

## ATTACHMENT 4

ATTACHMENT 4(A)

## General Facility Description

23/25 Northwest Corner Road  
North Stonington, Connecticut  
Owner: Eric Berg  
13.23 & 86.2 Acre Parcels

The footprint of the proposed telecommunications facility is located in the central portion of an approximately 86 acre parcel owned by Eric Berg located at 25 Northwest Corner Road in North Stonington with access via 23 Northwest Corner Road. The proposed facility consists of a 75' x 75' compound within a 100' by 100' lease area. The proposed height of the new self-supporting monopole tower is 190' above grade level ("AGL").

AT&T will install up to twelve (12) panel antennas (centerline) at the 187' AGL height of the tower together with an associated 12'x 20' radio equipment shelter at the tower base on a concrete pad within the tower compound. The tower compound would consist of a 75' by 75' area to accommodate AT&T's equipment and provide for future shared use of the facility by other carriers. The tower compound would be enclosed by an 8' foot high chain link fence. Vehicle access to the facility would be provided using existing access via 23 Northwest Corner Road and then by a new gravel access drive approximately 380' in length. The existing access includes a conduit which would require temporary measures/improvements during site construction to include 10" to 12" of processed stone to be removed once construction is completed. The last approximately 500 feet +/- of the existing drive will also require some improvements to include a minimum of 4" of crushed stone surface over gravel base and drainage controls. Utility connections will be run underground from Northwest Corner Road.

## Site Evaluation Report

### I. LOCATION

- A. COORDINATES: 41° 29' 37" N 71° 54' 31" W
- B. GROUND ELEVATION: 400' AMSL
- C. SITE ADDRESS: 25 Northwest Corner Road, Connecticut (Access via 23 Northwest Corner Road)
- D. ZONING WITHIN 1/4 MILE OF SITE: Residential

### II. DESCRIPTION

- A. SITE SIZE: 75' by 75' compound
- B. LESSOR'S PARCEL: 23 NW Corner Road is 13.23 Acres, 25 NW Corner Road is 86.2 Acres
- C. TOWER TYPE/HEIGHT: Monopole/190' AGL
- D. SITE TOPOGRAPHY AND SURFACE: The proposed tower and associated compound are near the top of a slope leading up from Mountain Avenue.
- E. SURROUNDING TERRAIN, VEGETATION, WETLANDS, OR WATER: The surrounding terrain is characterized by rolling hills with ground elevations ranging from 170' AMSL to approximately 534' AMSL. A review of the site together with available site information provided by Federal, State and local databases indicates that the nearest wetlands are 350' distant from the proposed facility and access drive. No activity is proposed near or directly within the delineated area for this wetland. Site access utilizes an existing culvert crossing.
- G. LAND USE WITHIN 1/4 MILE OF SITE: General land use activities directly surrounding the subject parcel include residential uses, wooded and undeveloped land, and various roads and highways, including Route 201.

### III. FACILITIES

- A. POWER COMPANY: Connecticut Light and Power
- B. POWER PROXIMITY TO SITE: Electric power will be available for use from Mountain Avenue.
- C. TELEPHONE COMPANY: AT&T
- D. PHONE SERVICE PROXIMITY: Telephone facilities/service will be available from Northwest Corner Road.
- E. VEHICLE ACCESS TO SITE: Access to the facility would be provided by an existing drive and a new gravel access driveway approximately 500' in length

F. OBSTRUCTIONS: None

G. CLEARING AND FILL REQUIRED: The facility would require the removal of 15-25 trees above 6" DBH and some clearing of brush. Some rock removal will be required. Detailed plans would be included in a Development and Management Plan ("D&M" plan) after any approval of the facility which may be issued by the Connecticut Siting Council.

