed by the best available information and that its project responsibilities under 7(a)(2) with respect to the NLEB are fulfilled through the USFWS January 5, 2016, Programmatic BO." As such, it is anticipated that the proposed installation 'may affect, but is unlikely to adversely affect' protected species.

Migratory Bird Review

On September 27, 2013, the USFWS revised the "Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning. These guidelines outline voluntary federal recommendations designed to minimize the impacts of tower facilities on migratory birds protected under the Migratory Bird Treaty Act (MBTA) and the Endangered Species Act. Based upon the Undertaking design (i.e. non guyed) and height (i.e. less than 200 feet above ground level), the Undertaking meets many of the recommendations set forth in the USFWS's Revised Guidelines. As such, it is unlikely that the Undertaking would adversely impact migratory bird species protected under the MBTA and the Endangered Species Act.

Summary

The proposed Undertaking is not one that may adversely affect listed, threatened or endangered species or designated critical habitats or is likely to jeopardize the continued existence of any proposed endangered or threatened species or is likely to result in the destruction or adverse modification of proposed critical habitats.

(as determined by the Sec of Interior pursuant to the Endangered Species Act of 1973) (47 CFR §1.1307(a)(3)).

HISTORIC PROPERTIES • 47 CFR §1.1307(a)(4)

Will the Undertaking affect districts, sites, buildings, structures or objects, significant in American history, architecture, archeology, engineering or culture, that are listed, or are eligible for listing, in the National Register of Historic Places. (See 16 U.S.C. 470w(5); 36 CFR part 60 and 800.) To ascertain whether a proposed action may affect properties that are listed or eligible for listing in the National Register of Historic Places, an applicant shall follow the procedures set forth in the rules of the Advisory Council on Historic Preservation, 36 CFR part 800, as modified and supplemented by the Nationwide Programmatic Agreement for the Collocation of Wireless Antennas, Appendix B to Part 1 of this Chapter, and the Nationwide Programmatic Agreement Regarding the Section 106 National Historic Preservation Act Review Process, Appendix C to Part 1 of this Chapter?

It is CBRE's professional opinion that the proposed undertaking is ***not exempt*** from the consultation process set forth under Subpart B of 36 CFR Part 800 and under the provisions of the NPA and/or CNPA and that further Section 106 consultation with the SHPO is required.

Section 106 Consultation Overview

CBRE initiated Section 106 Review of the proposed Undertaking which included defining the area of potential effects ("APE"), identifying historic properties within the APE, evaluating the historic significance of identified properties as appropriate, assessing the effects of the Undertaking on these historic properties and consulting with the requisite State Historic Preservation Office(s) ("SHPO"), interested tribes and the public.

CBRE reviewed documentation available online, through public participation and/or at the SHPO office and conducted an independent assessment to determine what historic properties, if any were located within the APE along with their historic significance. CBRE additionally conducted a reconnaissance of the Subject and properties within the APE in order to identify any additional historic properties not identified above. CBRE then evaluated whether any historic properties would be affected by the Undertaking. Based on this review, CBRE determined that the Undertaking would have *No Effect* on historic properties located within the APE.

SHPO Review

CBRE submitted the above review and determination of effect using FCC Form 620 via the FCC's on-line Electronic Section 106 ("E-106") submission process on September 9, 2016. The submission included Undertaking drawings, the findings of archaeological review, copies of consultation correspondence to date, public notice documentation, and a request for comment to the SHPO. As of the date of this Report, the thirty-day comment period stipulated by the NPA has expired. Based on the lack of response from the SHPO and in accordance with the procedures set forth in the NPA, CBRE assumes concurrence with this conclusion.

NEPA REVIEW SUMMARY

Summary

Consequently, pursuant to 36 CFR 800.4(d)(1), no further Section 106 consultation is required unless additional resources are discovered during Undertaking implementation pursuant to 36 CFR 800.13.

As such, the Undertaking is not one that may affect districts, sites, buildings, structures or objects, significant in American history, architecture, archaeology, engineering or culture, that are listed, or are eligible for listing, in the NRHP and the Undertaking is exempt from further review.

NEPA REVIEW SUMMARY

INDIAN RELIGIOUS SITES • 47 CFR §1.1307(a)(5)

Will the Undertaking affect Indian Religious Sites?

CBRE reviewed documentation provided by Eco-Site in order to determine whether the Undertaking fell within any criteria exemptions from Section 106 Review set forth in the NPA or CNPA.

According to this review, the Undertaking **does not** meet the exemptions from Section 106 Review set forth in the NPA or CNPA; therefore, Tribal consultation is required.

As part of the Undertaking's Section 106 Review, information pertaining to the Undertaking was posted through the FCC's online Tower Construction Notification System ("TCNS"). On July 1, 2016 (TCNS ID# 140615) the FCC's TCNS sent the Undertaking information to the Tribes listed on their database who have interest in the state in which the Undertaking is planned. Additionally, CBRE submitted follow-up letters to each of the Tribes identified by the TCNS that have expressed interest in the Undertaking's geographical area.

Tribal Communication to date for this Undertaking is summarized in the attached table in the Appendix.

According to the attached TCNS Notice of Organizations email and subsequent consultation as described in the table above, the above tribe's have either requested a 30-day review period in which they will contact the applicant if they wish to participate in the consultation process, CBRE's consultation with each tribe with respect to the Undertaking scope and location has revealed they do not wish to consult further on the Undertaking or communication was referred to the FCC through the TCNS system. As of this writing it can be concluded that the above tribes do not wish to participate further in the consultation process, *provided work is stopped and they are contacted in the event of inadvertent discovery of cultural resources.*

Summary

As such, the Undertaking is not one that may affect Native American religious sites.

CBRE

FLOOD PLAINS • 47 CFR §1.1307(a)(6)

Is the Undertaking one that is located within a flood plain?

Summary

Based on CBRE's review of the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map, the proposed Undertaking is not located within a 100-year floodplain.

Summary

The Undertaking is not located within a floodplain.

SURFACE FEATURES (WETLANDS) • 47 CFR §1.1307(a)(7)

Will the construction of the Undertaking involve significant changes in surface features?

Summary

CBRE reviewed the USGS National Wetlands Inventory Global Information Systems (GIS) Mapper which includes a federal wetlands data layer prepared by the US Department of the Interior, Fish and Wildlife Service. The source material used to produce the National Wetlands Inventory digital data for these maps was prepared primarily by stereoscopic analysis of high altitude aerial photographs. CBRE also reviewed the Town of Glastonbury GIS wetlands map of the Subject area.

Based on CBRE's review, no mapped wetlands are located on or adjacent to the Undertaking. Furthermore, CBRE did not observe any vegetation consistent with a wetlands environment on or adjacent to the Subject.

CBRE also determined that the proposed Undertaking would not involve deforestation (to be differentiated from sporadic tree clearing) or water diversion.

Summary

As such, the Undertaking is not one that will involve significant change in surface features (e.g., wetland fill, deforestation or water diversion).

HIGH INTENSITY WHITE LIGHTS • 47 CFR §1.1307(a)(8)

Will the facility be equipped with high intensity white lights which are to be located in residential neighborhoods, as defined by the applicable zoning law?

Summary

According to documentation provided by Eco-Site and research completed by CBRE, the proposed Undertaking will not be equipped with high intensity white lights and/or is not located in a residential neighborhood.

NEPA REVIEW SUMMARY

RADIO FREQUENCY RADIATION • 47 CFR §1.1307(b)

Will the Facility, operation or transmitter, cause human exposure to levels of Radio-Frequency Radiation in excess of permissible limits?

Summary

An evaluation to determine whether radio frequency (RF) emission standards will be met is not included in this report. It is the understanding of CBRE that Eco-Site or one of its representatives will evaluate the undertaking to ensure compliance with applicable RF standards as per 47 CFR 1.1307 (b).

CBRE

LIMITING CONDITIONS

- This report has been prepared in compliance with generally accepted practices for conducting NEPA screenings in general compliance with FCC procedures found at 47 CFR, Subchapter A, Chapter 1, Part 1, Subpart I, §§ 1.1301 to 1.1319.
- The observations described in this report were made under the conditions stated herein. The conclusions presented in this report were based solely upon the services described herein.
- In preparing this report, CBRE has relied on certain information provided by federal, state, and local officials and other parties referenced therein, and on information contained in the files of governmental agencies, that were readily available to CBRE at the time of this assessment. Although there may have been some degree of overlap in the information provided by these various sources, CBRE did not attempt to independently verify the accuracy or completeness of all information reviewed or received during the course of this site assessment. Observations were made of the site and of the structures on the site as indicated in this report. Where access to portions of the site or to structures on the site was unavailable or limited, CBRE renders no opinion as to the effect of the Undertaking on same.
- No subsurface testing was conducted to determine the presence or absence of cultural resources in the Undertaking area unless specifically delineated within this report.
- No wetlands delineation was conducted to determine the presence or absence of wetlands in the Undertaking area unless specifically delineated within this report.
- No formal biological assessment was conducted to determine the presence or absence of endangered species in the Undertaking area unless specifically delineated within this report.
- This report is not to be relied upon by any party nor used for any purpose other than that specifically stated within this Report's Introduction Section 2.1 without CBRE's advance and express written consent.

REFERENCES

www.wilderness.net
www.nps.gov/gis
www.blm.gov/nhp/facts/index.htm
www.nationalatlas.gov/printable/fedlands.html#list
www.terraserver.microsoft.com
www.fws.gov/refuges/
www.fws.gov/GIS/data/CadastralDB/index.htm
www.terraserver.microsoft.com
www.nationalatlas.gov/printable/fedlands.html#list
www.usfws.gov
www.crithab.fws.gov
www.wireless.fcc.gov/siting/npa/intro.html
www.grants.cr.nps.gov/CLG_NEW/CLG_REVIEW/search.cfm
www.www.nationalregisterofhistoricplaces.com/state.html
www.tps.cr.nps.gov/nhl/default.cfm
www.cr.nps.gov/nhl/designations/listsofNHLs.htm
www.wireless.fcc.gov/outreach/index.htm?job=tower_notification
www.www.nps.gov/history/nagpra/
www.wireless.fcc.gov/outreach/index.htm?job=tower_notification
FEMA Flood Insurance Maps- www.www.fema.gov
Further Advice on Executive Order 11988 Floodplain Management - www.www.fema.gov
US Department of the Interior, Fish and Wildlife Service, National Wetlands Mapper
www.wetlandsfws.er.usgs.gov/wtlnds/launch.html
www.www.nps.gov/nts/maps.html
www.www.nps.gov/ncrc/programs/nts/nts_trails.html
CBRE also reviewed applicable state specific resources as applicable
Client Provided Information
“Indian Lands in the United States” prepared by the Bureau of Indian Affairs (BIA) Geographic Data Service Center, dated December 1998
Tribal Correspondence as per TCNS Responses

ATTACHMENT 3

Prepared For:

State of Connecticut
Connecticut Siting Council

Docket #: 478

PHOTO DOCUMENTATION

Site Name:

Glastonbury

Site Number:

CT-0007

Prepared By:

INFINIGY

1033 Watervliet Shaker Road
Albany, NY 12205
(518) 690-0790

AJ DeSantis
January 12, 2018

TABLE OF CONTENTS

BACKGROUND:

Eco-Site and T-Mobile Northeast have proposed a personal wireless telecommunications facility located off Woodland Street in Glastonbury, CT 06073. The proposed installation consists of a new 150' tall monopole tower contained within a 50'x50' fenced equipment area within a 100'x100' lease area. T-Mobile proposes to install ground equipment and antennae at the 146' elevation level. Access to the site will be via 20' access and utility easement along an existing drive for approximately 3,750' and along a new drive for approximately 650' through a wooded area to the site location.

A field review of the proposed telecommunications was made available to the Connecticut Siting Council and members of the Public. On January 11, 2018 at 2:00PM, the field review began, and all parties present commenced the walk to the proposed personal wireless telecommunications facility. Due to time constraints, the site walk was deemed complete at approximately 2:15-2:20PM. It is estimated that approximately 1,750'-2,000' of the first portion of the access drive (along the existing access drive) was successfully navigated during that time.

PURPOSE:

At the request of the Council, I completed the walk to the proposed personal wireless communications facility taking photos along the path. Photos attached herein show the existing conditions as noted during my walk. All photos presented here were taken on January 11, 2018 from approximately 2:20PM – 2:30PM.

PHOTO LOG

EXISTING ACCESS DRIVE

(Continuation from completion of Field Review Walk Stopping Point)

Photo 1: Along Existing Access Drive

Approximately Same Location As Site Walk Completion Location.

Photo 2: Along Existing Access Drive

Photo 3: Along Existing Access Drive

Photo 4: Along Existing Access Drive

Photo 5: Along Existing Access Drive

Photo 6: Along Existing Access Drive

Photo 7: Along Existing Access Drive

Photo 8: Along Existing Access Drive

Photo 9: Along Existing Access Drive

Photo 10: Along Existing Access Drive

Photo 11: Along Existing Access Drive

Photo 12: Along Existing Access Drive

Note: The wooden stake with the blue flagging on it represents the center of the access drive. Location for the path was a less dense area of underbrush.

Photo 13: Along Existing Access Drive

NEW ACCESS DRIVE

Photo 14: New Access Drive Location

Just through the underbrush as shown in Photo 13.

Photo 15: New Access Drive Location

Photo 16: New Access Drive Location

Photo 17: New Access Drive Location

Photo 18: New Access Drive Location

Photo 19: New Access Drive Location

Photo 20: New Access Drive Location

Photo 21: New Access Drive Location

Photo 22: New Access Drive Location

Photo 23: New Access Drive Location

Photo 24: New Access Drive Location

COMPOUND LOCATION

As you approach from New Access Drive.

Photo 25: Compound Location

Stake in the foreground is the Northwestern most corner of the lease area.

Photo 26: Compound Location

The two stakes with blue ribbon connecting is the True North mark out.

Photo 27: Compound Location

The stake in the center right of photo with pink flagging is the northwesterly most corner of the fenced compound.

Photo 28: Compound Location

The two vertical stakes with pink flagging and “X” represent tower center; there is a metal pin staked for tower center in subsequent photos.

Photo 29: Compound Location

Photo 30: Compound Location

Photo 31: Compound Location

COMPOUND LOCATION 360 DEGREE VIEW

Photo location point is approximately tower center. Each subsequent photo in the sequence will be to the left of the previous photo taken.

Photo 32: Compound Pan Left

Photo 33: Compound Pan Left

Photo 34: Compound Pan Left

Photo 35: Compound Pan Left

Photo 36: Compound Pan Left

Photo 37: Compound Pan Left

Photo 38: Compound Pan Left

Photo 39: Compound Pan Left

Photo 40: Compound Pan Left

Photo 41: Compound Pan Left

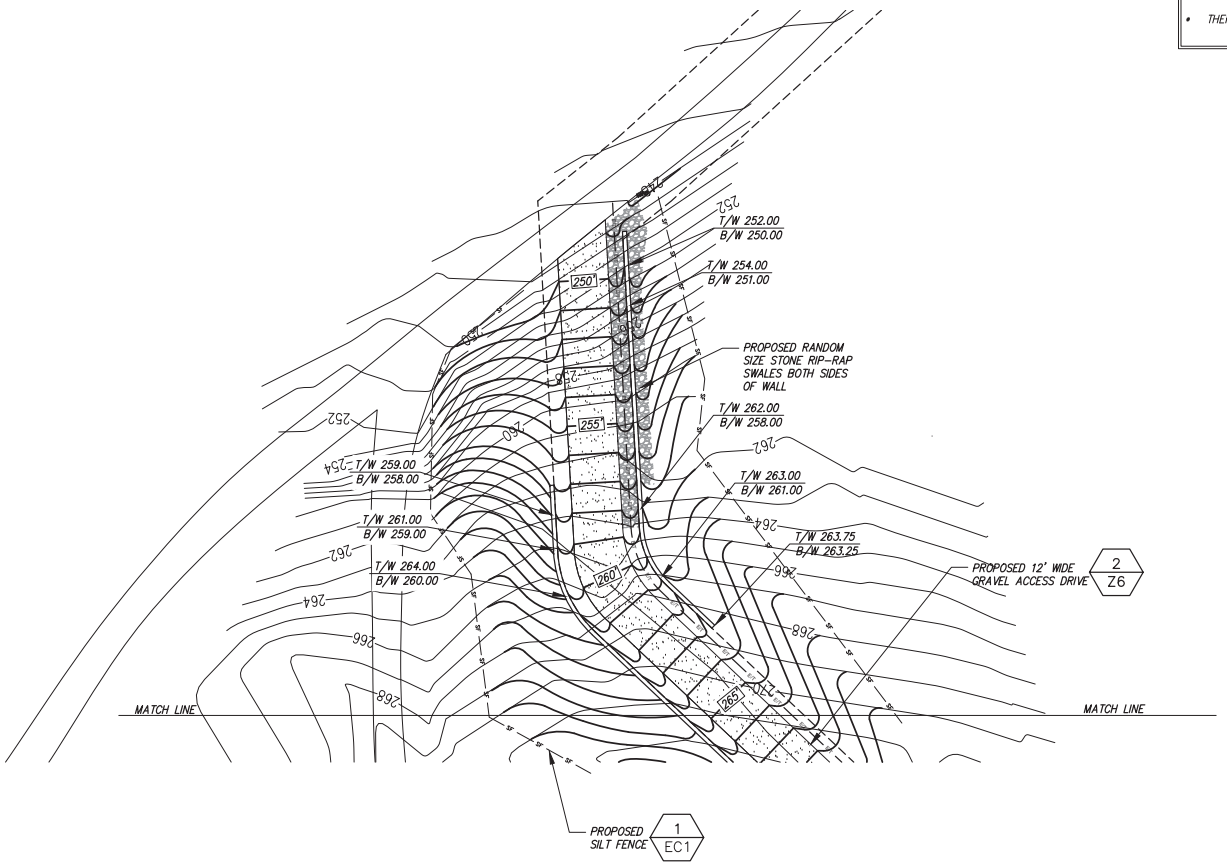
Photo 42: Compound Pan Left

Photo 43: Compound Pan Left

ATTACHMENT 4

TREE REMOVAL NOTE:

- IT IS ASSUMED THAT ONE TREE MEASURING 6" DBH OR GREATER EXISTS FOR EVERY 400 SQUARE FEET OF AREA TO BE IMPROVED.
- BASED ON A LEASE AREA OF 100'x100' AND A NEW ACCESS DRIVE CONSISTING OF 40,000 SQFT OF DISTURBANCE, THE TOTAL AREA TO BE CLEARED IS:
  [(100)(100)] + [40,000] = 50,000 SQUARE FEET
- ADDING AN APPROXIMATE 10% CONTINGENCY, THE TOTAL AREA TO BE CLEARED IS 55,000 SQUARE FEET.
- THEREFORE THE ESTIMATED NUMBER OF TREES TO BE CLEARED IS:
  55,000/400 = 138 TREES



1 GRADING PLAN
SCALE: AS NOTED

APPROX. NORTH

GRAPHIC SCALE
30' 15' 0 15' 30'
SCALE (11x17): 1" = 30'-0"
SCALE (22x34): 1" = 15'-0"

BASEMAPPING INFORMATION BASED ON INFORMATION OBTAINED FROM AERIAL PHOTOGRAPHY, INFORMATION PROVIDED BY ECO-SITE, A SITE WALK COMPLETED BY INFINIGY ENGINEERING ON 5/17/16 AND SURVEY COMPLETED BY CLIMAX DEVELOPMENT, SIGNED AND STAMPED BY EARLE C. NEWMAN ON 11/18/16.