IV. LEGAL

A. PURCHASE [ ] LEASE [ X ]

B. OWNER: Eric Berg

C. ADDRESS: 23/25 Northwest Corner Road, North Stonington, Connecticut

## Facilities and Equipment Specification

### I. TOWER SPECIFICATIONS:

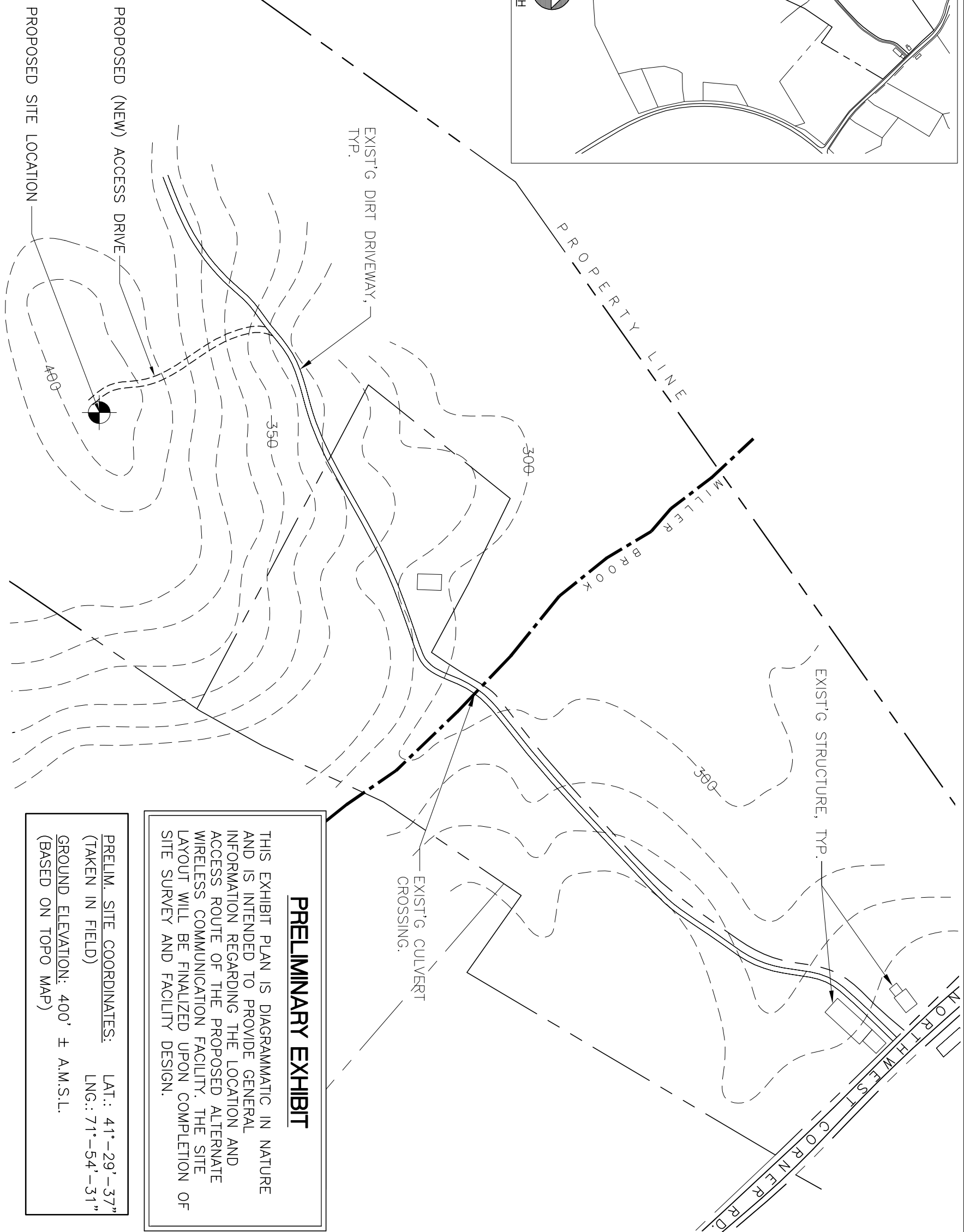
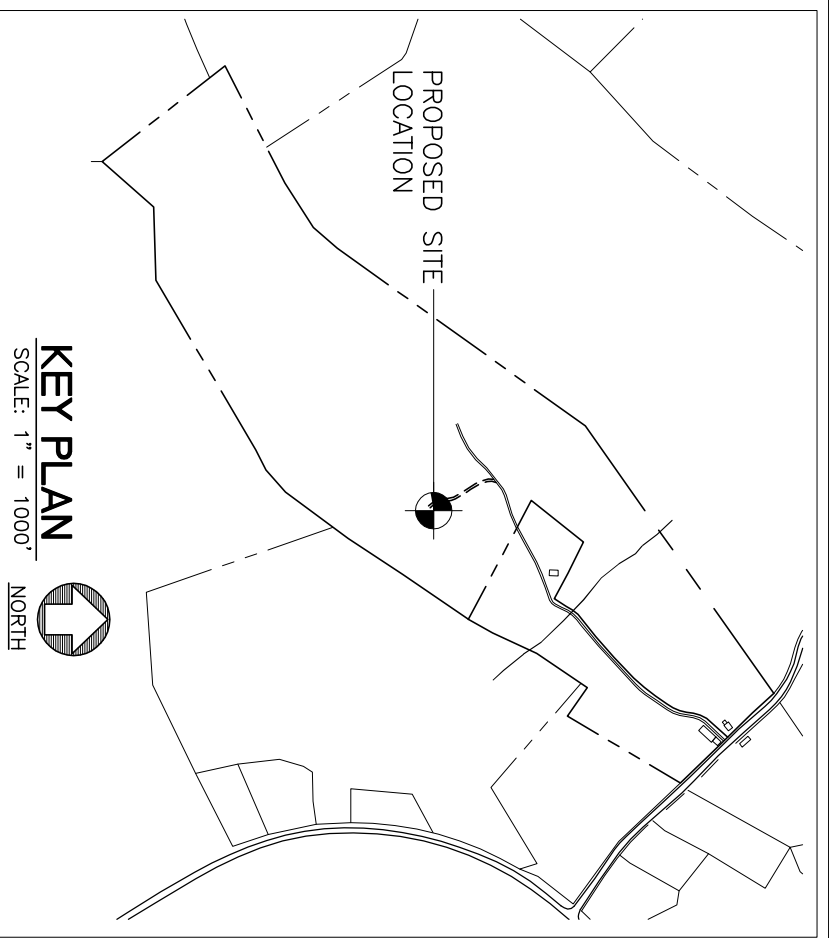
- A. MANUFACTURER: To be determined
- B. TYPE: Self-Supporting monopole
- C. HEIGHT: 190' AGL  
DIMENSIONS: Approximately 5' in diameter at the base, tapering to approximately 2' at the top.
- D. LIGHTING: None as set forth in attached TOWAIR report

### II. TOWER LOADING:

- A. AT&T – up to 12 panel Antennas, along with up to 12 TMA/Diplexers
  - a. Model – Powerwave P90-14-XLH-RR or equivalent panel antenna
  - b. Antenna Dimensions – approximately 48”H x 12”W x 6”D
  - c. Position on Tower – 187' centerline AGL and below
  - d. Transmission Lines – MFG/Model: Commscope Aluminum; Size 1-5/8”
- B. Future Carriers – To be determined

### III. ENGINEERING ANALYSIS AND CERTIFICATION:

The tower will be designed in accordance with American National Standards Institute TIA/EIA-222-G “Structural Standards for Steel Antenna Towers and Antenna Support Structures” and the 2003 International Building Code with 2005 Connecticut Amendment. The foundation design would be based on soil conditions at the site. The details of the tower and foundation design will be provided as part of the final D&M plan.



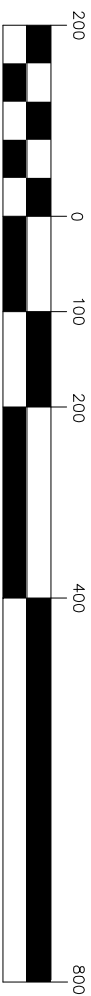
**PRELIMINARY EXHIBIT**

THIS EXHIBIT PLAN IS DIAGRAMMATIC IN NATURE AND IS INTENDED TO PROVIDE GENERAL INFORMATION REGARDING THE LOCATION AND ACCESS ROUTE OF THE PROPOSED ALTERNATE WIRELESS COMMUNICATION FACILITY. THE SITE LAYOUT WILL BE FINALIZED UPON COMPLETION OF SITE SURVEY AND FACILITY DESIGN.

**PRELIM. SITE COORDINATES:** LAT.: 41°-29'-37"  
(TAKEN IN FIELD) LNG.: 71°-54'-31"

**GROUND ELEVATION:** 400' ± A.M.S.L.  
(BASED ON TOPO MAP)

GRAPHIC SCALE



**1 PARTIAL SITE PLAN**  
EX-1 SCALE: 1" = 200'

TOPO REFERENCE:  
TOPOGRAPHIC CONTOURS SHOWN ARE REFERENCED FROM USGS MAPPING.

DESIGNED BY:	DMD			
DRAWN BY:	DMD			
CHK'D BY:	CFC			
REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
A	04/14/11	DMD	CFC	PRELIMINARY EXHIBIT - ALTERNATE SITE 1

PROFESSIONAL ENGINEER SEAL

**CEN TEK engineering**  
Centered on Solutions™  
www.CentekEng.com  
(203) 488-0580  
(203) 488-8587 Fax  
63-2 North Branford Road, Branford, CT 06405

**SBA TOWERS III LLC.**  
**N. STONINGTON 3**  
ALTERNATE SITE - 1  
23 / 25 NORTHWEST CORNER ROAD  
STONINGTON, CT

DATE: 03/28/11  
SCALE: AS SHOWN  
JOB NO. 10123

SHEET NO.  
**EX-1**

ATTACHMENT 4(B)



## Environmental Assessment Statement

### I. PHYSICAL IMPACT

#### A. WATER FLOW AND QUALITY

No water flow and/or water quality changes are anticipated as a result of the construction or operation of the proposed facility. The construction and operation of the tower and related site improvements will have minimal to no effect on any wetlands, watercourses or water bodies, and the equipment associated with the facility will discharge no pollutants to area surface or groundwater systems. The distance from the proposed project where ground disturbance would occur to the nearest wetland is 350', with no activity occurring directly within the delineated wetland area. Thus, the proposed project will not directly impact any wetland's hydrologic functional role. Moreover, Best Management Practices to control storm water and soil erosion during construction will be implemented.