INFINIGY
1033 Watervliet Shaker Road | Albany, NY 12205
Phone: 518-690-0790 | Fax: 518-690-0793
www.infinigy.com

No.	Submittal / Revision	App'd	Date
3	REVISED GRADING PLAN	EDR	1/31/18
2	REVISED PER COMMENTS	SKB	8/23/17
1	REVISED ACCESS DRIVE	SKB	12/15/16
0	FOR POWER CO. REVIEW	AJD	9/7/16

Drawn: AJD Date: 9/7/16
Designed: AJD Date: 9/7/16
Checked: AJD Date: 9/7/16

Project Number: 502-000

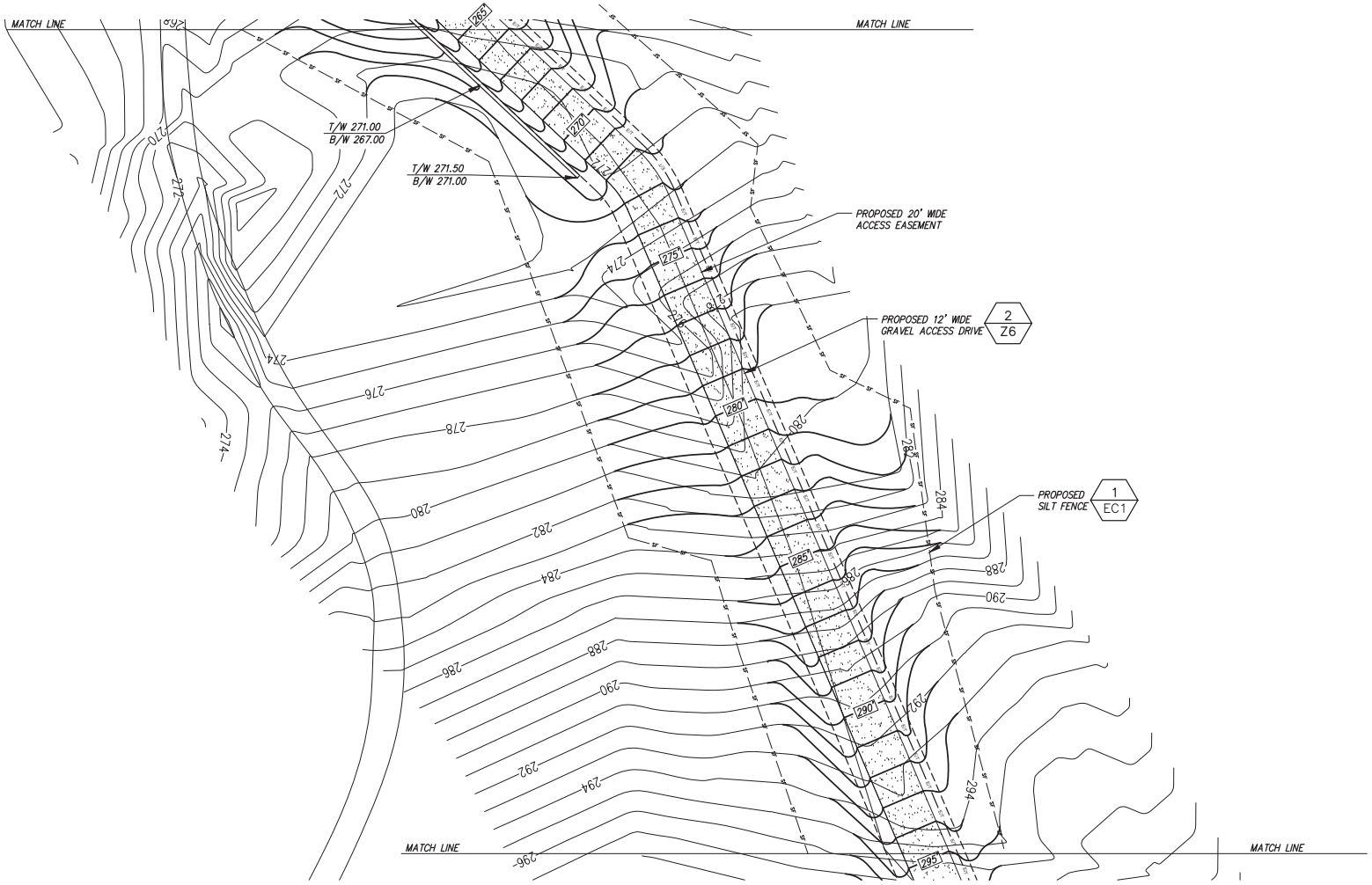
Project Title:
GLASTONBURY
CT-0007
63-80 WOODLAND STREET
GLASTONBURY, CT 06073

Prepared For:
Eco-Site

Drawing Title:
GRADING PLAN

Drawing Scale:
Date: 8/23/17
ZD

Drawing Number:
EC2



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APPROX. NORTH

1 GRADING PLAN
SCALE: AS NOTED

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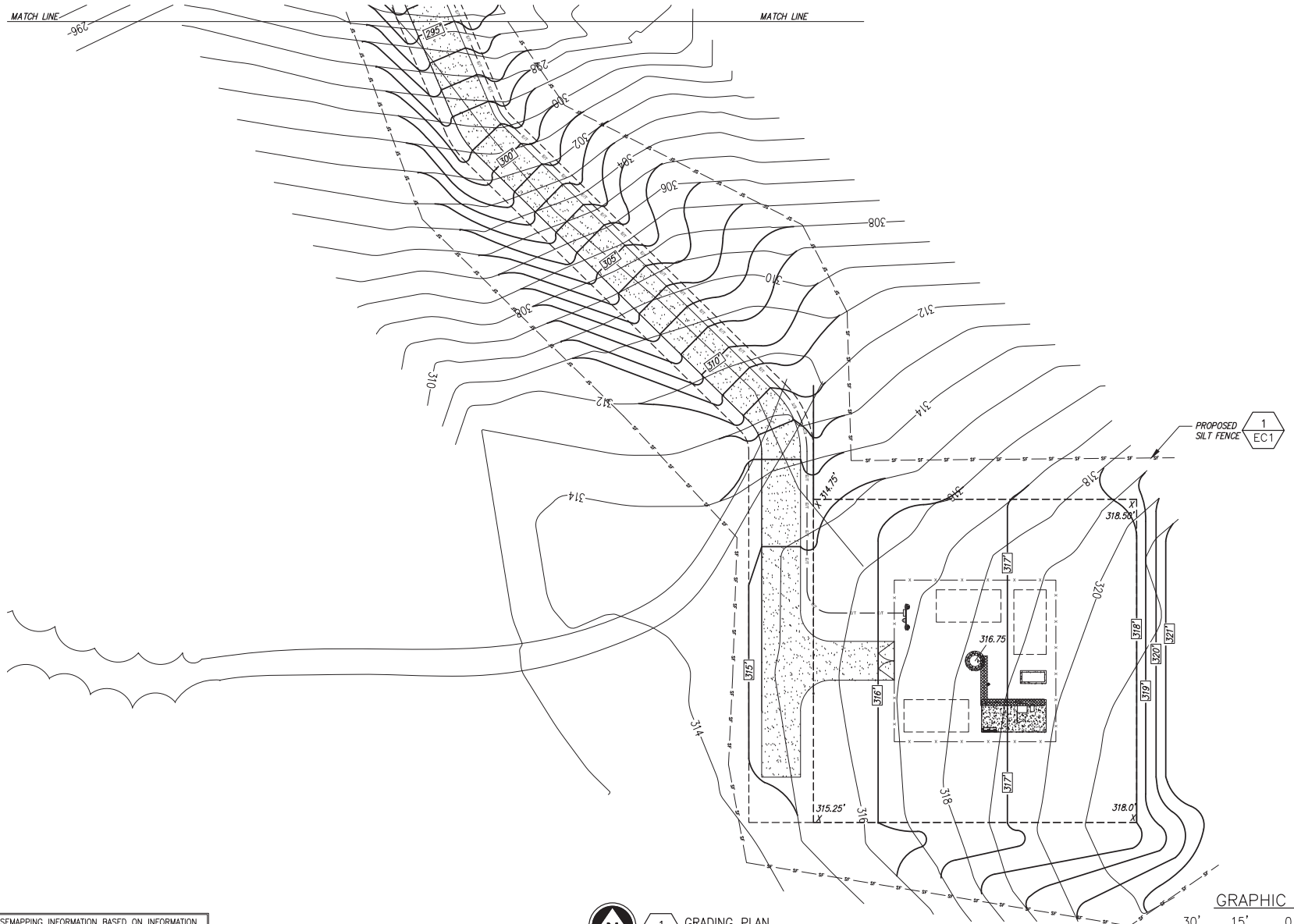
Prepared For:
Eco-Site

Drawing Title:
GRADING PLAN

Drawing Scale:
Date: 8/23/17
ZD

Drawing Number:
EC3



BASEMAPPING INFORMATION BASED ON INFORMATION OBTAINED FROM AERIAL PHOTOGRAPHY, INFORMATION PROVIDED BY ECO-SITE, A SITE WALK COMPLETED BY INFINIGY ENGINEERING ON 5/17/16 AND SURVEY COMPLETED BY CLIMAX DEVELOPMENT OF W.N.Y. TITLED "GLASTONBURY", DATED 6/14/16.

APPROX. NORTH

1 GRADING PLAN
SCALE: AS NOTED

GRAPHIC SCALE
30' 15' 0 15' 30'
SCALE (11x17): 1" = 30'-0"
SCALE (22x34): 1" = 15'-0"

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CT-0007
63-80 WOODLAND STREET
GLASTONBURY, CT 06073

Prepared For:
Eco-Site

Drawing Title:
GRADING PLAN CONTINUED

Drawing Scale:
Date: 8/23/17
ZD

Drawing Number:
EC4

JMM WETLAND CONSULTING SERVICES, LLC

23 Horseshoe Ridge Road
Newtown, CT 06482

Phone: 203-364-0345
Mobile: 203-994-3428
james@jmmwetland.com
jmmwetland.com

February 1, 2018

Mr. David M. Akerblom
Director of Operations - Telecom
CBRE, Inc. – Telecom Advisory Services
70 West Red Oak Lane
White Plains, NY 10604

RE: ***Site Investigation/Wetland Delineations***
Glastonbury CT-0007
63–80 Woodland Street, Glastonbury, Connecticut

JMM Job # 18-2204-GLA-1

Dear Mr. Akerblom:

JMM Wetland Consulting Services, LLC (JMM) conducted a site visit on January 9th, 2018, for the purpose of delineating and inventorying regulated wetlands and watercourses on a portion of the above-referenced parcel, in accordance with the CT State Statutes (i.e. CGS Sections 22a-36 to 22a-45) and to collect baseline data for this report. Specifically, JMM reviewed a portion of the aforementioned property (i.e. JMM study area), as delineated and shown in attached Figure 1 and 2.

1.0 Introduction

The study area, which encompasses roughly 26.4 acres, is located within an overall +/- 177-acre property, west of Woodland Street, in South Glastonbury, CT (see Figure 1, attached). The northeastern extent of the study area starts at Woodland Street, and follows an existing dirt access drive through an existing Christmas tree and orchard farm, which leads to an active sand and gravel pit within the study area's southernmost section. The study area,

also includes a forested section of land located up-gradient and to the east of the sand and gravel pit (see Figure 2).