#### B. AIR QUALITY

Under ordinary operating conditions, the equipment that would be used at the proposed facility would emit no air pollutants of any kind. A generator for emergency power is proposed which will have de minimus emissions associated with its operation.

#### C. LAND

Some minimal clearing and grading may be necessary in the compound area and access drive. The remaining land of the lessor would remain unchanged by the construction and operation of the facility.

#### D. NOISE

The equipment to be in operation at the facility would not emit noise other than that provided by the operation of the installed heating, air-conditioning and ventilation system. Some construction related noise would be anticipated during facility construction, which is expected to take approximately four to six weeks. Temporary power outages could involve sound from an emergency generator.

#### E. POWER DENSITY

The cumulative worst-case calculation of power density from AT&T's operations at the facility would be 3.5% of the MPE standard. Attached is a copy of a Power Density Report indicating same.

#### F. VISIBILITY

The potential visual impact of the proposed monopole was determined by preparation of the attached Visual Analysis Report. The potential visibility was assessed within an approximate two (2) mile radius using a computer-based, predictive view shed model and in-field visual analysis. The monopole would be visible to approximately 30 acres within the 8,042-acre study area. The majority of year-round views would occur over open water and along their immediate shorelines. No views are anticipated from the portion of the Narragansett Trail within the Study Area.






















### II. SCENIC, NATURAL, HISTORIC & RECREATIONAL VALUES

The parcel on which the facility is located and immediate surrounding areas exhibit no scenic, natural, historic or recreational characteristics which are unique. The Connecticut State Historic Preservation Officer ("SHPO") will be reviewing the site. The Connecticut Department of Environmental Protection ("CTDEP") Natural Diversity Database ("NDDB") maps for the proposed site have been reviewed and indicate that no threatened or endangered species are known nearby and accordingly no impact on these species is anticipated.

# Environmental Constraints Map

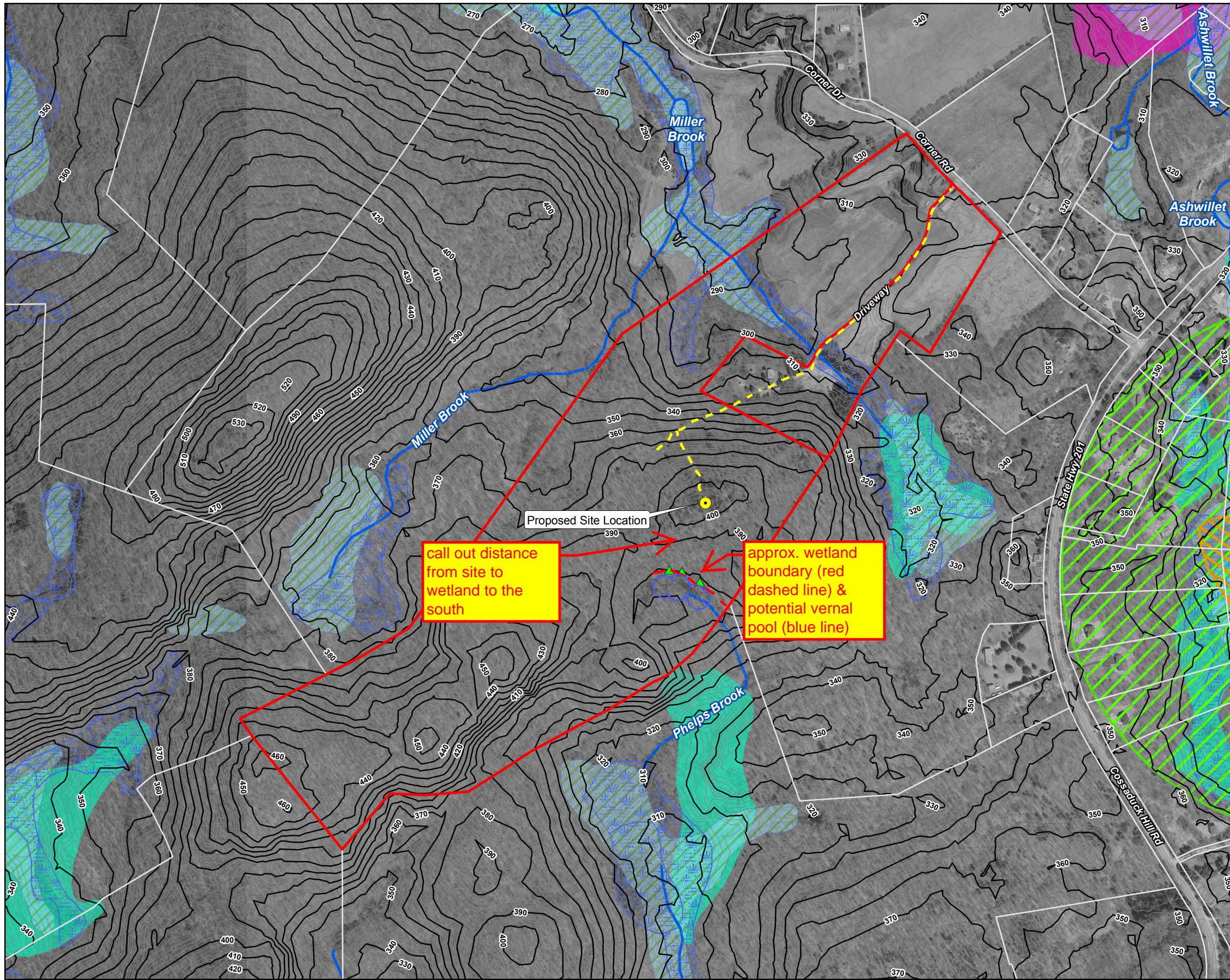
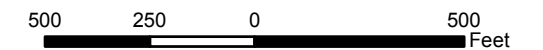
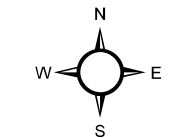
Potential Alternate Site Location 3  
23 Northwest Corner Road  
North Stonington, Connecticut

## Legend

-  Proposed Site Location
-  Wetland Flags
-  Proposed Access Road
-  Approximate Site Property Boundary
-  Assessor Parcel Boundary
-  Contours (10-foot)
-  Contours (2-foot)
-  Aquifer Protection Area (CTDEP, 10/2009)\*
-  Critical Habitat (CTDEP, 12/2009)
-  Natural Diversity Database Areas (CTDEP, 12/2010)
-  Wetlands (CTDEP, 2005)
-  Federal Open Space (CTDEP, 2004)\*
-  Municipal & Private Open Space (CTDEP, 1997)\*
-  Protected Open Space (CTDEP, 12/2009)\*
-  CTDEP Property (CTDEP, 12/2010)\*
-  Town Line
-  Open Water
-  National Wetland Inventory Wetlands
- FEMA Flood Zone**
-  100 Year Flood Zone
-  500 Year Flood Zone
-  Floodway in Zone AE
-  Other Flood Areas

\*None in mapped area

Base Map Source: 2004 aerial photograph with 0.5-foot resolution.



call out distance from site to wetland to the south

approx. wetland boundary (red dashed line) & potential vernal pool (blue line)

# TOWAIR Determination Results

## \*\*\* NOTICE \*\*\*

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

### DETERMINATION Results

**Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.**

### Your Specifications

#### NAD83 Coordinates

Latitude	41-29-37.0 north
Longitude	071-54-31.0 west

#### Measurements (Meters)

Overall Structure Height (AGL)	57.9
Support Structure Height (AGL)	NaN
Site Elevation (AMSL)	121.9

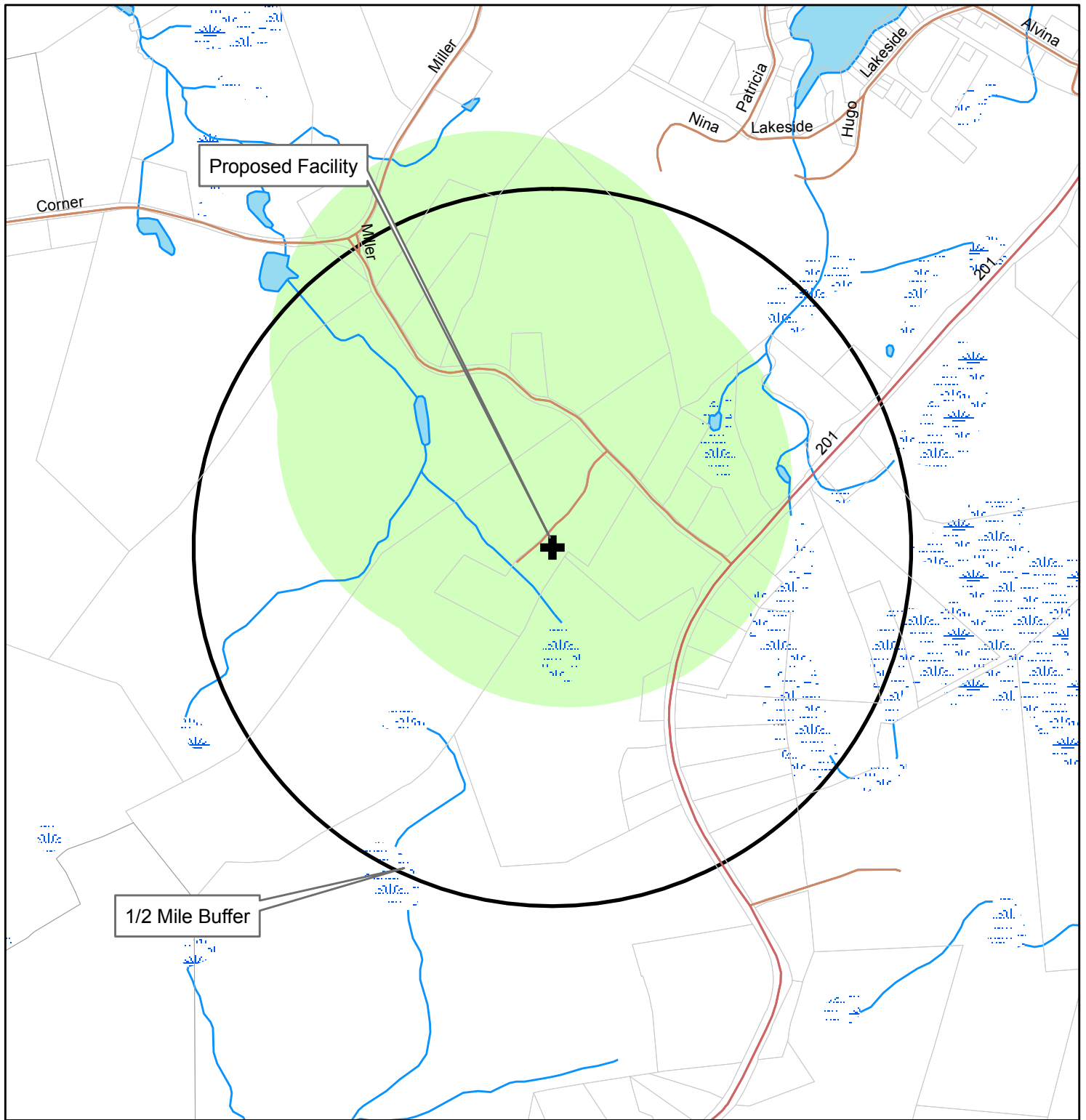
#### Structure Type

TOWER - Free standing or Guyed Structure used for Communications Purposes

### [Tower Construction Notifications](#)

Notify Tribes and Historic Preservation Officers of your plans to build a tower.

CLOSE WINDOW

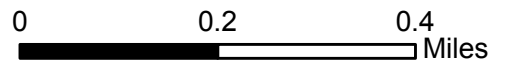


**Legend**

- Proposed Facility
- National Register (points)
- National Register (polygon)
- Scenic Highways (CT)
- Reported Archaeological Sites
- 1/2 Mile Buffer
- Primary US and State Highways
- Secondary State and County Highway
- Freeway ramp
- Local or Rural Road
- Water
- Marsh on Quad

**Vanasse Hangen Brustlin, Inc.**

Cultural Resources Screen  
 PROPOSED WIRELESS FACILITY  
 23 NORTHWEST CORNER RD  
 NORTH STONINGTON, CONNECTICUT  
 APRIL 25, 2011  
 USGS QUAD: JEWETT CITY



Tony Wells  
 C Squared Systems  
 65 Dartmouth Drive, Unit A3  
 Auburn, NH 03032  
 603-644-2800  
 Tony.Wells@csquaredsystems.com



June 17, 2011

Connecticut Siting Council

Subject: New Cingular Wireless, North Stonington, CT

Dear Connecticut Siting Council:

C Squared Systems has been retained by New Cingular Wireless to investigate the RF Power Density at the proposed site located in North Stonington, CT.