2.0 Regulated Resource Areas

2.1 Methodology of Resource Area Determinations: Wetlands & Watercourses

JMM conducted wetland resource area delineations to identify wetlands and watercourses subject to state or federal jurisdiction based upon the Connecticut Inland Wetlands and Watercourses Act (CGS Section 22a-36 through 45, The Act). Prior to conducting field investigation, on-line resources were reviewed, including soils and wetlands mapping, archival aerial photographs, and local parcel information (i.e., Town of Glastonbury GIS mapping).

The Act defines a wetland as:

> "land, including submerged land…which consists of poorly drained, very poorly drained, alluvial and floodplain soils as defined by the National Cooperative Soils Survey. Such areas may include filled, graded or excavated sites which possess an aquic (saturated) moisture regime as defined by the United States Department of Agriculture (USDA) Cooperative Soil Survey."

Watercourses are defined in The Act 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."

The Act defines Intermittent Watercourses as having:

> "a defined permanent channel bed and bank and the occurrence of two of the following: A) evidence of scour or deposits of recent alluvium or detritus, B) the presence of standing or flowing water for a duration of longer than a particular storm incident, or C) the presence of hydrophytic vegetation."

JMM staff walked the study area, shown in Figure 1 and 2. However, observations of significant regulated resources were also made outside of the study area boundary. These included the Roaring Brook riparian corridor located to the north and northwest of the study

area, as well as its perennial tributary Stab Gut Brook, located outside of the study area to the west, south, and southwest.

2.2 Description of Regulated Areas: Wetlands & Watercourses

During the course of the wetland and watercourse delineations, JMM staff collected pertinent baseline data at each of the identified regulated areas. However, due to the season (i.e. winter; snow/frost depths), the inventory of herbaceous species was limited.

Figure 2, attached shows the approximate locations of the delineated and inventoried resources. Annotated photographs of each of these areas are also attached (photos 1 through 8).

2.2.1 JMM-IWC- Series: Intermittent Watercourse

This regulated intermittent watercourse is located on the downgradient (i.e., west) side of the existing access drive, approximately 120 feet north of an existing woods road that extends easterly uphill off the existing access drive towards the proposed cell tower location (see Figure 2).

JMM delineated the centerline of the intermittent watercourse from an existing 12-inch RCP under the access driveway westerly downslope for approximately 150 feet (see photos 1-2). JMM-IWC-1 to JMM-IWC-3 demarcates this resource. This roughly 1-foot or less channel mainly received surface flows from points east (i.e. upgradient) and some seasonal groundwater flows. It should be noted that the soils associated with this resource are moderately well drained. No flows were noted within the channel during the January 9th, 2018 site visit.

2.2.2 JMM A/1A- Series: Wetlands/Watercourse

This regulated area is located centrally along the existing access drive (see Figure 2), and consists of a narrow wetland corridor with an intermittent watercourse (see photos 3-4). JMM-A-1 to JMM-A-8 demarcate the upgradient (i.e., south) side of the regulated resource, while JMM-1A-1 to JMM-1A-18 demarcate the downgradient (i.e., north) section of the resource.

The upgradient section is characterized by poorly drained soils identified as the Raypol (12) soil series and is classified as a palustrine, broad-leaved forested wetland (PFO1) according the National Wetland Inventory (NWI) Classification system. The dominant hydrologic regime within this wooded swamp is *seasonally saturated/seasonally flooded* (see appended definitions). The wetland's hydro-geomorphic classification (HGM) is predominately *surface slope* and *groundwater slope*.

The downgradient portion of the delineated resource is also a narrow fringe wooded swamp and associated intermittent watercourse, with poorly drained Raypol (12) soils, and similar hydrologic and hydro-geomorphic classifications. The watercourse flows enter this resource area via a 30-inch RCP under the access drive. Low flows were observed during the January 9th, 2018 site visit.

Typical vegetation observed within the regulated area included such species as red maple, gray birch, black birch, eastern hemlock, tree-of-heaven, multiflora rose, elderberry, witch-hazel, and ironwood. Due to the snow cover (i.e. 9-12 inches) only a few herbaceous species could be identified. These included Christmas fern, evergreen woodfern, soft rush, goldenrods, and grasses. Lianas included Asiatic bittersweet, poison ivy, and fox grape.

2.2.3 JMM B- Series: Wetland

This regulated area is located within the existing Christmas tree farm and north of the existing access drive. This regulated resource begins roughly 60 feet downgradient of the access driveway and extends downhill in a northerly direction (see Figure 2) (see photo 5). JMM-B-1 to JMM-B-2 and JMM-1B-1 to JMM-1B-2 demarcate this resource within the study area.

The soils identified within this area are the disturbed poorly drained Aquents (308w) mapping unit. Within the study area this resource is classified as a palustrine, broad-leaved scrub shrub (PSS1) wetland according the National Wetland Inventory (NWI) Classification system. The dominant hydrologic regime within this wetland is *seasonally saturated/seasonally flooded.* The wetland's hydro-geomorphic classification (HGM) is predominately *surface slope* and *groundwater slope*.

Typical vegetation observed within the regulated area included such species as silky dogwood, Morrow's honeysuckle, staghorn sumac, spicebush, multiflora rose, goldenrods, fox grape, and brambles, to name a few. Due to the snow cover (i.e. 9-12 inches)

observations of herbaceous species was limited. Most of the delineated wetland was found to be saturated to or near to the surface on the day of inspection (i.e. 1/9/18).

2.2.4 Other Regulated Resources

One potential wetland area was tentatively identified within the study area located near Woodland Street and just north of the access drive within an active agricultural field (see Figure 2). We estimate that the potential wetland boundary is approximately 25 feet and downgradient from the edge of the access driveway. Due to the snow cover and deep frost at the time of the site inspection, a formal wetland delineation was not possible. However, as soon as conditions allow delineation may be performed as needed.

As part of the investigations JMM also inspected portions of resources beyond the limits of the study area. This included the Roaring Brook riparian corridor as well as the Stab Gut Brook wetland/watercourse resource (see photos 6-7).

3.0 Non-Regulated Resource Areas

During our site visit JMM observed two non-regulated resources areas located along the existing access drive. These can be characterized as roadside ditches that convey surface flows from surrounding upland areas. Both of these were associated with the active farm operation.

4.0 Upland Resources

The upland resources observed during the JMM site visit on January 9th, 2018 included: (1) roadside thickets; (2) deciduous-evergreen forest; and (3) open grassy/sandy (i.e. sand & gravel pit). JMM staff scientists followed the marked alignment for the driveway that would lead to the proposed cell tower location, which leads from the existing access driveway to approximately 650 feet uphill through deciduous-evergreen forest. The forest overstory is dominated by oaks (white, black, red), American beech, black birch, hickories (shagbark, pignut), eastern hemlock, witch-hazel, and maple-leaved viburnum. Identification of lower strata species proved difficult due to snow cover (i.e., 9-12 inches) but included Christmas fern, grasses, and woodferns.

5.0 Soils of Study Area

The soil types within the study area were found to be both undisturbed and disturbed. Any disturbed soils were noted along the existing access drive and within the active gravel pit area. The undisturbed soils within the study area are derived from several glacial deposits including glacial till (i.e. unstratified sand, silt, and rock) and glaciofluvial (i.e., stratified sand and gravel) deposits. The undisturbed "upland type" soils are comprised of the well-drained and somewhat excessively drained Hollis-Chatfield (75) soil series complex, the excessively drained Manchester gravelly sandy loam (37) soil series, the somewhat excessively-drained Hartford sandy loam (33) soil series, and the moderately well drained Sutton (50) soil series.

Hollis fine sandy loam (75). This series consists of shallow, well drained and somewhat excessively drained; loamy soils formed in a thin mantle of friable glacial till over ledge. Depth to bedrock ranges from 10 to 20 inches. They occur on till plains and hills. The soils formed in acid glacial till derived mainly from schist, gneiss or granite. Typically, these soils have a surface layer of dark grayish brown fine sandy loam 3 inches thick. The subsoil from 3 to 14 inches is yellowish brown fine sandy loam. Hard and unweathered bedrock lies under the subsoil.

Chatfield loam (75). This series consists of moderately deep, well drained, and somewhat excessively drained soils formed in till. They are nearly level to very steep soils on glaciated plains, hills, and ridges. Slope ranges from 0 to 70 percent. Crystalline bedrock is at depths of 20 to 40 inches. Permeability is moderate or moderately rapid. In tilled areas, these soils have a surface layer that is very dark to dark grayish brown loam up to 8 inches thick. The subsoil from 8 to 26 inches is brown, flaggy silt loam.

Manchester gravely sandy loam (37). This series consists of very deep, excessively drained soils formed in a shallow, loamy sand mantle underlain by gravelly sand, water deposited glacial outwash materials. They are level to very steep soils on outwash plains, terraces, deltas, kames and eskers. The soils formed in loamy over stratified sandy and gravelly glacial outwash derived mainly from Triassic sandstone, shale, conglomerate and basalt. Typically these soils have a reddish brown gravelly sandy loam surface layer 6 inches thick. The subsoil layer from 6 to 16 inches is yellowish red gravelly sandy loam. The substratum from 16 to 60 inches is yellowish brown stratified sand and gravel.

Hartford sandy loam (33). The Hartford series consists of deep, somewhat excessively drained soils formed in a coarse-loamy mantle underlain by sandy water deposited glacial outwash materials. They are level to very steep soils on outwash plains and high stream terraces. The soils formed in loamy over stratified sandy and gravelly glacial outwash derived

mainly from Triassic sandstone, shale, conglomerate and basalt. Typically these soils have a dark brown sandy loam surface layer 9 inches thick. The upper part of the subsoil from 9 to 16 inches is yellowish red sandy loam. The lower part of the subsoil from 16 to 24 inches is reddish brown loamy sand. The substratum from 24 to 60 inches is reddish brown gravelly stratified sand and gravel.

Sutton stony fine sandy loam (50). This series consists of deep, moderately well drained loamy soils formed in friable, glacial till on uplands. They are nearly level to steeply sloping soils on till plains, low ridges and hills, being typically located on lower slopes and in slight depressions. The soils formed in acid glacial till derived mainly from schist, gneiss or granite. Typically, these soils have a surface layer of dark brown fine sandy loam 8 inches thick. The subsoil from 8 to 28 inches is yellowish brown, mottled fine sandy loam and sandy loam. The substratum from 28 to 60 inches or more is light olive brown fine sandy loam

The disturbed upland soils would be mapped as the Udorthents (308) mapping unit.