Calculations were done in accordance with FCC OET Bulletin 65. These worst-case calculations assume that all transmitters are simultaneously operating at full power and pointing directly at the ground. The calculation point is 6 feet above ground level to model the RF power density at the head of a person standing at the base of the tower.

Location	Carrier	Antenna Centerline Height Above Ground Level (Ft.)	Operating Frequency (MHz)	Number of Trans.	Effective Radiated Power (ERP) Per Transmitter (Watts)	Power Density (mw/cm <sup>2</sup> )	Limit	% FCC MPE Limit General Public/Uncontrolled
Ground Level	AT&T UMTS	190	880	1	500	0.0053	0.5867	0.91%
	AT&T UMTS	190	1900	1	500	0.0053	1.0000	0.53%
	AT&T GSM	190	880	3	296	0.0094	0.5867	1.61%
	AT&T GSM	190	1900	1	427	0.0045	1.0000	0.45%
	<b>Total</b>							

**Summary:** Under worst-case assumptions, the RF Power Density at the proposed site located in North Stonington, CT will not exceed 3.50% of the FCC MPE limit for General Public/Uncontrolled Environments.

Sincerely,

Anthony Wells  
 Managing Partner

ATTACHMENT 4(C)

# *Proposed Wireless Telecommunications Facility*

North Stonington 3  
25 Northwest Corner Road  
North Stonington, Connecticut

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Prepared for



Prepared by **VHB/Vanasse Hangen Brustlin, Inc.**  
54 Tuttle Place  
Middletown, CT 06457

June 2011



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## Visual Resource Evaluation

SBA Towers III LLC seeks approval from the Connecticut Siting Council for a Certificate of Environmental Compatibility and Public Need to construct a wireless telecommunications facility (“Facility”) to be located on property at 25 Northwest Corner Road (“host property”) in the town of North Stonington, Connecticut. This Visual Resource Evaluation was conducted to approximate the visibility of the proposed Facility within a two-mile radius of the Site (“Study Area”). The northern portion of the Study Area includes land located within the neighboring towns of Preston and Griswold, Connecticut. Attachment A contains a map that depicts the location of the proposed Facility and the limits of the Study Area.

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## Project Introduction

The proposed Facility includes the installation of a 190-foot tall monopole tower with associated ground equipment to be located at its base. Both the monopole and ground equipment would be situated within a fence-enclosed compound. The proposed Facility would be located at a ground elevation of approximately 407 feet Above Mean Sea Level (AMSL). Access to the Facility would initially follow an existing dirt driveway currently located on the host property (to be improved) then follow an existing woods road adjacent to the proposed compound area (also to be improved).

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## Site Description and Setting

The host property is comprised of two adjoining parcels that are identified in the Town of North Stonington Tax Assessor’s records as Map 2734/ Block 12/Lot 3697 and Map 2734/ Block 01/Lot 2831. The lots measure approximately 13.23 acres and 86.20 acres, respectively. The proposed compound area would be centrally located on Lot 2831, which is mainly wooded and undeveloped, while most of the proposed access drive would be located on Lot 3697 which is mainly comprised of open, agricultural land and is currently occupied by a single-family residential dwelling situated roughly 700 feet to the northeast of the proposed Facility. Land use within general vicinity of the proposed Facility consists primarily of agricultural land, undeveloped woodlands (including State Forest land) and low-density residential development. In total, the Study Area features approximately 31 linear miles of roadways, including segments of Route 2 and Route 201.

The topography within the Study Area is generally characterized by gently rolling hills with ground elevations that range from approximately 290 feet AMSL to approximately 537 feet AMSL. The Study Area contains nearly 200 acres of surface water, which includes Andersons Pond located approximately 0.93-mile to the northeast of the proposed Facility; portions of Wyassup Lake located approximately 1.68-mile to the southeast; portions of Billings Lake located roughly 1.70-mile to the northeast; and portions of Lake of Isles located approximately 1.77-mile to the southwest. The tree cover within the Study Area consists mainly of mixed deciduous hardwood species interspersed with stands of mature evergreen species that occupy approximately 7,022 acres of the 8,042-acre study area (87%). The

average tree canopy height throughout the Study Area was determined to be approximately 65 feet.



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## METHODOLOGY

To evaluate the visibility associated with the proposed Facility, VHB used the combination of a predictive computer model and in-field analysis. The predictive model provided a preliminary assessment of potential visibility throughout the entire study area, including private property and other areas inaccessible for direct observations. A “balloon float” and Study Area reconnaissance were subsequently conducted for field verification to back-check the initial computer modeling results, to obtain location and height representations, and to provide photographic documentation from publicly accessible areas. A description of the procedures used in the analysis is provided below.

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### Visibility Analysis

VHB uses ArcGIS® Spatial Analyst, a computer modeling tool developed by Environmental Systems Research Institute, Inc., to calculate the areas from which at least the top of the proposed Facility is expected to be visible. Project- and Study Area-specific data were incorporated into the computer model, including Facility height, its ground elevation, underlying and surrounding topography and existing vegetation. Information used in the model included Connecticut LiDAR<sup>1</sup>-based digital elevation data and model and a digital forest (or tree canopy) layer developed for the Study Area. The LiDAR-based Digital Elevation Model (DEM) represents ten-foot spatial resolution elevation information for the state of Connecticut that was derived through the spatial interpolation of airborne LiDAR-based data collected in the year 2000 and has a horizontal resolution of ten (10) feet. The data was edited in 2007 and made available by the University of Connecticut through its Center for Land Use Education and Research (CLEAR). To create the forest layer, mature trees and woodland areas depicted on aerial photographs (ranging in dates from 2004 to 2008) were manually digitized (hand traced) in ArcGIS®, creating a geographic data layer for inclusion in the computer model. The black and white, digital aerial photographs, obtained from the Connecticut Department of Transportation, were flown in the spring of 2004 and selected for use in this analysis because of their image quality and depiction of pre-leaf emergence (i.e., “leaf-off”) conditions. These photographs are half-foot pixel resolution. The more recent aerial photographs (2006 and 2008) were overlaid and evaluated to identify any new development resulting in the removal of trees.

Once the specific data layers were entered, the ArcGIS® Spatial Analyst Viewshed tool was applied to achieve an estimate of locations where the proposed Facility could be visible. First, only topography was used as a possible visual constraint; the tree canopy was omitted to evaluate potential visibility with no intervening vegetative screening. The initial omission

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<sup>1</sup> LiDAR is an acronym for Light Detection and Ranging. It is a technology that utilized lasers to determine the distance to an object or surface. LiDAR is similar to radar, but incorporates laser pulses rather than sound waves. It measures the time delay between transmission and reflection of the laser pulse.

of this data layer resulted in an excessively conservative prediction, but it provided an opportunity to identify areas within potential direct lines of sight of the Facility. The forest data layer was then overlaid and built into the DEM, using a conservative average tree canopy height of 50 feet, to establish a baseline assessment of intervening vegetation. The resultant preliminary viewshed map was used during the in-field activities (described further below) to compare the outcome of the initial computer modeling with observations of the balloon float to identify deviations. Information obtained from the field reconnaissance was ultimately incorporated into the model to refine the viewshed map.

The average tree canopy height, in this case 65 feet, was determined based on information collected in the field using a combination of a hand-held laser range finder and comparative observations. The revised average tree canopy height of 65 feet was then incorporated into the model and the results displayed on the viewshed map. The forested areas were overlaid on the DEM with a height of 65 feet added to the base elevation and the visibility within the Study Area calculated.

As a final step, the forested areas were extracted from the areas of visibility, using a conservative assumption that a person standing within the forest will not be able to view the proposed Facility beyond a distance of approximately 500 feet. Depending on the density of the intervening tree canopy and understory of the surrounding woodlands, it is assumed that some locations within this distance could provide visibility of at least portions of the proposed Facility at any time of the year. In "leaf-on" conditions, this distance may be overly conservative for most locations. However, for purposes of this analysis, it was reasoned that forested land beyond 500 feet of the proposed Facility would consist of light-impenetrable trees of a uniform height.

Also included on the map is a data layer, obtained from the State of Connecticut Department of Environmental Protection ("CTDEP"), which depicts various land and water resources such as parks and forests, recreational facilities, dedicated open space, CTDEP boat launches and other categories. Included within the Study Area are portions of Pachaug State Forest and Narragansett Trail, part of the Connecticut Blue Blaze trail system. Lastly, based on both a review of published information and discussions with municipal officials in North Stonington it was determined that there are no locally- or state-designated scenic roadways located within the Study Area.

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## Balloon Float and Study Area Reconnaissance

On May 24, 2011 Vanasse Hangen Brustlin Inc., (VHB) conducted a balloon float to further evaluate the potential viewshed within the Study Area. The balloon float consisted of raising and maintaining a red, ± four-foot diameter, helium-filled balloon at the proposed site location at a height of 190 feet. Once the balloon was secured, VHB staff conducted a drive-by reconnaissance along the roads located within the Study Area with an emphasis on nearby residential areas and other potential sensitive receptors in order to evaluate the results of the preliminary viewshed map and to document where the balloon was, and was not, visible above and/or through the tree canopy. VHB staff also paddled portions of Andersons Pond

as part of the field reconnaissance. During the balloon float, the temperature was approximately 75 degrees Fahrenheit with sunny skies and calm winds.

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## Photographic Documentation

During the balloon float, VHB personnel drove the public road system within the Study Area (and paddled portions of Andersons Pond as noted previously) to inventory those areas where the balloon was and was not visible. The balloon was photographed from three different publically accessible vantage points to document the actual view towards the proposed Facility. Several locations where the balloon was not visible are also included. The locations of the photos are described below:

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View	Location	Orientation	Dist. To Site	Visibility
1	Northwest Corner Road at host property	Southwest	± 0.38-Mile	Year-Round
2	Northwest Corner Road	South	± 0.42-Mile	Year-Round
3	Adjacent to #96 Northwest Corner Road	Southeast	± 0.65-Mile	Year-Round
4	Miller Road	South	± 0.76-Mile	Not Visible
5	Northwest Corner Road	Southwest	± 0.40-Mile	Not Visible
6	Adjacent to #167 Route 201	Northwest	± 0.76-Mile	Not Visible
7	Adjacent to #247 Route 201	Northwest	± 0.34-Mile	Not Visible
8	Adjacent to #300 Route 201	Southwest	± 0.60-Mile	Not Visible

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Photographs of the balloon from the view points listed above were taken with a Nikon D-3000 digital camera body equipped with a Nikon 18-135 mm zoom lens. For the purposes of this analysis, a lens setting of 50 mm was utilized to obtain views of the balloon from all but one of the photographic locations listed above, "The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm."<sup>2</sup>

The locations of the photographic points are recorded in the field using a GPS-enabled tablet computer and were subsequently plotted on the maps contained in the attachments to this document.

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<sup>2</sup> Warren, Bruce. *Photography*, West Publishing Company, Eagan, MN, c. 1993, (page 70).

Note: Focal lengths ranging from 17 mm to 50 mm can approximate views similar to that achieved from the unaided human eye. Two key factors to consider when determining what specific focal length to use to best represent "real world" conditions is field of view and relation of sizes between objects in the frame. A 17 mm focal length has a wider field of view, which is more representative of the overall extent (including peripheral vision) that the human eye typically sees. At this focal length, relation of sizes between objects is skewed and not entirely accurate to what the human eye experiences. A 50 mm focal length has a narrower field of view than that of the human eye; however, the relation of sizes between objects is more representative to that of what the human eye perceives. When producing photographic simulations, VHB has chosen to use a 50 mm focal length whenever possible. For presentation purposes, such as in this report, the photographs are produced and viewed in an approximate 6.5" by 9.5" format. VHB has determined that when viewing a proposed facility at this format size, it is important to provide the largest representational image while maintaining an accurate relation of sizes between objects within the frame of the photograph.

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## Photographic Simulation

Photographic simulations were generated for the representative locations where the balloon was visible during the in-field activities. The photographic simulations portray a scaled rendering of the proposed Facility from these locations, with four wireless service providers represented. Using field data, site plan information and 3-dimension (3D) modeling software, a spatially referenced model of the site area was generated. Geographic coordinates (latitude and longitude) were collected in the field for all of the photograph locations via GPS and later used to generate virtual camera positions within the spatial 3D model. Photo simulations were then created using a combination of renderings generated in the 3D model and photo rendering software programs. The balloon was included in the photographs to provide a visual marker and to cross-reference the height and proportions of the proposed Facility. A photolog map and the simulations are contained in Attachment A.

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## CONCLUSIONS

Based on this analysis, areas from where the proposed 190-foot tall Facility would be visible above the tree canopy comprise approximately 30 acres. As depicted on the attached viewshed map, the majority of year-round visibility associated with the proposed Facility would occur on the host property and on several adjacent agricultural fields that are similarly open and undeveloped located within the general vicinity of the host property. The viewshed map also depicts areas of potential year-round visibility along select portions of Northwest Corner Road and over a large, undeveloped parcel located approximately 1.30-mile to the northwest of the proposed Facility. Based on a review of available aerial photography, this parcel appears to be used for agricultural purposes. VHB estimates that at least partial year-round views of the proposed Facility may be achieved from portions of one (1) residential property within the Study Area. This property is located off Northwest Corner Road adjacent to View 4 and would likely have views similar to what is being depicted in that photograph/photographic simulation. This information is summarized in the table below. Overall, potential year-round views of the proposed Facility would be limited to the areas described above by a combination of the intervening topography and vegetation contained within the Study Area. No views are anticipated from Andersons Pond or portions of the Narragansett Trail contained within the Study Area which are typically heavily forested.