Udorthents (308). This soil mapping unit consists of well drained to moderately well drained soils that have been altered by cutting, filling, or grading. The areas either have had two feet or more of the upper part of the original soil removed or have more than two feet of fill material on top of the original soil. *Udorthents* or Made Land soils can be found on any soil parent material but are typically fluvial on glacial till plains and outwash plains and stream terraces.

The undisturbed "wetland-type" soils were identified as the poorly drained Raypol (12) soil series.

Raypol silt loam (12). This series consists of deep, poorly drained soils formed in a coarse-loamy mantle underlain by sandy water deposited glacial outwash materials. They are nearly level and gently sloping soils on outwash plains and high stream terraces. The soils formed in loamy over stratified sandy and gravelly glacial outwash derived mainly from acid rocks. Typically these soils have very dark brown, silt loam Ap horizons, grayish brown and dark yellowish brown, mottled, silt loam and very fine sandy loam B2 horizons over light olive brown, mottled gravelly sand IIC horizons at a depth of 29 inches.

Any disturbed wetland soils would be mapped as the Aquents (308w) mapping unit.

Aquents (308w). This soil map unit consists of poorly drained and very poorly drained disturbed land areas. They are most often found on landscapes, which have been subject to prior filling and/or excavation activities. In general, this soil map unit occurs where two or more feet of the original soil surface has been filled over, graded or excavated. The *Aquents* are characterized by a seasonal to prolonged high ground water table and either support or are capable of supporting wetland vegetation. *Aquents* are recently formed soils, which have

an aquic moisture regime. An aquic moisture regime is associated with a reducing soil environment that is virtually free of dissolved oxygen because the soil is saturated by groundwater or by water of the capillary fringe. The key feature is the presence of a ground water table at or very near to the soil surface for a period of fourteen days or longer during the growing season.

6.0 Proposed Activities

6.1 Overview

According to the submitted plans, prepared by Infinigy for Eco-Site, entitled "Glastonbury CT-0007," dated August 23rd, 2017, and revised through January 31st, 2018, the proposed new access drive to the telecommunications tower location begins at the existing access drive to the sand and gravel pit, and extends approximately 650 feet to the proposed tower compound.

This proposed gravel surface access driveway would be developed through existing maturing deciduous-evergreen forest on well drained to moderately well drained soils. The average proposed grade is estimated at 10% with the steepest being 12% at the intersection of the existing access drive and the proposed drive.

The plans show short retaining wall sections on both sides of the proposed 12-foot wide gravel access driveway, as it veers off the existing driveway. The maximum height of the retaining walls is four feet. Shallow swales are proposed on both sides of the access driveway to convey surface runoff down-gradient. On the east side of the proposed driveway just before its intersection with the existing driveway, rip rap armored swales are proposed on each side of the easterly retaining wall. These rip rap swales are approximately 75 feet in length, and will reduce flow velocities of surface runoff.

According to discussions with the project team members, the existing access driveway that extends from Woodland Street into the study site is of sufficient width and integrity to accommodate project needs both during construction and in the long-term. The proposed interconnection utilities are proposed below ground throughout, and will not necessitate direct impacts to regulated resources.

6.2 Direct Wetland Impacts

According to the reviewed plans, no *direct* wetland or watercourse impacts are being proposed for the project. The nearest edge of the project to regulated areas is in the vicinity of the JMM-A/1A series wetland. At this location underground utilities will be placed within the existing roadbed bypassing the wetlands and watercourse.

6.3 Indirect Wetland Impacts

Indirect or secondary impacts to a wetland or watercourse can occur as a result of activities outside of wetlands or watercourses. Such impacts can be *short-term* or *long-term*, and are typically associated with erosion and sedimentation, mostly during the construction period, the removal or disturbance of vegetation in upland areas but adjacent to wetlands or watercourses, the alteration of wetland hydrology or the flow regime of a watercourse, and the discharge of degraded surface water or groundwater, which may adversely impact the water quality of the regulated resources.

Based on our inventory of the regulated wetland/watercourse resources associated with this proposal, and the reviewed plans, long-term indirect impacts are unlikely. Potential short-term impacts would only be associated with the construction phase and relate to erosion and sedimentation. However, the project plans will comply with CT DEEP's 2002 *Connecticut Guidelines for Erosion and Sediment Control.* Therefore, no impacts are anticipated.

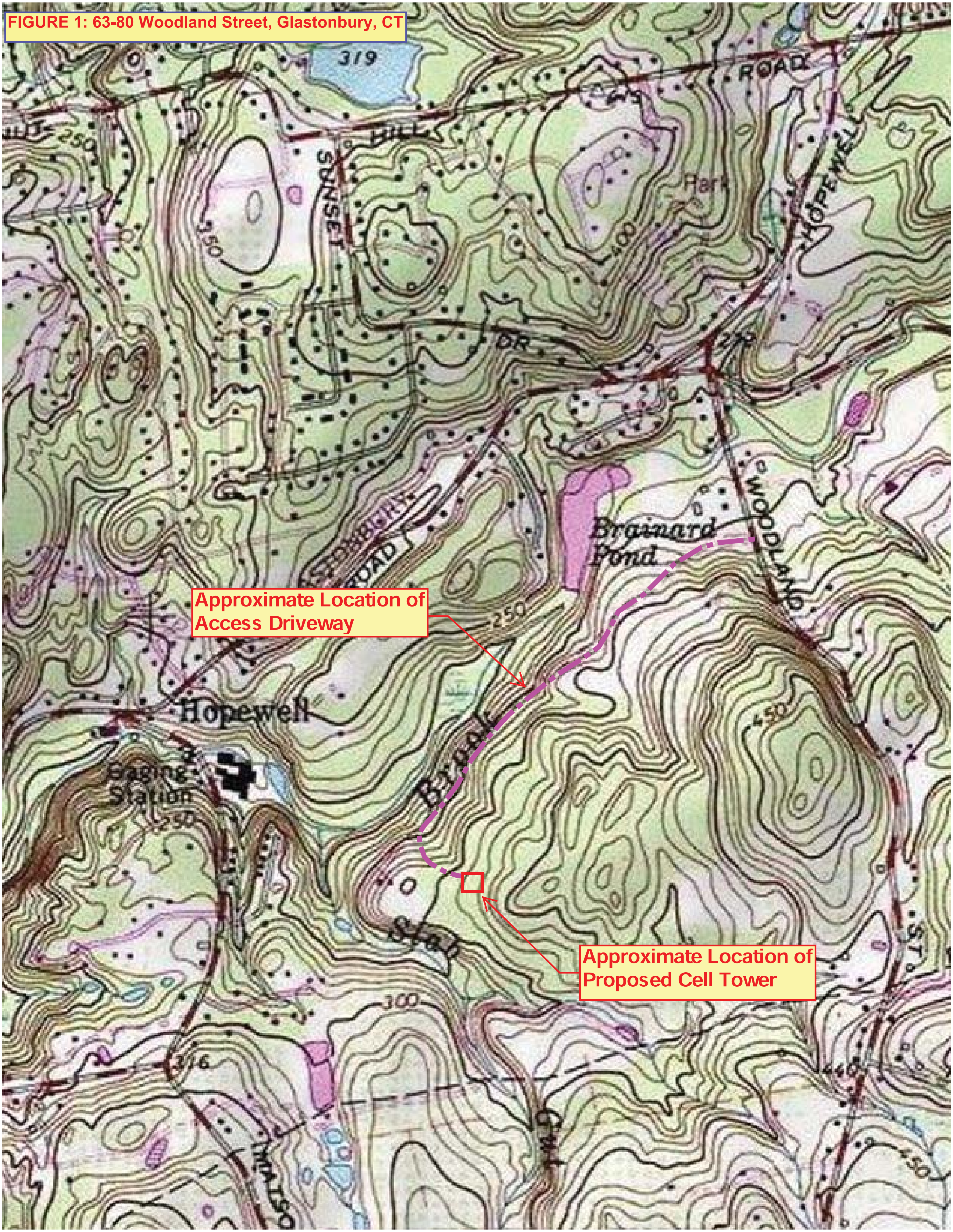
Respectfully submitted,

JMM WETLAND CONSULTING SERVICES, LLC

James M. McManus, MS, CPSS
Certified Professional Soil Scientist (No. 15226)

Attachments: Figures 1-2, Photos 1-8, NRCS CT-Web Soil Survey, Wetland Classification Definitions

FIGURE 1: 63-80 Woodland Street, Glastonbury, CT



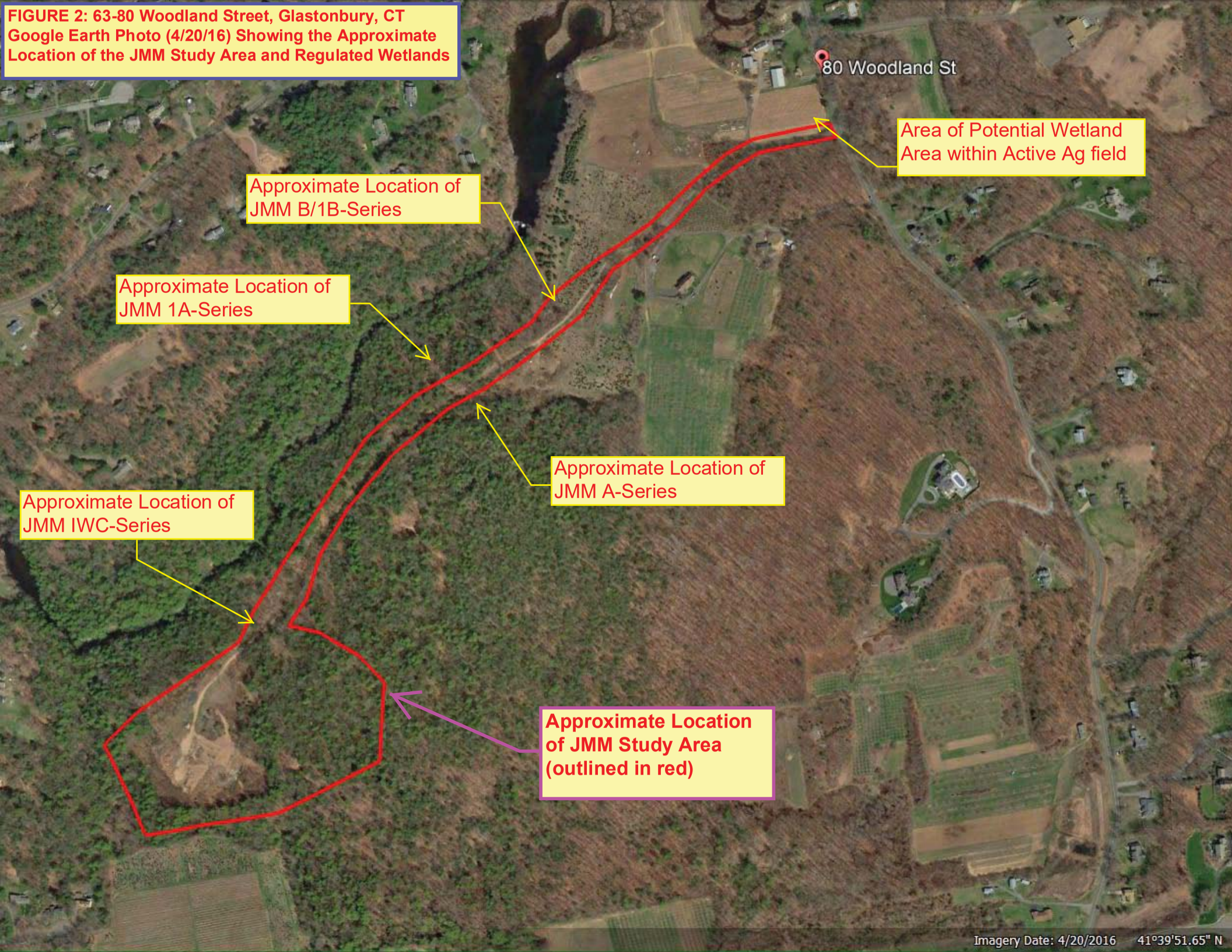


FIGURE 2: 63-80 Woodland Street, Glastonbury, CT
Google Earth Photo (4/20/16) Showing the Approximate Location of the JMM Study Area and Regulated Wetlands
80 Woodland St
Area of Potential Wetland Area within Active Ag field
Approximate Location of JMM B/1B-Series
Approximate Location of JMM 1A-Series
Approximate Location of JMM A-Series
Approximate Location of JMM IWC-Series
Approximate Location of JMM Study Area (outlined in red)
Imagery Date: 4/20/2016
41°39'51.65" N

Photo 1: View of intermittent watercourse (JMM-IWC) located on the west side of access drive (JMM photo taken 1/9/18); facing westerly

Photo 2: View of intermittent watercourse/12-inch RCP (JMM-IWC) (JMM photo taken 1/9/18); facing easterly

Photo 3: View of intermittent watercourse/30-inch RCP (JMM-1A-Series)
(JMM photo taken 1/9/17); facing southwesterly

Photo 4: View of intermittent watercourse/fringe wetland (JMM-1A-Series)
(JMM photo taken 1/9/17); facing northeasterly

Photo 5: View of JMM-B/1B-Series located north of access road (JMM photo taken 1/9/17); facing northwesterly

Photo 6: View of Roaring Brook located north/east outside of the JMM Study Area (JMM photo taken 1/9/18); facing northeasterly

Photo 7: View of Stab Gut Brook located southwest/west outside of the JMM Study Area (JMM photo taken 1/9/18); facing southwesterly

Photo 8: View of the approximate location of proposed tower (JMM photo taken 1/9/18); facing southeasterly

Soil Map—State of Connecticut
(63 - 80 Woodland Street, Glastonbury, CT)

Map Scale: 1:11,300 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 150 300 600 900

Feet: 0 500 1000 2000 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: State of Connecticut
Survey Area Data: Version 16, Sep 15, 2017

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2011—Apr 18, 2011

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

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
3	Ridgebury, Leicester, and Whitman soils, 0 to 8 percent slopes, extremely stony	12.6	2.0%
4	Leicester fine sandy loam	2.8	0.4%
12	Raypol silt loam	8.2	1.3%
13	Walpole sandy loam, 0 to 3 percent slopes	3.7	0.6%
21A	Ninigret and Tisbury soils, 0 to 5 percent slopes	3.3	0.5%
23A	Sudbury sandy loam, 0 to 5 percent slopes	4.7	0.8%
29B	Agawam fine sandy loam, 3 to 8 percent slopes	8.5	1.4%
33A	Hartford sandy loam, 0 to 3 percent slopes	31.5	5.1%
33B	Hartford sandy loam, 3 to 8 percent slopes	34.5	5.6%
36B	Windsor loamy sand, 3 to 8 percent slopes	0.8	0.1%
37C	Manchester gravelly sandy loam, 3 to 15 percent slopes	49.7	8.0%
37E	Manchester gravelly sandy loam, 15 to 45 percent slopes	133.4	21.6%
38C	Hinckley loamy sand, 3 to 15 percent slopes	5.5	0.9%
45A	Woodbridge fine sandy loam, 0 to 3 percent slopes	2.1	0.3%
45B	Woodbridge fine sandy loam, 3 to 8 percent slopes	0.9	0.1%
46B	Woodbridge fine sandy loam, 0 to 8 percent slopes, very stony	3.3	0.5%
57B	Gloucester gravelly sandy loam, 3 to 8 percent slopes	31.3	5.1%
57C	Gloucester gravelly sandy loam, 8 to 15 percent slopes	18.0	2.9%
58C	Gloucester gravelly sandy loam, 8 to 15 percent slopes, very stony	10.5	1.7%
62D	Canton and Charlton fine sandy loams, 15 to 35 percent slopes, extremely stony	4.0	0.6%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
73C	Charlton-Chatfield complex, 0 to 15 percent slopes, very rocky	37.9	6.1%
73E	Charlton-Chatfield complex, 15 to 45 percent slopes, very rocky	1.4	0.2%
75C	Hollis-Chatfield-Rock outcrop complex, 3 to 15 percent slopes	53.7	8.7%
75E	Hollis-Chatfield-Rock outcrop complex, 15 to 45 percent slopes	22.5	3.6%
76E	Rock outcrop-Hollis complex, 3 to 45 percent slopes	1.3	0.2%
84B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes	31.8	5.1%
84C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes	30.1	4.9%
85B	Paxton and Montauk fine sandy loams, 3 to 8 percent slopes, very stony	11.6	1.9%
85C	Paxton and Montauk fine sandy loams, 8 to 15 percent slopes, very stony	16.9	2.7%
86D	Paxton and Montauk fine sandy loams, 15 to 35 percent slopes, extremely stony	8.6	1.4%
108	Saco silt loam	3.8	0.6%
109	Fluvaquents-Udifluvents complex, frequently flooded	16.7	2.7%
306	Udorthents-Urban land complex	1.2	0.2%
307	Urban land	4.8	0.8%
308	Udorthents, smoothed	5.6	0.9%
W	Water	1.8	0.3%
Totals for Area of Interest		**618.7**	**100.0%**

WETLANDS: *The Physical Environment*

WETLAND HYDROGEOMORPHIC CLASSIFICATION

Surface-Water Depression Wetlands: In these wetlands, precipitation and overland flow (surface runoff) collect in a depression where there is little or no groundwater discharge. Water leaves the wetland principally by evaporotranspiration and infiltration (groundwater recharge). The wetland hydrologic system lies above the local or regional groundwater system and is isolated from it by an unsaturated zone; thus, it is said to be "perched." In the glaciated Northeast, surface-water depression wetlands are most likely to form over bedrock or till deposits in topographically elevated areas of landscape; however, they may develop in lowland kettles or ice-block basins that formed in glaciolacustrine or fine-textured glaciofluvial deposits.

Surface-Water Slope Wetlands: These wetlands are located along the edge of stream or lake or on the sloping surface of a floodplain. They may occur on till or stratified drift but are commonly found on alluvium. While precipitation and overland flow also feed these wetlands, the principal source of water is the overflow of the adjacent water body. The sloping surface of the wetland permits water to drain readily back to the lake or river as its stage falls. As was the case with the previous class, the wetland surface usually lies well above the local water table, so groundwater discharge to the wetland is negligible or nonexistent. Groundwater recharge from the wetland is possible, depending on the permeability of underlying surficial deposits.

Groundwater Depression Wetlands: These wetlands occur where a basin intercepts the local groundwater table, so that groundwater discharge as well as precipitation and overland flow feed the wetland. Classic groundwater depression wetlands have no surface drainage leaving the site; however, occasional streamflow out may occur form basin overflow. Groundwater inflow may be continuous or seasonal, depending upon the depth of the basin and the degree of fluctuation of the local water table. During periods when the wetland water level is higher than the local groundwater table (e.g., after major precipitation events in dry season), groundwater recharge may occur. Groundwater may enter the wetland basin from all directions, or it may discharge in one area and recharge in another. In the glaciated Northeast, groundwater depression wetlands are most likely to occur in stratified drift, particularly in coarse-textured glaciofluvial deposits where relatively rapid movement between groundwater and surface water can occur.

Groundwater Slope Wetlands: These wetlands occur where groundwater discharges as springs or seeps at the land surface and drains away as streamflow. Most commonly, these wetlands occur on hillsides over till deposits or at the base of hills where stratified drift and till come into contact. Headwater wetlands are typically groundwater slope wetlands. The local water table slopes toward the wetland surface. Where groundwater flow is continuous, the soil remains saturated. At many sites, however, groundwater inputs cease during late summer or early fall as evaporotranspiration depletes soil moisture in the root zone, in which case the soil is only seasonally saturated. Permanent ponding of water is prevented by the sloping land surface, but water may collect temporarily in isolated depressions. Precipitation and overland flow provide additional water to the wetland on an intermittent basis. Groundwater recharge may occur in the wetland after such events, but amounts are likely to be negligible, especially where wetland soils have formed over dense lodgment till deposits. Where such deposits are present, groundwater slope wetlands may be fed primarily by shallow groundwater systems perched above the regional system.

Reference:

Golet, C.G., A.J.K. Calhoun, W.R. DeRagon, D.J. Lowry, and A.J. Gold. 1993. Ecology of Red Maple Swamps in the Glaciated Northeast: A Community Profile. USFWS. Biological Report No. 12

WETLANDS: *The Physical Environment*

COMMON WATER REGIMES OF NORTHEASTERN WETLANDS

Seasonally flooded: Surface water is present for extended periods, especially early in the growing season, but is absent by the end of the season in most years. When surface water is absent, the water table is often near the land surface.

Temporarily flooded: Surface water is present for brief periods during the growing season, but the water table usually lies well below the soil surface for most of the season.

Seasonally saturated: The soil is saturated to the surface, especially early in the growing season, but unsaturated conditions prevail by the end of the season in most years. Surface water is absent except for groundwater seepage and overland flow.