The viewshed map also depicts several additional areas where seasonal (i.e. during "leaf off" conditions) views are anticipated. These areas comprise approximately 32 additional acres and are located on and/or within the general vicinity of the host property. VHB estimates that seasonal views of the proposed Facility may be achieved from portions of approximately two (2) additional residential properties within the Study Area, both of which are located off Northwest Corner Road. In general, VHB anticipates that such views would be limited in their extent and/or mainly obstructed by vegetation, even during leaf-off conditions. The locations of these properties are provided in the table below.

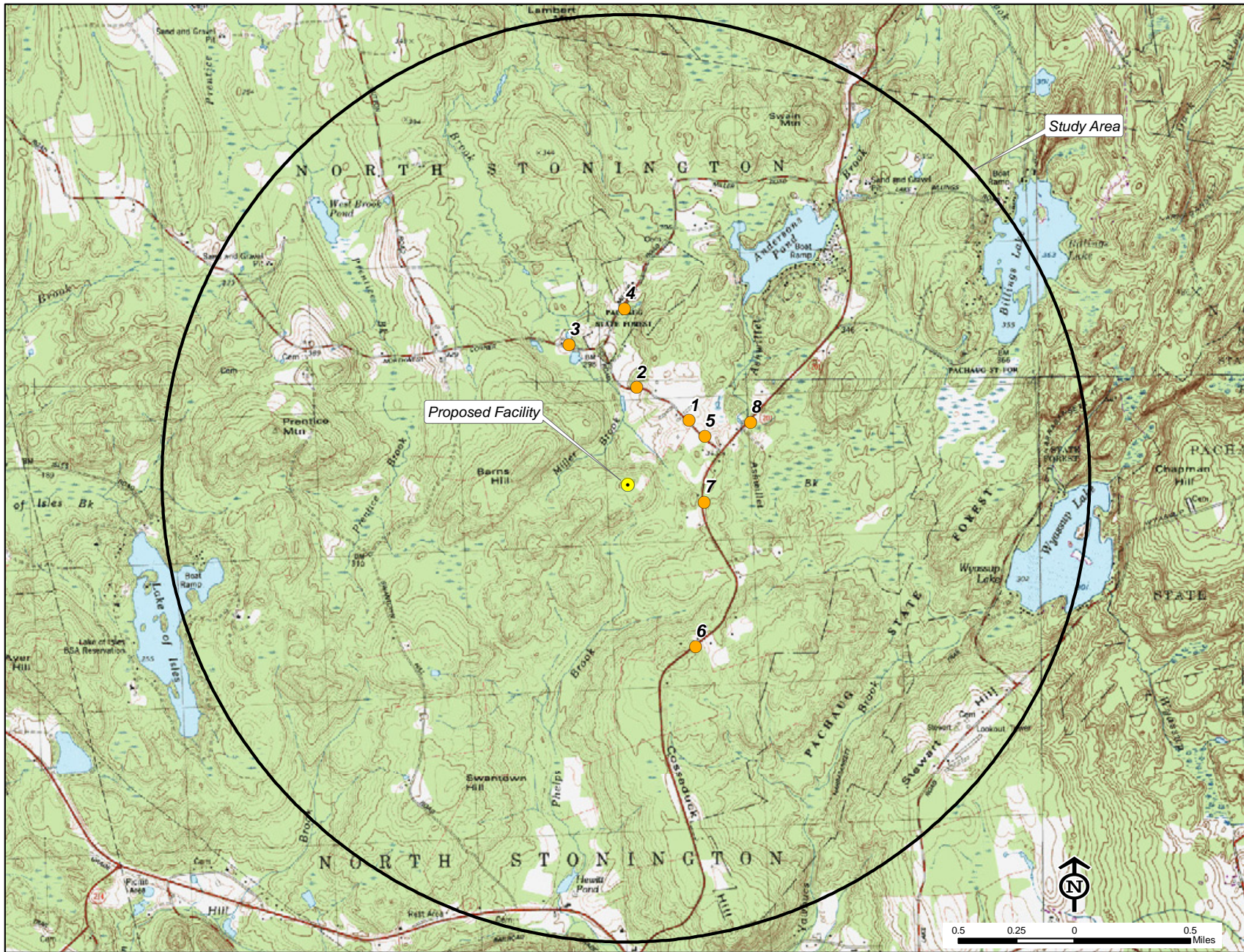
<b>Location</b>	<b>*Number of Residential Properties With Potential Year-Round Visibility (Leaf-On)</b>	<b>*Number of Residential Properties With Potential Seasonal Visibility (Leaf-Off)</b>
Northwest Corner Road	1	2
<b>TOTAL:</b>	<b>1</b>	<b>2</b>

\*Indicates potential year-round or seasonal visibility from portions of the properties listed in the table above. Potential visibility on a “residential property” does not necessarily mean that the property is developed with a home or views would be achieved from within residential dwellings, exterior decks, porches or patios that might be located on such properties. Further, it may be possible to view the Facility from within portions of the shaded areas indicating potential visibility, but not necessarily from all locations within those shaded areas.

# Attachment A

## Study Area Map, Balloon Float Photographs, and Photographic Simulations

# PHOTOLOG MAP



J:\40999.37\graphics\FIGURES\40999.37\_Photosim\_NW\_Corner\_Rd



# PHOTOGRAPHIC DOCUMENTATION



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
1	NORTHWEST CORNER ROAD AT HOST PROPERTY	SOUTHWEST	0.38 MILE +/-	YEAR-ROUND



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
<b>1</b>	<b>NORTHWEST CORNER ROAD AT HOST PROPERTY</b>	<b>SOUTHWEST</b>	<b>0.38 MILE +/-</b>	<b>YEAR-ROUND</b>

# PHOTOGRAPHIC DOCUMENTATION



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	NORTHWEST CORNER ROAD	SOUTH	0.42 MILE +/-	YEAR-ROUND



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
2	NORTHWEST CORNER ROAD	SOUTH	0.42 MILE +/-	YEAR-ROUND

# PHOTOGRAPHIC DOCUMENTATION



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
<b>3</b>	ADJACENT TO #96 NORTHWEST CORNER ROAD	SOUTHEAST	0.65 MILE +/-	YEAR-ROUND



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
<b>3</b>	ADJACENT TO #96 NORTHWEST CORNER ROAD	SOUTHEAST	0.65 MILE +/-	YEAR-ROUND

# PHOTOGRAPHIC DOCUMENTATION



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
4	MILLER ROAD	SOUTH	0.76 MILE +/-	NOT VISIBLE

# PHOTOGRAPHIC DOCUMENTATION



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
5	NORTHWEST CORNER ROAD	SOUTHWEST	0.40 MILE +/-	NOT VISIBLE



# PHOTOGRAPHIC DOCUMENTATION



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VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
6	ADJACENT TO #167 ROUTE 201	NORTHWEST	0.76 MILE +/-	NOT VISIBLE