Semi-permanently flooded: Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.

Permanently flooded: Water covers the land surface throughout the year in all years. Vegetation is composed of obligate hydrophytes.

Saturated: The substratum is saturated to the surface for extended periods during the growing season, but surface water is seldom present. This water regime applies to permanently saturated, non-flooded wetlands such as bogs.

References:

Golet, F. C., A. J. K. Calhoun, W. R. DeRagon, D. J. Lowry and A. J. Gold. 1993. Ecology of Red Maple Swamps in the Glaciated Northeast: A Community Profile. U. S. Dep. Int. Fish Wild. Serv. Biol. Rep. 12, 152 pp.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U. S. Fish Wild. Serv. Biol. Serv. Program FWS-OBS 79/31. 103 pp.

WETLANDS: *The Plant Community*

WETLAND CLASSES AND SUBCLASSES IN THE GLACIATED NORTHEAST

WETLAND CLASS	WETLAND SUBCLASS
Open Water	(OW-1) Vegetated (OW-2) Floating-leaved (OW-3) Non-vegetated
Deep Marsh	(DM-1) Dead Woody (DM-2) Shrub (DM-3) Sub-shrub (DM-4) Robust (DM-5) Narrow-leaved (DM-6) Broad-leaved
Shallow Marsh	(SM-1) Robust (SM-2) Narrow-leaved (SM-3) Broad-leaved
Meadow	(M-1) Ungrazed (M-2) Grazed
Shrub Swamp	(SS-1) Sapling (SS-2) Bushy (SS-3) Compact (SS-4) Aquatic
Wooded Swamp	(WS-1) Deciduous (WS-2) Evergreen
Bog	(BG-1A) Compact Shrub (BG-1B) Bushy Shrub (BG-2) Wooded (BG-3) Emergent

Note: Subclass (OW-2) has replaced (SM-4)
Seasonally Flooded Class (SF-1 & SF-2) has been removed

Reference:

Golet, F.C., and J.S. Larson. 1974. Classification of freshwater wetlands in the glaciated Northeast. USFWS Resour. Publ. 116. 56 pp.

WETLANDS: *The Physical Environment*

SOIL DRAINAGE CLASSES

Excessively drained: Brightly colored; usually coarse-textured; rapid permeability; very low water-holding capacity; subsoil free of mottles

Somewhat excessively drained: Brightly colored; rather sandy; rapid permeability; low water-holding capacity; subsoil free of mottles

Well drained: Color usually bright yellow, red, or brown; drain excess water readily, but contain sufficient fine material to provide adequate moisture for plant growth; subsoil is free of mottles to a depth of at least 36 inches.

Moderately well drained: Generally any texture, but internal drainage is restricted to some degree; mottles common in the lower part of the subsoil, generally at a depth of 18 to 36 inches; may remain wet and cold later in spring; generally suited for agricultural use.

Somewhat poorly drained: Remain wet for long periods of time due to slow removal of water; generally have a slowly permeable layer within the profile or a high water table; mottles common in the subsoil at a depth of 8 to 18 inches.

Poorly drained: Dark, thick surface horizons commonly; gray colors usually dominate subsoil; water table at or near the surface during a considerable part of the year; mottles frequently found within 8 inches of the soil surface.

Very poorly drained: Generally thick black surface horizons and gray subsoil; saturated by high water table most of the year; usually occur in level or depressed sites and are frequently ponded with water.

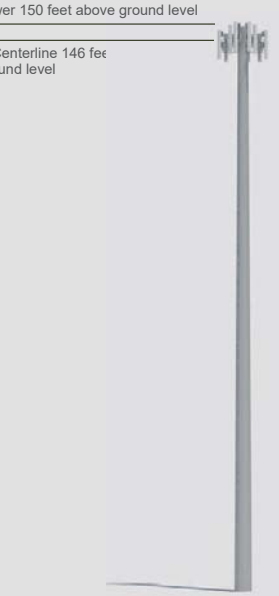
Reference:

Wright, W. R., and E. H. Sautter. 1979. Soils of Rhode Island landscapes. R.I. Agric Exp. Station Bull. 429. 42 pp.

ATTACHMENT 5

Photograph Information

Date:	January 11, 2017
Time:	10:46am
Focal Length:	53mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 38.60523' N 72° 33.88134' W
Distance:	1.32 Miles



The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Figure 3a

Existing Condition

VP01 - Crystal Ridge at cul-de-sac

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	10:46am
Focal Length:	53mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 38.60523' N 72° 33.88134' W
Distance:	1.32 Miles

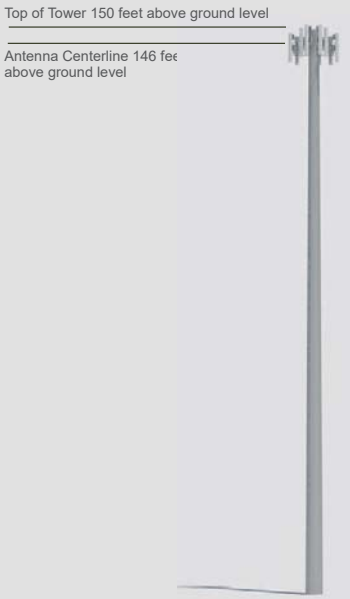


Figure 3b

Simulated Condition

VP01 - Crystal Ridge at cul-de-sac

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:03am
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 38.79978' N 72° 33.6558' W
Distance:	1.23 Miles

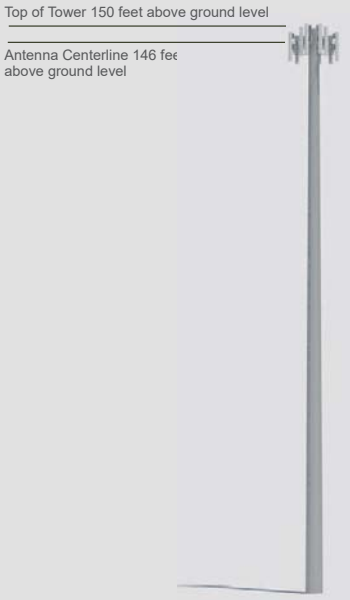


Figure 4a

Existing Condition

VP05 - Clark Hill Road (near #222)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:03am
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 38.79978' N 72° 33.6558' W
Distance:	1.23 Miles

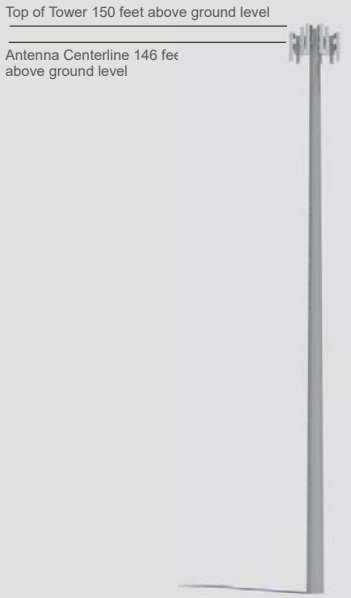


Figure 4b

Simulated Condition

VP05 - Clark Hill Road (near #222)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:09am
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.02958' N 72° 33.49908' W
Distance:	1.13 Miles

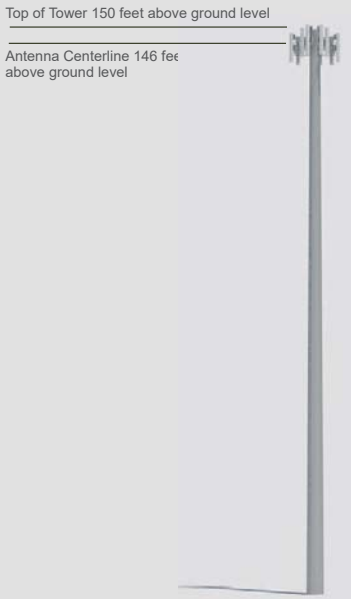


Figure 5a

Existing Condition

VP06 - Accornero Lane at cul-de-sac

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

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Photograph Information

Date:	January 11, 2017
Time:	11:09am
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.02958' N 72° 33.49908' W
Distance:	1.13 Miles

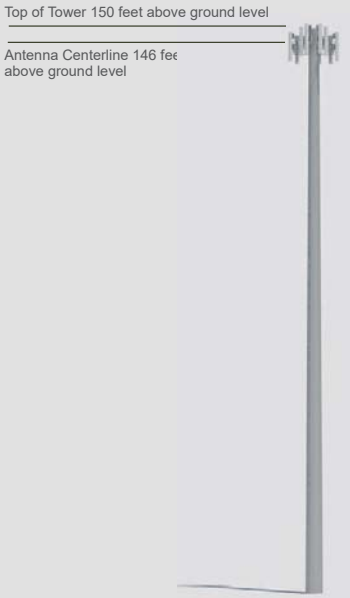

Figure 5b

Simulated Condition

VP06 - Accornero Lane at cul-de-sac

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:15am
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.23016' N 72° 33.81534' W
Distance:	4,100 Feet

Figure 6a

Existing Condition

VP07 - Clark Hill Road (near #51)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:15am
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.23016' N 72° 33.81534' W
Distance:	4,100 Feet

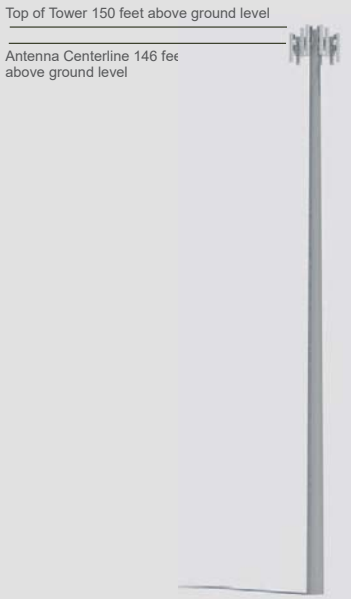

Figure 6b

Simulated Condition

VP07 - Clark Hill Road (near #51)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:27am
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 40.24116' N 72° 33.98952' W
Distance:	4,350 Feet

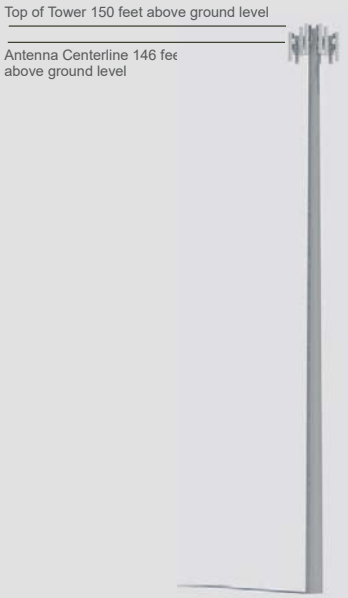

Figure 7a

Existing Condition

VP11- Woodland Street at Slab Cut Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:27am
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 40.24116' N 72° 33.98952' W
Distance:	4,350 Feet