# PHOTOGRAPHIC DOCUMENTATION



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
7	ADJACENT TO #247 ROUTE 201	NORTHWEST	0.34 MILE +/-	NOT VISIBLE

# PHOTOGRAPHIC DOCUMENTATION



J:\40989.37\graphics\FIGURES\40989.37\_Photosim\_NW\_Corner\_Rd

VIEW	LOCATION	ORIENTATION	DISTANCE TO SITE	VISIBILITY
8	ADJACENT TO #300 ROUTE 201	SOUTHWEST	0.60 MILE +/-	NOT VISIBLE

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# Attachment B

## Viewshed Map

Viewshed Analysis  
Proposed Wireless  
Telecommunications Facility  
Potential Alternate Site Location 3  
25 Northwest Corner Road  
North Stonington, Connecticut

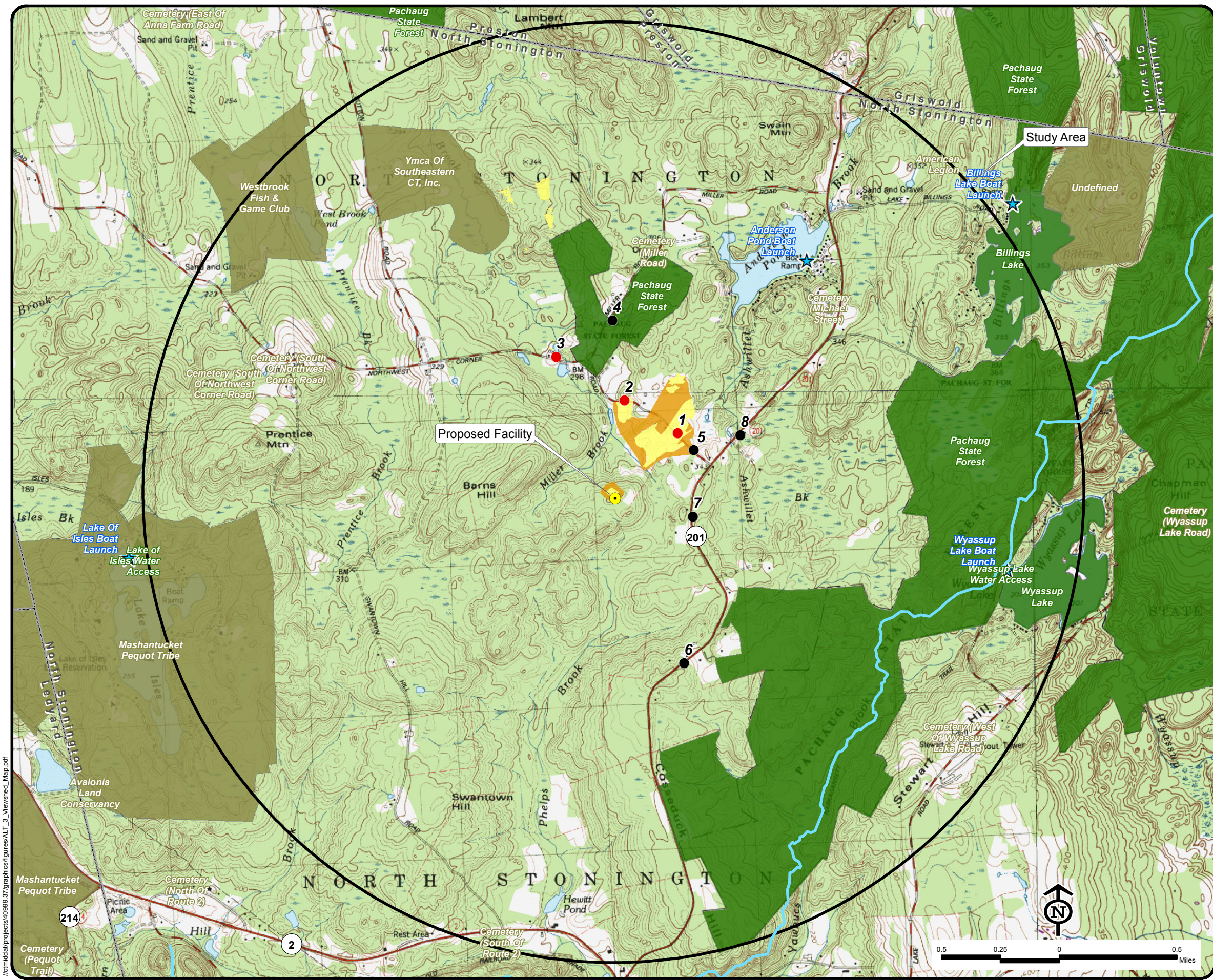
NOTE:  
 - Viewshed analysis conducted using ESRI's Spatial Analyst.  
 - Proposed Facility height is 190 feet.  
 - Existing tree canopy height estimated at 65 feet.  
 - Study Area is comprised of a two-mile radius surrounding the proposed facility and includes 8,042 acres of land.

DATA SOURCES:  
 - Digital elevation model (DEM) derived from Connecticut LiDAR-based Digital Elevation Data (collected in 2000) with a 10-foot spatial resolution produced by the University of Connecticut and the Center for Land Use Education and Research (CLEAR); 2007  
 - Forest areas derived from 2008 digital orthophotos with 1-meter pixel resolution; digitized by VHB, 2010 and 2011  
 - Base map comprised of Jewett City, Ashaway (1984), Old Mystic (1983), and Voluntown (1975) USGS Quadrangle Maps  
 - Municipal and Private Open Space data layer provided by CT DEP, 1997  
 - Federal Open Space data layer provided by CT DEP, 2004  
 - CT DEP Property data layer provided by CT DEP, April 2010  
 - CT DEP boat launches data layer provided by CT DEP, Dec 2009  
 - Scenic Roads layer derived from available State and Local listings

Map Compiled June, 2011

**Legend**

Proposed Tower Location	CT DEP Property (CT DEP, May 2010)
Photographs - May 24, 2011	State Forest
Balloon is not visible	State Park
Balloon visible above trees	DEP Owned Waterbody
Seasonal Visibility (Approximately 32 acres)	State Park Scenic Reserve
Year-Round Visibility (Approximately 30 acres)	Historic Preserve
Protected Municipal and Private Open Space (CT DEP, 1997)	Natural Area Preserve
Cemetery	Fish Hatchery
Preservation	Flood Control
Conservation	Other
Existing Preserved Open Space	State Park Trail
Recreation	Water Access
General Recreation	Wildlife Area
School	Wildlife Sanctuary
Uncategorized	Federal Open Space (CT DEP, 2004)
	Boat Launches (CT DEP, Dec 2009)
	Scenic Road (State and Local)
	Narragansett Trail (CT Blue Blaze)
	Town Line



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