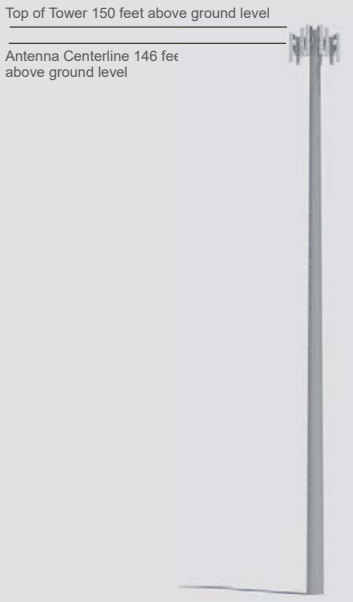

Figure 7b

Simulated Condition

VP11- Woodland Street at Slab Cut Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:56am
Focal Length:	47mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 40.12122' N 72° 35.16252' W
Distance:	4,100 Feet

Figure 8a

Existing Condition

VP16 - Leigh Gate (near #11)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	11:56am
Focal Length:	47mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 40.12122' N 72° 35.16252' W
Distance:	4,100 Feet

Figure 8b

Simulated Condition

VP16 - Leigh Gate (near #11)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:03pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.88338' N 72° 35.07012' W
Distance:	4,100 Feet

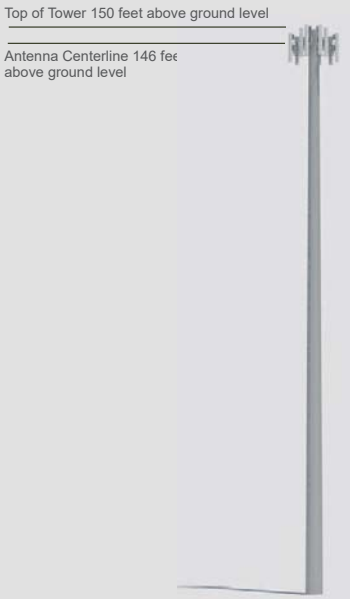

Figure 9a

Existing Condition

VP18 - Matson Hill Road at Roaring Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:03pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.88338' N 72° 35.07012' W
Distance:	4,100 Feet

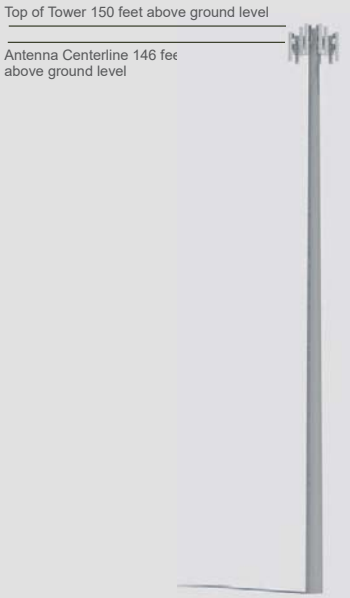

Figure 9b

Simulated Condition

VP18 - Matson Hill Road at Roaring Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:03pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.88338' N 72° 35.07012' W
Distance:	4,100 Feet

Figure 9c

Simulated Condition - Monopine Option

VP18 - Matson Hill Road at Roaring Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:03pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.88338' N 72° 35.07012' W
Distance:	4,100 Feet

Figure 9d

Simulated Condition - Faux Fire Tower Option

VP18 - Matson Hill Road at Roaring Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:03pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.88338' N 72° 35.07012' W
Distance:	4,100 Feet

Figure 9e

Simulated Condition - 195ft Faux Flag Pole Option (internally mounted antennas)

VP18 - Matson Hill Road at Roaring Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

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Time:	12:03pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.88338' N 72° 35.07012' W
Distance:	4,100 Feet

Figure 9e

Simulated Condition - 195ft Faux Flag Pole Option (externally mounted antennas)

VP18 - Matson Hill Road at Roaring Brook

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:12pm
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.63174' N 72° 34.94562' W
Distance:	1,950 Feet

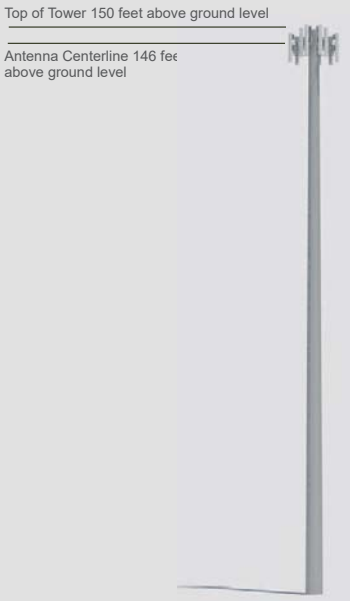

Figure 10a

Existing Condition

VP20 - Bittersweet Lane (near #30)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:12pm
Focal Length:	50mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.63174' N 72° 34.94562' W
Distance:	1,950 Feet

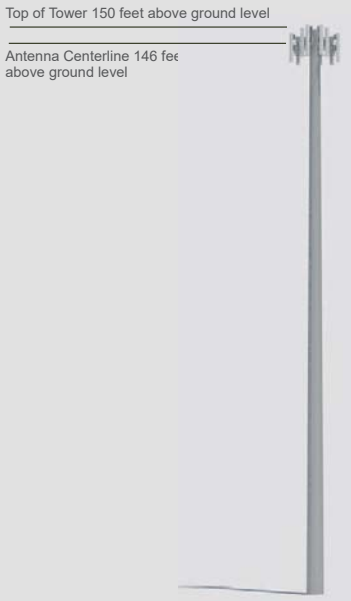

Figure 10b

Simulated Condition

VP20 - Bittersweet Lane (near #30)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:19pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.04962' N 72° 34.54398' W
Distance:	3,650 Feet

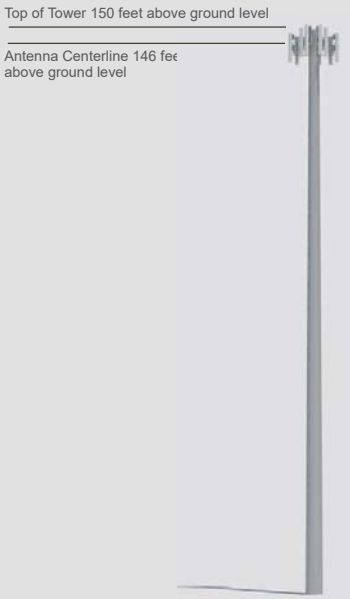

Figure 11a

Existing Condition

VP21 - Matson Hill Road (near #519)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:19pm
Focal Length:	48mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.04962' N 72° 34.54398' W
Distance:	3,650 Feet

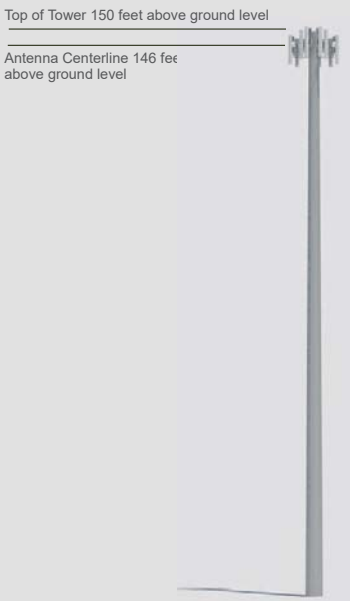

Figure 11b

Simulated Condition

VP21 - Matson Hill Road (near #519)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:38pm
Focal Length:	45mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.37302' N 72° 34.88088' W
Distance:	2,350 Feet

Figure 12a

Existing Condition
VP26 -Matson Hill Road (near #297)

SARATOGA ASSOCIATES

Visual Resource Assessment
ECO-SITE - GLASTONBURY
63-80 Woodland Street
Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:38pm
Focal Length:	45mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.37302' N 72° 34.88088' W
Distance:	2,350 Feet

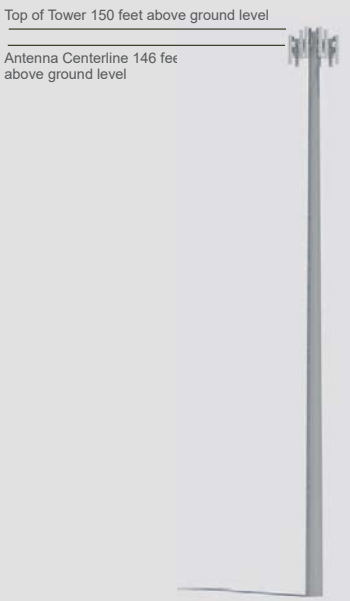

Figure 12b

Simulated Condition

VP26 -Matson Hill Road (near #297)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:38pm
Focal Length:	45mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.37302' N 72° 34.88088' W
Distance:	2,350 Feet

Figure 12c

Simulated Condition - Monopine Option

VP26 -Matson Hill Road (near #297)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:38pm
Focal Length:	45mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.37302' N 72° 34.88088' W
Distance:	2,350 Feet

Figure 12d

Simulated Condition - Faux Fire Tower Option

VP26 -Matson Hill Road (near #297)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

The above photograph is intended to be viewed 18 inches from the reader's eye when printed on 11"x17" paper.

Photograph Information

Date:	January 11, 2017
Time:	12:38pm
Focal Length:	45mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.37302' N 72° 34.88088' W
Distance:	2,350 Feet

Figure 12e

Simulated Condition - 195ft Faux Flag Pole Option (internally mounted antennas)

VP26 -Matson Hill Road (near #297)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073

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Photograph Information

Date:	January 11, 2017
Time:	12:38pm
Focal Length:	45mm (film equivalent)
Camera:	14.2mp Nikon D3100
Photo Location:	41° 39.37302' N 72° 34.88088' W
Distance:	2,350 Feet

Figure 12f

Simulated Condition - 195ft Faux Flag Pole Option (externally mounted antennas)

VP26 -Matson Hill Road (near #297)

SARATOGA ASSOCIATES

Visual Resource Assessment

ECO-SITE - GLASTONBURY

63-80 Woodland Street

Glastonbury, CT 06073